Order Code RL30033

Arms Control and Nonproliferation Activities: A Catalog of Recent Events

Updated January 19, 2006

Amy F. Woolf, Coordinator
Specialist in National Defense
Foreign Affairs, Defense, and Trade Division

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Summary

This report contains brief descriptions of the most prominent arms control and nonproliferation efforts in which the United States has participated during recent years. The entries describe the substance of each arms control effort, the period in which the effort occurred, and the status of the effort at the end of 2004.

The first section of this report describes arms control efforts between the United States and the states of the former Soviet Union. Among the agreements described here are the START Treaties that impose deep reductions on strategic offensive nuclear weapons in the United States and former Soviet Union. START I entered into force in late 1994; both the United States and Russia approved START II, but it did not enter into force and has fallen aside with the negotiation of the Strategic Offensive Reductions Treaty. It also describes the debate over the ABM Treaty, U.S. policy on missile defenses, and the U.S. withdrawal from the Treaty. The second section reviews efforts, by the United States and its allies, to assist the states of the former Soviet Union with the elimination and enhanced security of their nuclear, biological, and chemical weapons and the associated materials.

The third section of this report describes several agreements that affect conventional weapons. These include the CFE Treaty and the Open Skies Treaty, along with efforts to control or ban anti-personnel landmines.

The fourth section of this report focus on multilateral nonproliferation efforts, such as the Nuclear Nonproliferation Treaty and the Comprehensive Nuclear Test Ban Treaty. This section also describes non-nuclear nonproliferation efforts, such as the Chemical Weapons Convention and Biological Weapons Convention, and efforts to control the proliferation of conventional weapons and dual-use technologies.

The final section of the report highlights specific regions and countries that pose challenges to the nonproliferation regimes. These include China, where the United States has sought to discourage activities that might help other countries acquire weapons of mass destruction and to encourage China's participation in nonproliferation regimes; North Korea, where the United States continues to seek to stop the acquisition of nuclear weapons; Libya, which agreed in 2004 to eliminate its WMD programs; Iraq, where the United States and United Nations continue to seek to dismantle and contain WMD programs; Iran, which many experts believe is seeking to acquire nuclear weapons; and South Asia, where the May 1998 nuclear weapons tests raised concerns for both the international Nuclear Nonproliferation regime and the Comprehensive Test Ban Treaty.

The appendices at the end of the report contain a more comprehensive list of arms control treaties and agreements, a list of arms control organizations, and additional information about the U.S. treaty ratification process.

This report is updated annually, at the beginning of the calendar year.

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Arms Control and Nonproliferation Activities: A Catalog of Recent Events

Introduction

National Security, Arms Control, and Nonproliferation

For much of the past century, U.S. national security strategy focused on several core, interrelated objectives. These include enhancing U.S. security at home and abroad; promoting U.S. economic prosperity; and promoting free markets and democracy around the world. It is important to note that the priority and emphasis that the United States has placed on each of these objectives has varied at different times since World War II. In addition, the United States has used both unilateral and multilateral mechanisms to achieve these objectives, again with varying amounts of emphasis at different times. These mechanisms have included a range of military, diplomatic, and economic tools. Thus, the post-World War II legacy of the United States is largely an assessment of the success or failure of these tools, as well as the strategy behind their employment.

One of these core objectives — enhancing U.S. security — generally is interpreted as the effort to protect the nation's interests and includes, for instance, protecting the lives and safety of Americans; maintaining U.S. sovereignty over its values, territory, and institutions; and promoting the nation's well-being. The United States has wielded a deep and wide range of military, diplomatic, and economic tools to protect and advance its interests. These include, for instance, the deployment of military forces to deter, dissuade, persuade, or compel others; the formation of alliances and coalitions to advance U.S. interests and counter aggression; and the use of U.S. economic power to advance its agenda or promote democratization, or to withhold U.S. economic support to condemn or punish states hostile to U.S. interests.

In this context, arms control and nonproliferation efforts are two of the tools available to implement the U.S. national security strategy. They generally are not pursued as ends in and of themselves, and many argue that they should not become more important than the strategy behind them. But many believe their effective employment can be critical to the success of that broader strategy. Many analysts see them as a complement to, rather than a substitute for, military or economic efforts.

Effective arms control measures are thought to enhance U.S. national security in a number of ways. For example, arms control measures that promote transparency might increase U.S. knowledge about and understanding of the size, make-up, and operations of an opposing military force. This might not only ease U.S. military planning, but it might also reduce an opponent's incentives for and opportunities to attack U.S. forces, or the forces of its friends and allies. Transparency measures can

also build confidence among wary adversaries. Effective arms control measures can also be designed to complement U.S. force structure objectives by limiting or restraining U.S. and other nations' forces. In an era of declining defense budget resources, such as the 1980s and 1990s, arms control measures helped ensure reciprocity in force reductions. Indeed, some consider such arms control measures essential to the success of our national military objectives.

Similarly, most agree that efforts to prevent the further spread of weapons of mass destruction and their means of delivery should be an essential element of U.S. national security. For one reason, proliferation can exacerbate regional tensions that might escalate to conflict and involve or threaten U.S. forces or those of its friends and allies. Proliferation might also introduce new, and unexpected threats to the U.S. homeland. Furthermore, proliferation can greatly complicate U.S. national military strategy, force structure design, and conduct of operations. And these weapons could pose a threat to the U.S. homeland if they were acquired by terrorists or subnational groups. Hence, the United States employs diplomatic, economic, and military tools to restrain these threats and enhance its national security.

The Bush Administration has altered the role of arms control in U.S. national security policy. The President and many in his Administration question the degree to which arms control negotiations and formal treaties serve to enhance U.S. security objectives. In fact, they have noted that many multilateral arms control regimes may go too far in restraining U.S. options without limiting the forces of potential adversaries. The Administration has indicated that, when necessary, the United States might take unilateral military action to stem the proliferation of weapons of mass destruction. The war against Iraq in 2003 proved the Administration's willingness in this regard. Further, the Administration has turned to unilateral measures or ad hoc coalitions, rather than multilateral agreements, in many of its efforts to keep nuclear, chemical, and biological materials away from terrorists or rogue nations. The absence of confidence in arms control has extended to the State Department, where the Bush Administration has removed the phrase "arms control" from all bureaus that were responsible for this policy area. The focus remains on nonproliferation, but this is seen as policy area that no longer requires formal arms control treaties to meet its objectives.

In its early years, the Bush Administration also argued that the United States did not need formal treaties to reduce or restrain its strategic nuclear forces.[1] In response to various Russian interests, the Administration did incorporate its planned unilateral nuclear reductions in the bilateral Moscow Treaty. Some observers argue that the arms control process itself remains important because it can provide both predictability and transparency to the arms reduction process. Others, however, argue that the U.S.-Russian arms control process implies an adversarial relationship between the two nations, and that such a relationship no longer exists.

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[1] The White House, Office of the Press Secretary. Press Conference. President Bush and President Putin Discuss New Relationship. November 13, 2001.

The Arms Control Agenda

The United States has participated in numerous arms control and nonproliferation efforts over the past 40 years. These efforts have produced formal treaties and agreements that impose restrictions on U.S. military forces and activities, informal arrangements and guidelines that the United States has agreed to observe, and unilateral restraints on military forces and activities that the United States has adopted either on its own, or in conjunction with reciprocal restraints on other nations' forces and activities. Because these arms control arrangements affect U.S. national security, military programs, force levels, and defense spending, Congress has shown a continuing interest in the implementation of existing agreements and ongoing negotiations.

The changing international environment in the 1990s led many analysts to believe that the United States and other nations could enter a new era of restraint in weapons deployments, weapons transfers, and military operations. These hopes were codified in several treaties signed between 1991 and 1996, such as the Strategic Arms Reduction Treaties (START I and START II), the Chemical Weapons Convention, and the Comprehensive Nuclear Test Ban Treaty. Yet, for many, hopes for a new era were clouded by the slow pace of ratification and implementation for many agreements. The 1991 START I Treaty did not enter into force until late 1994; the 1993 START II Treaty never entered into force and was replaced by a new, less detailed Strategic Offensive Reductions Treaty. The 1996 Comprehensive Test Ban Treaty (CTBT), in spite of widespread international support, failed to win approval from the United States Senate in October 1999. Furthermore, India, Pakistan, Iran, and North Korea raised new questions about the viability of the Nuclear Nonproliferation Treaty and its role in stemming nuclear proliferation.

Some progress did occur in the latter years of the decade. In 1997, the United States and Russia, the two nations with the largest stockpiles of chemical weapons, both ratified the Chemical Weapons Convention. In December 1997, more than 120 nations signed an international agreement banning the use of anti-personnel land mines; although, a number of major nations, including the United States, have so far declined to sign. But this momentum did not continue for long. The United States and Russia's failed to ratify the 1993 START II Treaty. In addition, ballistic missile tests in North Korea, Pakistan, and Iran led many to call for the deployment of missile defense systems that would exceed the terms of the 1972 Anti-ballistic Missile (ABM) Treaty. Furthermore, the U.S. Senate's rejection of the CTBT, the Bush Administration's withdrawal from the ABM Treaty, and the U.S. rejection of a verification protocol for the Biological Weapons Convention led many nations to question the U.S. commitment to the arms control process. The 2003 Strategic Offensive Reductions Treaty is likely to be the last formal arms control agreement between the United States and Russia. This treaty entered into force in mid-2003, but it outlined force reductions that the United States had already planned to pursue and it lacked many of the definitions, details, and monitoring provisions that had become common in bilateral arms control agreements.

The United States has outlined many new initiatives in nonproliferation policy that take a far less formal approach, with voluntary guidelines and voluntary participation replacing treaties and multilateral conventions. With these new

initiatives, the Administration has signaled a change in the focus of U.S. nonproliferation policy. Instead of offering its support to international regimes that seek to establish nonproliferation norms that apply to all nations, the Administration has turned to arrangements that seek, instead, to prevent proliferation only to those nations and groups that the United States believes can threaten U.S. or international security. In essence, nonproliferation has become a tool of anti-terrorism policy, which, in some ways, may diminish its role as a tool of international security policy.

This report is a basic reference guide to recent arms control efforts. It contains brief descriptions of several key bilateral, regional, and multilateral arms control efforts that limit nuclear, conventional, chemical, and biological weapons. Some of the entries describe agreements that have been in place for many years; others describe efforts that have been concluded in recent years. Each entry describes the process of reaching agreement, the substance of the negotiations, and the status of the arms control effort at the end of 1998. The report also lists CRS reports that provide more detailed information about each arms control effort.

The report is divided into five sections. The first describes arms control efforts between the United States and the states of the former Soviet Union. The entries describe several formal arms control treaties that limit nuclear weapons and ballistic missile defenses, such as START and the ABM Treaty. The second section focuses on the less formal cooperative threat reduction and nonproliferation efforts between the United States and Russia. It includes entries on DOD and DOE programs, along with an entry on a multilateral initiative to secure weapons and materials in Russia.

The third section of this report describes multilateral arms control efforts that affect conventional weapons (such as tanks, artillery, aircraft, and land mines,) and military activities. The fourth section describes multilateral regimes and includes entries on nuclear, chemical, biological, and missile nonproliferation efforts. The fifth and final section contains brief descriptions of nations that currently pose challenges to the nonproliferation regimes.

The report concludes with several appendices. These provide a list of treaties and agreements that the United States is a party to, a description of the treaty ratification process, a glossary of selected arms control terms, and a list of the bilateral and international organizations tasked with implementation of arms control efforts.

Arms Control between the United States and States of the Former Soviet Union

The Intermediate-Range Nuclear Forces Treaty

Introduction. The United States and the Soviet Union signed the Treaty on Intermediate-Range Nuclear Forces (INF) on December 8, 1987, at a time when both nations were attempting to reduce tensions in Europe. The INF Treaty was seen as a significant milestone in arms control because it established an intrusive verification regime and because it served to improve relations by eliminating classes of weapons that both sides regarded as modern and effective. The parties had eliminated all their weapons by May 1991; they concluded the Treaty's monitoring regime in May 2001.

Background: Treaty Negotiations. In December 1979, NATO decided upon a "two track" approach to INF systems in Europe: it would seek negotiations with the Soviets to eliminate such systems, and at the same time schedule INF deployments as a spur to such negotiations. The United States viewed its INF systems as weapons that would strengthen deterrence and demonstrate resolve in defending its allies. Negotiating sessions began in the fall of 1980 and continued in a desultory fashion until November 1983, when the Soviets left the talks upon deployment of the first U.S. INF systems in Europe. The negotiations on nuclear weapons did not resume until January 1985, when the two sides agreed to "umbrella" talks covering strategic offensive and defensive systems, as well as INF. The Soviets insisted that resolution of central issues at all three talks were necessary before agreement at any one set of negotiations could be possible. At the negotiations, the Reagan Administration called for a "double zero" option, which would eliminate all short- as well as long-range INF systems, a position at the time viewed by most observers to be unattractive to the Soviets.

Significant progress at the talks occurred during the Gorbachev regime. At the Reykjavik summit in October 1986, Gorbachev for the first time agreed to include reductions of Soviet INF systems in Asia. In February 1987, he announced that an INF agreement could be achieved without linkage to progress at the talks on strategic offensive and defensive systems. In June 1987, the Soviets proposed a global ban on short- and long-range INF systems. A global ban would facilitate implementation of an accord, since each side's intelligence community would not be concerned with estimates of remaining systems; rather, any system discovered would constitute a violation. The intrusive verification regime agreed to by both sides made possible the signing of the accord in December 1987.

Limits and Provisions. Under the INF Treaty, the United States and Soviet Union agreed to destroy all intermediate-range and shorter-range nuclear-armed ballistic missiles and ground-launched cruise missiles, which are those missiles with a range between 300 and 3400 miles. The launchers associated with the controlled missiles were also to be destroyed. The signatories agreed that the warheads and guidance systems of the missiles need not be destroyed; they could be used or reconfigured for other systems not controlled by the Treaty.

The key U.S. objective at the INF negotiations was to eliminate modern Soviet nuclear systems able to put at risk important targets in NATO Europe. A political objective of the talks became, over time, to improve relations with the Soviet Union. The Treaty was signed and ratified while Mikhail Gorbachev was in power. The agreement is viewed as an effort by Gorbachev to make a significant step toward improving relations with the West and to scale down the Soviet military apparatus.

Under the Treaty, the Soviets agreed to destroy approximately 1750 missiles and the United States agreed to destroy 846 missiles. The agreement thereby established a principle that asymmetrical reductions were acceptable in order to achieve a goal of greater stability. On the U.S. side, the principal systems destroyed were the Pershing II ballistic missile and the ground launched cruise missile (GLCM), both single-warhead systems. On the Soviet side, the principal system was the SS-20 ballistic missile, which carried three warheads. These systems, on both sides, were highly mobile and able to strike such high-value targets as command-and-control centers, staging areas, airfields, depots, and ports. The Soviets also agreed to destroy a range of older nuclear missiles, as well as the mobile, short-range SS-23, a system developed and deployed in the early 1980s.

The verification regime of the INF Treaty permitted on-site inspections of selected missile assembly facilities and all storage centers, deployment zones, and repair, test, and elimination facilities. Although it did not permit "anywhere, anytime" inspections, it did allow up to 20 short-notice inspections of sites designated in the Treaty. The two sides agreed to an extensive data exchange, intended to account for all systems covered by the agreement. The Treaty established a portal monitoring procedure at one assembly facility in each country. The United States chose to monitor an SS-20 assembly facility at Votkinsk, and the Soviets chose a Hercules plant in Magna, Utah, where Pershing II motors had once been manufactured. The Treaty allowed monitoring of these two sites for up to thirteen years from the date of the accord's ratification. This period ended in May, 2001. The Treaty established a Special Verification Commission (SVC), to meet on demand to resolve all verification issues relevant to the agreement. (See Appendix D for more information on this and other arms control implementation organizations.)

Treaty Implementation. The INF Treaty called for the elimination of all U.S. and Soviet INF systems by the end of May 1991. Both nations had destroyed all declared systems by that date. However, several problems arose as the two sides were eliminating their systems. The Soviets temporarily blocked U.S. monitoring teams at Votkinsk from using an imaging device intended to detect if SS-20s were being shipped out of the plant. The United States also discovered a few old launchers and transporters for SS-4s and support equipment for SS-5s — both systems banned by the Treaty — that the Soviets had not declared. The two sides resolved these issues in discussions at the SVC.

A thornier issue arose over the SS-23, a short-range system banned by the Treaty. In the summer of 1991, the Czechoslovak, Bulgarian, and German governments announced that each had 24 SS-23s on its soil, but that no nuclear warheads were present. The Soviets contended that the systems were sold before the Treaty was signed. The United States could not determine at what date the systems had been transferred, but contended that in any event the systems should have been

listed in the data exchange. The March 30, 1992 Presidential report on Soviet non-compliance with arms control agreements stated that the United States believed the Soviet Union probably had a program of cooperation with these nations for these missiles, so the reentry vehicles for these missiles should have been eliminated under the terms of the Treaty's Elimination Protocol. The German and Czechoslovak governments had agreed to return the missiles to the Soviets (now the Russians) for destruction. The Bulgarian government postponed a decision on the matter; some reports indicate a few missiles remain in storage in that nation.

Both sides completed their INF weapons eliminations and have concluded operations under the Treaty's monitoring and verification provisions. Monitoring continues, however, at the Votkinsk Missile Assembly facility under the terms of the 1991 START I Treaty. In 2001, Russia threatened to walk away from the INF Treaty if the United States withdrew from the 1972 ABM Treaty. It did not take this step in June 2002, when the U.S. withdrew from the ABM Treaty. Nevertheless, some believe that Russia may eventually want to produce new medium-range missiles to make up for conventional weaknesses along its border with China.

Issues for Congress. The INF Treaty permits on-site monitoring at missile assembly facilities for 13 years, a time-frame that ended on May 31, 2001. Some in Congress may question whether the United States will remain confident about Russia's compliance with the treaty after this date. The United States will maintain a presence at the Votkinsk missile assembly facility under the START I Treaty, which permits monitoring through 2009.

Another issue of potential concern to Congress could be proposals made by analysts in the arms control community to "multilateralize" the INF Treaty. These analysts believe that the Treaty's ban on short- and intermediate-range ballistic missiles could contribute to efforts to stem the proliferation of ballistic missiles and ease tensions among regional adversaries. There is, however, little evidence of interest in such an agreement among those nations who possess ballistic missiles that would be banned by an "international" INF Treaty.

For Further Reading

Arms Control: Ratification of the INF Treaty, CRS Issue Brief IB88003. (Archived. For copies, contact Amy Woolf, 202-707-2379.)

Verification and Compliance: Soviet Compliance with Arms Control Agreements, CRS Issue Brief IB84131.(Archived. For copies, contact Amy Woolf, 202-707-2379.)

The Strategic Arms Reduction Treaty (START)

Introduction. The United States and Soviet Union signed the first Strategic Arms Reduction Treaty (START) on July 31, 1991. A May 1992 Protocol named the four former Soviet republics with strategic nuclear weapons on their territory (Russia, Belarus, Kazakhstan, and Ukraine) as the legal successors to the Soviet Union in START. The Treaty entered into force on December 5, 1994. Implementation proceeded relatively smoothly, and was completed on December 5, 2001. The Treaty's limits and inspection regime will remain in place until the end of 2009. Furthermore, because the START II Treaty will not enter into force (see below), the United States has resumed referring to this treaty as START, instead of START I.

START Negotiation and Ratification. START negotiations began in 1982, stopped between 1983 and 1985 after a Soviet walk-out in response to the U.S. deployment of intermediate range missiles in Europe, and were eventually completed in July 1991. But the demise of the Soviet Union in December 1991 immediately raised questions about the future of the Treaty. At that time, about 70 percent of the strategic nuclear weapons covered by START were deployed at bases in Russia; the other 30 percent were deployed in Ukraine, Kazakhstan, and Belarus.[2] Russia initially sought to be the sole successor to the Soviet Union for the Treaty, but the other three republics did not want to cede all responsibility for the Soviet Union's nuclear status and treaty obligations to Russia. In May 1992, the four republics and the United States signed a Protocol that made all four republics parties to the Treaty. At the same time, the leaders of Belarus, Ukraine, and Kazakhstan agreed to eliminate all of their nuclear weapons during the seven-year reduction period outlined in START. They also agreed to sign the Nuclear Non-Proliferation Treaty (NPT) as non-nuclear weapons states.

The U.S. Senate gave its consent to the ratification of START on October 1, 1992. Kazakhstan completed the ratification process in June 1992 and joined the NPT as a non-nuclear weapon state on February 14, 1994. Belarus approved START and the NPT on February 4, 1993, and formally joined the NPT as a non-nuclear weapon state on July 22, 1993. The Russian parliament consented to the ratification of START on November 4, 1992, but it stated that Russia would not exchange the instruments of ratification for the Treaty until all three of the other republics adhered to the NPT as non-nuclear states. Ukraine's parliament approved START in November 1993, but its approval was conditioned on Ukraine's retention of some of the weapons based on its territory and the provision of security guarantees by the other nuclear weapons states. In early 1994, after the United States, Russia, and Ukraine agreed that Ukraine should receive compensation and security assurances in exchange for the weapons based on its soil, the parliament removed the conditions from its resolution of ratification. But it still did not approve Ukraine's accession to the NPT, an action that had to occur before Russia would permit START to enter into

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[2] Leaders in these the non-Russian republics did not have control over the use of the nuclear weapons on their territory. Russian President Boris Yeltsin, and now Valdimir Putin, is the sole successor to the Soviet President in the command and control structure for Soviet nuclear weapons and he, along with his Minister of Defense and Military Chief of Staff, have the codes needed to launch Soviet nuclear weapons.

force. The Ukrainian parliament took this final step on November 16, 1994, after insisting on and apparently receiving additional security assurances from the United States, Russia, and Great Britain. START officially entered into force with the exchange of the instruments of ratification on December 5, 1994.

Limits and Provisions. START limits long-range nuclear forces — land-based intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and heavy bombers — in the United States and the newly independent states of the former Soviet Union. Each side can deploy up to 6,000 *attributed* warheads on 1,600 ballistic missiles and bombers. (Some weapons carried on bombers will not count against the Treaty's limits, so each side could deploy 8,000 or 9,000 actual weapons.) Each side can deploy up to 4,900 warheads on ICBMs and SLBMs. START also limits each side to 1,540 warheads on "heavy" ICBMs, a 50 percent reduction in the number of warheads deployed on the SS-18 ICBMs in the former Soviet republics. (The United States does not have any heavy ICBMs so this limit will not affect U.S. forces.) Throughout the START negotiations, the United States placed a high priority on reductions in heavy ICBMs because they were thought to be able to threaten a first strike against U.S. ICBMs.

START did not require the elimination of most of the missiles removed from service. The nations had to eliminate *launchers* for missiles that exceeded the permitted totals, but, in most cases, missiles can be placed in storage and warheads can either be stored or reused on missiles remaining in the force.

START contains a complex verification regime. Both sides collect most of the information needed to verify compliance with their own satellites and remote sensing equipment — the National Technical Means of Verification (NTM). But the parties can also use intrusive measures such as data exchanges, notifications, and on-site inspections to gather information about forces and activities limited by the Treaty. Taken together, these measures are designed to provide each nation with the ability to deter and detect militarily significant violations. (No verification regime can ensure the detection of all violations. A determined cheater could probably find a way to conceal some types of violations.) Many also believe that the intrusiveness mandated by the START verification regime and the cooperation needed to implement many of these measures builds confidence and encourages openness among the signatories.

Even before START entered into force, the parties had begun to deactivate weapons that were eliminated under the Treaty. The parties destroyed launchers covered by the Treaty at a pace faster than the one needed to meet the requirements of the Treaty's interim limits. All the warheads from 104 SS-18 ICBMs in Kazakhstan have been removed and returned to Russia and all the launchers in that nation have been destroyed. Ukraine has destroyed all the SS-19 ICBM and SS-24 ICBM launchers on its territory and returned all the warheads from those missiles to Russia. Belarus had returned to Russia all 81 SS-25 missiles and warheads based on its territory by late November 1996. The United States and Russia completed the reductions in their forces by the designated date of December 5, 2001.

Issues for Congress.

Disposition of Retired Missiles and Warheads. Many Members of Congress questioned why START did not require the elimination of missiles and warheads. They believed these missiles and warheads could pose either a break-out threat (if they could be returned to deployment quickly) or a proliferation threat (if they were stolen or sold to nations seeking nuclear capabilities). Most experts agree that stored missiles and warheads do not pose a threat to the United States because their launchers have been eliminated. In addition, the Department of Defense has stated that United States might reuse some of the warheads removed under START on missiles remaining in the force, so verified elimination would be contrary to some U.S. interests.

Costs of START Implementation. Although many observers expect arms control to save money by reducing operations and maintenance costs for U.S. strategic nuclear weapons, the process of implementing these reductions can be costly because Treaty provisions specify complex elimination procedures. Some officials in the Department of Defense have also noted that the Treaty's monitoring requirements could, over time, add to the development and testing costs of new U.S. weapons systems. The United States is also committed to helping the former Soviet republics with their weapons elimination costs through the Nunn-Lugar Cooperative Threat Reduction program, which is described later in this report.

Relationship to the Strategic Offensive Reductions Treaty. As is noted below, the United States and Russia signed a new Strategic Offensive Reductions Treaty in May 2002. This Treaty does not rely on the same definitions and counting rules as START, nor does it explicitly rely on the verification regime in START to monitor reductions. Yet, during hearings on the Treaty, Administration officials noted that the United States and Russia would have the transparency and confidence they need to monitor compliance with the new Treaty in part because START's verification provisions will remain in force through 2009. Some have argued that START should be extended at least through 2012 so that its monitoring provisions can continue to advise the verification process for the Moscow Treaty.

The future of START. The START Treaty is set to expire in December 2009. According to the Treaty, the parties must begin discussions, one year prior to that date, about the future of the Treaty. They could allow it to lapse, extend it without modification for another 5 years, or seek to modify the Treaty before extending it for 5 year intervals. Although some analysts have begun to review these alternatives neither the Bush Administration nor any of the other Treaty parties have announced their preferred positions.

For Further Reading

Cooperative Measures in START Verification, CRS Report 91-492 F. (Archived. For copies, contact Amy Woolf, 202-707-2379.)
Nuclear Arms Control: The U.S.-Russian Agenda, CRS Issue Brief IB98030.
START I and START II Arms Control Treaties: Background and Issues, CRS Report 93-617 F. (Archived. For copies, contact Amy Woolf, 202-707-2379.)

START II and the START III Framework

Introduction. The United States and Russia signed the second START Treaty, START II, on January 3, 1993. START II would have reduced the number of warheads to 3,500 on each side and would have eliminated of all land-based multiple warhead ballistic missiles (MIRVed ICBMs), including the Soviet SS-18 heavy ICBM. The U.S. Senate approved the ratification of START II on January 26, 1996; the Russian Duma approved a slightly different version of the Treaty on April 14, 2000. However, the treaty never entered into force. The Bush Administration never completed the ratification process and Russia announced that it had withdrawn from the Treaty after the United States withdrew from the 1972 ABM Treaty.

Negotiating the Treaty. The United States and Russia completed START II in less than one year, after the first President Bush proposed on January 28, 1992 that the nations eliminate all of their MIRVed ICBMs. President Bush also stated that, in exchange for Russia's agreement to ban heavy MIRVed ICBMs, where Russia had a monopoly, the United States would reduce by one-third the number of warheads deployed on U.S. SLBMs and reorient a significant number of heavy bombers to conventional missions. U.S. officials noted that these proposals would affect weapons systems where the United States had an advantage. Russian President Yeltsin did not respond directly to the U.S. proposal, suggesting instead that the nations reduce their forces to between 2,000 and 2,500 nuclear weapons. The number appeared consistent with the number of warheads Russia would retain after it eliminated older systems and those deployed in Soviet republics outside Russia.

Talks on START II began to make progress in May 1992, when the two sides began to narrow their differences over the total number of permitted warheads and separate sublimits on some types of weapons. Russia continued to resist a ban on MIRVed ICBMs unless the United States agreed to deeper reductions in SLBM warheads (below the one-third cut proposed by President Bush) and deeper cuts in total warheads. These differences were resolved by the Presidents during their summit in Washington in June 1992 when they agreed to reduce their forces to 3,500 warheads and to reduce SLBM warheads by 50 percent below the U.S. level. Formal discussions on a draft Treaty submitted by the United States began in late September. The talks stalled in October and November, when Russia sought changes in provisions governing warhead downloading, SS-18 silo elimination, bomber reorientation, and bomber inspections. The talks intensified in late December 1992 as the nations sought to complete a treaty before the end of the Bush Administration.

The two sides signed the Treaty on January 3, 1993, but full consideration of the Treaty was delayed until START entered into force. The U.S. Senate approved ratification of START II, by a vote of 87-4, on January 26, 1996. The Russian Duma held numerous committee hearings and meetings on the Treaty, but, when President Yeltsin resigned at the end of 1999, it had not yet voted on the treaty. Many members of the Duma disapproved of the way the Treaty would affect Russian strategic offensive forces and many objected to the economic costs Russia would bear when implementing the treaty. The United States sought to address the Duma's concerns during 1997, by negotiating a Protocol that would extend the elimination deadlines in START II, and, therefore, reduce the annual costs of implementation, and by agreeing to negotiate a START III Treaty after START II entered into force.

But this did not break the deadlock; the Duma again delayed its debate after the United States and Great Britain launched air strikes against Iraq in December 1998. The Treaty's future clouded again after the United States announced its plans in January 1999 to negotiate amendments to the 1972 ABM Treaty, and after NATO forces began their air campaign in Yugoslavia in April 1999.

President Putin offered his support to START II and pressed the Duma for action in early 2000. He succeeded in winning approval for the treaty on April 14 after promising, among other things, that Russia would withdraw from the Treaty if the United States withdrew from the 1972 ABM Treaty. However, the Federal Law on Ratification says the Treaty cannot enter into force until the United States approves ratification of several 1997 agreements related to the 1972 ABM Treaty. President Clinton never submitted these to the Senate, for fear they would be defeated. The Bush Administration never submitted the START II Protocol or ABM modifications to the Senate. The United States also withdrew from the ABM Treaty in June 2002. After that withdrawal, Russia announced that it had withdrawn from START II and would not implement the Treaty's reductions.

Limits and Provisions. START II would have limited each side to between 3,000 and 3,500 warheads; reductions initially were to occur by the year 2003 and would have been extended until 2007 if the nations had approved the new Protocol. It would have banned all MIRVed ICBMs; the nations could eliminate these missiles either by removing warheads from deployed missiles (a process known as "downloading") so that they carry only one warhead or by withdrawing MIRVed missiles and dismantling their launchers. It also limited each side to 1,750 warheads on SLBMs and allowed each side to reorient up to 100 bombers to conventional missions so they no longer count under the Treaty's limits.

To comply with these limits the United States would have downloaded its 500 3-warhead Minuteman III missiles and eliminated all launchers for its 50 10-warhead MX missiles. The United States also stated that it would reduce its SLBM warheads by eliminating 4 Trident submarines and deploying the missiles on the 14 remaining Trident submarines with 5, rather than 8, warheads. Russia would have eliminated all launchers for its 10-warhead SS-24 missiles and 10-warhead SS-18 missiles. It would also have downloaded to a single warhead 105 6-warhead SS-19 missiles, if it retained those missiles. It would also have eliminated a significant number of ballistic missile submarines, both for budget reasons and to reduce to START II limits. These changes would have brought Russian forces below the 3,500 limit because so many of Russia's warheads are deployed on MIRVed ICBMs. As a result, many Russian officials and Duma members insisted that the United States and Russia negotiate a START III Treaty, with lower warhead numbers, so that Russia would not have to produce hundreds of new missiles to maintain START II levels.

START II implementation would have accomplished the long-standing U.S. objective of eliminating the Soviet SS-18 heavy ICBMs. The Soviet Union and Russia had resisted limits on these missiles in the past. Russia would have achieved its long-standing objective of limiting U.S. SLBM warheads, although the reductions would not have been as great as those for MIRVed ICBMs. The United States had long resisted limits on these missiles, but apparently believed a 50 percent reduction was a fair trade for the complete elimination of Russia's SS-18 heavy ICBMs.

START II would have relied on the verification regime established by START I, with a few new provisions. For example, U.S. inspectors would be allowed to watch Russia pour concrete into the SS-18 silos and to measure the depth of the concrete when Russia converted the silos to hold smaller missiles. In addition, Russian inspectors could have viewed the weapons carriage areas on U.S. heavy bombers to confirm that the number of weapons the bombers are equipped to carry did not exceed the number attributed to that type of bomber.

START III Framework for Strategic Offensive Forces. In March 1997 Presidents Clinton and Yeltsin agreed that the United States and Russia would begin negotiations on START III as soon as START II entered into force. START III was to have limited each side to between 2,000 and 2,500 warheads on their strategic offensive nuclear weapons. These limits were an attempt to address Russia's concerns that the limits in START II were too high — requiring Russia to build several hundred new single-warhead missiles to retain 3,000 warheads after eliminating its MIRVed ICBMs. Many in Russia argued the United States and Russia should bypass START II and negotiate deeper reductions in nuclear warheads that were more consistent with the levels Russia was likely to retain in the future. The Clinton Administration did not want to set START II aside, in part because it wanted to be sure Russia eliminated its MIRVed ICBMS. However, many in the Administration eventually concluded that Russia would not ratify START II without some assurances that the warhead levels would decline further. So the United States agreed to proceed to START III, but *only after* START II entered into force.

Presidents Clinton and Yeltsin also agreed that START III should contain measures to promote the irreversibility of the weapons elimination process, including transparency measures and the destruction of strategic nuclear warheads removed from delivery vehicles. This responds to a condition that the Senate added to the START I resolution of ratification and it could address concerns about the possible theft or sale of warheads to nations seeking their own nuclear weapons.

The United States and Russia held several rounds of discussions on START III, but they could not resolve their differences. For example, the Russians proposed that the treaty reduce strategic nuclear forces to 1,500 or fewer warheads on each side. The United States has resisted such deep reductions in the past, and when it tabled a new proposal in January 2000, it reportedly continued to insist that START III reduce forces to 2,000 or 2,500 warheads.

Issues For Congress.

Force Reductions without START II. Since FY1998, Congress precluded U.S. force reductions below START I levels until START II entered into force. This policy was seen as a way to encourage Russia to approve START II. The Clinton Administration sought repeal of this legislation because it forced the Defense Department to retain weapons it did not need and could not afford. Congress would not allow the Clinton Administration to reduce U.S. forces unilaterally. However, Congress repealed this prohibition in the FY2002 Defense Authorization Bill so that the Bush Administration could reduce U.S. nuclear forces.

Elimination of MIRVed ICBMs. Many analysts consider the ban on MIRVed ICBMs to be a major achievement of the START II Treaty. Without the ban, Russia now plans to retain some of its older MIRVed ICBMs and to deploy multiple warheads on its new SS-27 missiles. Secretary of Defense Rumsfeld has argued that this would not undermine U.S. security. Others, however, believe that Russia's deployment of MIRVed ICBMs could prove destabilizing in a crisis, even if the two nations now enjoy a more constructive relationship.

Non-Strategic Nuclear Weapons. Presidents Clinton and Yeltsin had agreed to explore possible measures for limiting long-range, nuclear-armed, sea-launched cruise missiles and other tactical nuclear weapons in the START III framework. These weapons systems are not limited by existing treaties. Many in Congress have joined analysts outside the government in expressing concerns about the safety and security of Russia's stored nuclear weapons. Some in the Bush Administration, including Secretary of State Powell, have acknowledged concerns about potential problems with Russia's nonstrategic nuclear weapons, but the Administration has not outlined proposals to directly address these weapons.

Warhead transparency and elimination. When establishing the START III framework, the United States and Russia agreed that they would explore proposals to enhance transparency and promote the irreversibility of warhead reductions. Many analysts viewed this step as critical to lasting, predictable reductions in nuclear weapons. The Bush Administration has, however, altered the U.S. approach. It has stated, specifically, that it does not intend to eliminate many U.S. nuclear warheads as it reduces the number of deployed warheads. It wants to retain U.S. flexibility and the ability to restore warheads to deployed forces. Many critics of the Administration oppose this policy, in part, because it will undermine U.S. efforts to encourage Russia to eliminate warheads that might be at risk of loss or theft.

For Further Reading

Nuclear Arms Control: The U.S. Russian Agenda, CRS Issue Brief IB98030.
START I and START II Arms Control Treaties: Background and Issues, CRS Report 93-617 F. (Archived. For copies, contact Amy Woolf, 202-707-2379.)
START II Debate in the Russian Duma: Issues and Prospects, CRS Report 97-359 F. (Archived. For copies, contact Amy Woolf, 202-707-2379.)
Arms Control after START II: Next Steps on the U.S.-Russian Agenda, CRS Report RL30060

The Strategic Offensive Reductions Treaty

Introduction. The United States and Russia signed the Strategic Offensive Reductions Treaty, known as the Treaty of Moscow, on May 24, 2002. Under this Treaty the United States and Russia plan to reduce their strategic offensive nuclear weapons to between 1,700 and 2,200 warheads by the end of 2012. The Treaty of Moscow does not contain any detailed definitions, does not require the elimination of any delivery vehicles, and does not outline any specific monitoring and verification provisions. The legislatures in both nations approved the Treaty and it entered into force on June 1, 2003.

Negotiating the Treaty. During a summit meeting with President Putin in November 2001, President Bush announced that the United States would reduce its "operationally deployed" strategic nuclear warheads to a level between 1,700 and 2,200 warheads during the next decade. He stated that the United States would reduce its forces unilaterally, without signing a formal agreement. President Putin indicated that Russia wanted to use the formal arms control process, emphasizing that the two sides should focus on "reaching a reliable and verifiable agreement."

The two sides began discussions on the new agreement in January 2002. Russia sought a "legally binding document" that would provide "predictability and transparency" and ensure for the "irreversibilty of the reduction of nuclear forces." The United States, in contrast, did not seek to sign a Treaty that would impose strict limits on deployed weapons. It wanted to maintain the flexibility to size and structure its nuclear forces in response to its own needs. It preferred a less formal process, such as an exchange of letters and, possibly, new transparency measures that would allow each side to understand the force structure plans of the other side.

Within the Bush Administration, Secretary of State Powell supported the conclusion of a "legally binding" agreement because he believed it would help President' Putin's standing with his domestic critics. He apparently prevailed over the objections of officials in the Pentagon. Although the eventual outcome did differ from the initial approach of the Bush Administration, most observers agree that it did not undermine the fundamental U.S. objectives in the negotiations because the Treaty's provisions would not impede the Bush Administration's plans for U.S. strategic nuclear forces.

When the negotiations opened, Russia proposed that the Treaty use counting rules similar to those in the START treaties, where the parties assign a number of warheads to each type of deployed delivery vehicle (ICBMs, SLBMs, and heavy bombers) then "count" the number of deployed delivery vehicles and multiply by the "attributed" number of warheads to calculate the total. To reduce the number of accountable warheads, the parties would either have to remove warheads from delivery vehicles or destroy the delivery vehicles. The United States objected to the use of START counting and elimination rules. It preferred that delivery vehicles that were not deployed with nuclear warheads — either because they were in overhaul or assigned to non-nuclear missions — not count against the limits. Under the U.S. position, the parties would not have to eliminate or destroy delivery vehicles to reduce the number of accountable warheads. The United States would thus have the ability to reverse the reductions if conditions warranted. Russia eventually accepted

the U.S. position, after apparently realizing that such a concession was necessary to complete any agreement imposing any limits on U.S. nuclear weapons.

Russia also initially insisted that the new Treaty require the elimination of warheads removed from service. It argued that the Treaty must provide for "radical, real, and irreversible" cuts in strategic offensive weapons.[3] The United States, on the other hand, pointed out that previous arms control agreements had not required the elimination of warheads removed from deployment. Both sides could keep the warheads for testing, spare parts, and possible redeployment. Russia eventually softened its position on this issue, and after the United States refused to consider any limits on non-deployed warheads, accepted the U.S. position.

The United States recognized that the absence of counting rules and elimination provisions would make it difficult for each side to monitor the number of deployed warheads on the other side. Therefore, it suggested that the agreement include new transparency measures, such as "more detailed exchanges of information, visits to particular sites, additional kinds of inspections, and additional kinds of activities at sites" to enhance confidence and help verify reductions of "operationally deployed systems." Russia agreed that the Treaty would benefit from new transparency measures, but the two sides were unable to agree on specific provisions. They will continue to monitor forces through the verification regime in START I, and may discuss further measures during meetings in the future.

Substance of the Agreement. Article I contains the only limit in the Treaty, stating that the United States and Russia will reduce their "strategic nuclear warheads" to between 1,700 and 2,200 warheads by December 31, 2012. The text does not define "strategic nuclear warheads" and, therefore, does not indicate whether the parties will count only those warheads that are "operationally deployed," all warheads that would count under the START counting rules, or some other quantity of nuclear warheads. The text does refer to statements made by Presidents Bush and Putin in November and December 2001, when each outlined their own reduction plans. This reference may indicate that the United States and Russia could each use their own definition when counting strategic nuclear warheads. The Treaty does not limit delivery vehicles or impose sublimits on specific types of weapons systems. Each party shall determine its own "composition and structure of its strategic offensive arms."

Article II states that the START Treaty remains in force. The Administration has stated that the "purpose of this Article is to make clear that the Moscow Treaty and the START Treaty are separate." The Moscow Treaty will not use the same definitions and counting rules as START and the provisions in START remain in force. Article III establishes a Bilateral Implementation Commission, and states that the parties will meet in this forum at least twice each year. The Treaty does not provide any guidelines or procedures for these meetings. U.S. officials have indicated that the commission will work out additional transparency and verification measures; Russia may prefer a more expansive role.

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[3] Purdhum, Todd S. Russia Calls for Binding Pact to Reduce Nuclear Arsenals. New York Times, January 31, 2002.

Article IV states that the Treaty shall be ratified in accordance with the constitutional procedures of each Party and that it will remain in force until December 31, 2012, after which it could be extended or replaced by another agreement. In theory, the parties might be able to increase their warheads above the 2,200 limit as soon as the Treaty expires. Article IV also states that either party may withdraw from the Treaty on three months' notice. This provision differs from the withdrawal clause in previous treaties, which required six months notice and a statement of "extraordinary events" that led to the nation's withdrawal.

Issues for Congress.

U.S. nuclear forces under the Treaty of Moscow. The Bush Administration has stated that it will eliminate 4 Trident submarines and 50 Peacekeeper missiles when reducing U.S. forces to around 3,800 warheads. It has not yet not identified any additional reductions that it will make to reduce to the 2,200 warhead limit. Furthermore, in the Nuclear Posture Review, released in early 2002, the Administration indicated that it did not plan to eliminate any additional nuclear delivery vehicles, beyond the Tridents and Peacekeepers. Congress has sought information about the future force structure as part of its effort to authorize and appropriate funds for nuclear weapons. Reports indicate that the Quadrennial Defense Review, to be released in early 2006, could answer some of these questions by altering the size and structure of the U.S. ICBM force and B-52 bomber force.

Monitoring and verification. The new Treaty does not contain any monitoring or verification provisions. The Bush Administration has noted that the United States and Russia already collect information about strategic nuclear forces under START I and during implementation of the Nunn-Lugar Cooperative Threat Reduction Program. Some in Congress have questioned, however, whether this information will be sufficient for the duration of the Treaty, since START I expires in 2009, three years before the end of implementation under the new Treaty.

Nonstrategic nuclear weapons. The Strategic Offensive Reductions Treaty does not contain any limits or restrictions on nonstrategic nuclear weapons. Yet, as was noted above, many Members of Congress have argued that these weapons pose a greater threat to the United States and its allies than strategic nuclear weapons. During hearings before the Senate Foreign Relations Committee, Secretary of Defense Rumsfeld and Secretary of State Powell both agreed that the disposition of nonstrategic nuclear weapons should be on the agenda for future meetings between the United States and Russia, although neither supported a formal arms control regime to limit or contain these weapons.

For Further Reading

Nuclear Arms Control: The Strategic Offensive Reductions Treaty, CRS Report RL31448.

Arms Control and Strategic Nuclear Weapons: Unilateral vs. Bilateral Reductions, CRS Report RL31222

Ballistic Missile Defenses and the ABM Treaty

Introduction. The 1972 Anti-Ballistic Missile (ABM) Treaty and 1974 Protocol allowed the United States and Soviet Union to deploy limited defenses against long-range ballistic missiles. During the first half of the 1990s, the United States had emphasized the development of missile defenses against shorter-range, theater ballistic missiles and had sought, in negotiations with Russia, to resolve questions about the compatibility between the ABM Treaty and shorter range missile defenses. During the latter half of the decade, the United States also sought to convince Russia to amend the ABM Treaty so that the United States could deploy a limited defense against long-range ballistic missiles. The Bush Administration labeled the ABM Treaty a "relic of the Cold War," and, after a brief attempt to convince Russia to set the Treaty aside, the United States withdrew from the Treaty.

U.S. Policy on Missile Defenses. The United States completed, then quickly abandoned a treaty-compliant ABM system near Grand Forks, North Dakota in 1974. The Soviet Union deployed, and Russia continues to operate, a treaty-compliant system around Moscow. During the 1980s and early 1990s, the United States conducted research on a variety of ballistic missile defense technologies. In 1983 President Reagan collected and expanded these programs in the Strategic Defense Initiative (SDI), which sought to develop and deploy comprehensive missile defenses that would defend the United States against a deliberate, massive attack from the Soviet Union. The first Bush Administration changed this focus, seeking instead to provide a defense against possible limited missile attacks that might arise from any number of countries throughout the world.

After the Persian Gulf War in 1991, with Iraq's attacks with Scud missiles alerting many to the dangers of missile proliferation and the threats posed by short- and medium-range theater ballistic missiles, the United States began developing several advanced theater missile defense (TMD) systems. At the same time, the Clinton Administration pursued research and technology development for national missile defenses (NMD). The Department of Defense concluded that there was no military requirement for the deployment of such a system after intelligence estimates found that no additional nations (beyond China, Russia, France, and Great Britain) were likely to develop missiles that could threaten the continental United States for at least the next 10-15 years. However, after a congressionally mandated Commission raised concerns about the proliferation of long-range missiles in July 1998 and North Korea tested a three-stage missile in August 1998, the Clinton Administration began to consider the deployment of an NMD, with a program structured to achieve that objective in 2005. On September 1, 2000, after disappointing test results, President Clinton announced that he would not authorize construction needed to begin deployment of an NMD.

President Bush altered U.S. policy on missile defenses. His Administration is seeking to develop layered defense with land-based, sea-based, and space-based components. It is seeking a system that could protect the United States, its allies, and its forces overseas from short, medium, and long-range ballistic missiles. It has not identified a proposed architecture for deployment, but has, instead, stated that it will pursue a robust research and development program to determine which technologies can successfully combine in a system to protect against ballistic missile attack. It has

also started to construct a test bed for land-based missile interceptors in Alaska, with 6 interceptors deployed at Ft. Greely by the end of 2005, and an additional 2 interceptors deployed at Vandenberg Air Force Base in California. The Administration had hoped that these missiles could be operational by 2004, but the missiles still had not achieved operational status by the end of 2005.

Missile Defenses and the ABM Treaty. The 1972 ABM Treaty permitted the United States and Soviet Union to deploy a single ABM site that can contain up to 100 ground-based interceptors. It also obligated each nation not to develop, test, or deploy ABM systems for the "defense of the territory of its country" and not to provide a base for such a defense. It forbade testing and deployment of space-based, sea-based, or air-based ABM systems or components and it imposed a number of qualitative limits on missile defense programs. The Treaty imposed no restrictions on defenses against aircraft, cruise missiles, or theater ballistic missiles.

The missile defense systems advocated by the Reagan and first Bush Administrations would not have been permitted under the ABM Treaty. In 1985, the United States proposed, in negotiations with the Soviet Union, that the two sides replace the ABM Treaty with an agreement that would permit deployment of more extensive defenses. These negotiations failed, and, in 1993, the Clinton Administration altered their focus. It sought a demarcation agreement to clarify the difference between theater missile defenses and strategic missile defenses so the United States could proceed with TMD programs without raising questions about compliance with the Treaty.

The United States and Russia signed two joint statements on ABM/TMD Demarcation in September 1997. Lower-speed TMD systems would be considered consistent with the ABM Treaty if the interceptors were tested at speeds at or below 3 km/sec, and if they are tested against a target with a speed at or below 5 km/sec and a range of no more than 3,500 km. For higher speed systems, they outlined parameters, not formal limits, for treaty-compliant systems. They also agreed to continue discussions and consultations about TMD systems that might be based on other physical principles (such as lasers) but the United States emphasized that these consultations were not the same as veto authority over the other side's TMD plans.

In February 1999, the United States and Russia began to discuss ABM Treaty modifications that would permit deployment of a U.S. NMD system. The United States sought to reassure Russia that the planned NMD would not interfere with Russia's strategic nuclear forces and that the United States still viewed the ABM Treaty as central to the U.S.-Russian strategic balance. The Russians were reportedly unconvinced, noting that the United States could expand its system so that it could intercept a significant portion of Russia's forces. They also argued that the United States had overstated the threat from rogue nations. Furthermore, after Russia approved START II, President Putin noted that U.S. withdrawal from the ABM Treaty would lead not only to Russian withdrawal from START II, but also Russian withdrawal from a wider range of arms control agreements. Through the end of the Clinton Administration, Russia refused to consider U.S. proposals for modifications to the ABM Treaty. Some argued that Russia's position reflected its belief that the United States would not withdraw from the ABM Treaty and, therefore, if Russia refused to amend it, the United States would not deploy national missile defenses.

Officials in the new Bush Administration referred to the Treaty as a relic of the Cold War and the President stated that the United States would need to move beyond the limits in the Treaty to deploy robust missile defenses. In discussions that began in the middle of 2001, the Bush Administration sought to convince Russia to accept a U.S. proposal for the nations to "set aside" the Treaty together. The Administration also offered Russia extensive briefings to demonstrate that its missile defense program would not threaten Russia but that the ABM Treaty would interfere with the program. Russia would not agree to set the Treaty aside, and, instead, suggested that the United States identify modifications to the Treaty that would allow it to pursue the more robust testing program contained in its proposals. But, according to some reports, Russia would have insisted on the right to determine whether proposed tests were consistent with the Treaty. The Bush Administration would not accept these conditions and President Bush announced, on December 13, 2001, that the United States would withdraw from the ABM Treaty. This withdrawal took effect on June 13, 2002. Russia's President Putin stated that this action was "mistaken" but Russia did not respond by withdrawing other of arms control agreements, although it had indicated it was considering this response.

Issues for Congress.

Implications of ABM Treaty withdrawal. Many critics of the Administration's policy on the ABM Treaty and missile defenses have argued that U.S. withdrawal from the ABM Treaty would undermine international stability and spur arms races around the world. Many view Russia's recent announcements about new type of ballistic missile as a response to U.S. withdrawal from the ABM Treaty. Some also argue that China might feel compelled to expand its offensive missile forces to ensure its ability to penetrate U.S. defenses. Others, however, argue that other nations pursue defense programs that serve their own needs, regardless of U.S. withdrawal from the ABM Treaty, and that, ultimately, by allowing for the protection of U.S. forces and allies, missile defenses will eventually enhance international stability.

Missile Defense and Terrorism. Supporters of the President's plans for missile defense argue that the terrorist attacks of September 11 highlight U.S. vulnerabilities and strengthen the case for the prompt deployment of robust missile defenses. Critics, however, argue that the attacks demonstrate that terrorist and rogue nations are highly unlikely to attack the United States with ballistic missiles when less costly options are available. Furthermore, increasing expenditures on missile defense could drain funding from programs needed for the war on terrorism and homeland defense.

For Further Reading

Missile Defense: The Current Debate, CRS Report RL31111.
Nuclear Arms Control: The U.S. Russian Agenda, CRS Issue Brief IB98030.

Threat Reduction and Nonproliferation Assistance

Nunn-Lugar Cooperative Threat Reduction Programs

Introduction. As the Soviet Union collapsed in late 1991, many Members of Congress grew concerned that deteriorating social and economic conditions in Russia would affect control over Soviet weapons of mass destruction. In December 1991, Congress authorized the transfer of $400 million from the FY1992 Department of Defense (DOD) budget to help the republics that inherited the Soviet nuclear and chemical weapons stockpile — Russia, Kazakhstan, Ukraine, and Belarus — transport and dismantle these weapons. Nearly $4.5 billion has been appropriated for these programs through FY2005. The Bush Administration requested, and Congress approved, $409.2 million for FY2005. The total amount that has been obligated and expended on CTR projects can be found in the Table at the end of CRS Report 97-1027 F, *Nunn-Lugar Cooperative Threat Reduction Programs: Issues for Congress*.

CTR Implementation. Initial implementation of the Cooperative Threat Reduction (CTR) Program was slowed by administrative requirements on the U.S. side; the complex nature of activities being undertaken; the need for major changes in the attitudes of recipients toward the United States and the idea of weapons dismantlement and destruction; and political and economic upheavals within and among the states of the former Soviet Union. Before funds could be obligated for specific projects, the United States had to sign general "umbrella" agreements with each recipient nation. These agreements set out the privileges and immunities of U.S. personnel and the legal and customs framework for the provision of the aid. In FY1997, the Clinton Administration revoked its certification of Belarus for participation in the Nunn-Lugar program because of human rights violations. The Bush Administration withheld Russia's certification in 2002 because of questions about its compliance with arms control agreements. However, the assistance continued because Congress provided the President with the authority to waive the certification requirements.

In the early 1990s, Ukraine's receipt of Nunn-Lugar funds was delayed by uncertainty over the ultimate disposition of Soviet nuclear weapons based in Ukraine. Before the United States and Ukraine signed an umbrella agreement in October 1993, President Kravchuk promised to give up Ukraine's nuclear weapons and to press for the ratification of START I and the NPT in the Rada, Ukraine's parliament. When the Rada approved START I without conditions in February 1994 and Ukraine acceded to the Nuclear Nonproliferation Treaty in November 1994, the final legal impediments to Nunn-Lugar aid for Ukraine disappeared.

Focus of the CTR Projects. The United States and recipient nations have concluded implementing agreements that outline the specific projects that will receive CTR funding. The U.S. Department of Defense divides these projects into three distinct areas:

Destruction and Dismantlement. These projects are designed to help with the elimination of nuclear, chemical, and other weapons and their delivery vehicles. These projects have helped Russia, Ukraine, Belarus, and Kazakhstan remove

warheads, deactivate missiles, and eliminate launch facilities for nuclear weapons covered by the START I Treaty.

Chain of Custody. These projects are designed to enhance the safety, security and control over nuclear weapons and fissile materials. These projects provided Russia with bullet-proof Kevlar blankets, secure canisters, and improved rail cars for warheads transported from Ukraine, Belarus, and Kazakhstan to storage and dismantlement facilities in Russia. The CTR program is also funding several projects at storage facilities for nuclear weapons and materials, to improve security and accounting systems and to provide storage space for plutonium removed from nuclear warheads when they are dismantled.

Demilitarization. These projects encouraging Russia, Kazakhstan, and Ukraine to convert military efforts to peaceful purposes. In recent years, Congress has questioned the usefulness of these programs and has limited their funding.

Issues for Congress.

Chemical Weapons Destruction Facility. The United States and Russia have agreed to use CTR funds to design and construct a chemical weapons destruction facility at Shchuch'ye. This facility is intended to help Russia comply with its obligations under the Chemical Weapons convention and to prevent the loss or theft of Soviet era chemical weapons by ensuring their safe and secure destruction. The two nations planned to share the costs of this facility, with the United States spending about $750 million to build and begin operations at the facility and Russia spending about $240 million on related infrastructure improvements. But Russia has been slow to meet its obligations in this project and some Members of Congress are concerned that the United States will eventually have to spend more. Congress prohibited the allocation of any new CTR funds for this project in FY2000 and FY2001. However, after completing its review of CTR projects in 2001, the Bush Administration identified this as a high priority project that could be accelerated. Consequently, the Administration has requested an increasing amount of money for this project. Congress approved the Bush Administration's request for $50 million for this project in FY2002, $133 million in FY2003, $200 million in FY2004, and $158.4 million in FY2005.

Value and Effectiveness of CTR Projects. Some Members of Congress have questioned whether CTR projects have enhanced U.S. national security. They note that few funds were actually spent to dismantle weapons of mass destruction and their delivery vehicles until the later 1990s. In addition, Russia and the other recipients were obligated by the START I Treaty to eliminate many of the strategic offensive delivery vehicles that have been dismantled with CTR assistance. Hence, some Members believe that, at best, the United States is funding projects that would have occurred anyway, and, at worst, subsidizing Russian defense programs by allowing Russia to use its own funds for weapons modernization programs while the United States pays to dismantle the older weapons.

The Bush Administration initiated a comprehensive review of U.S. nonproliferation projects with Russia to determine whether they were well-managed and cost-effective. When announcing the results of this review in late December

2001, the President stated that most of the programs and projects appeared to be worthwhile and that the Administration would increase funding for many of them in coming years. He did not mention any concerns about the diversion of U.S. funds to the Russian defense establishment.

Scope and Priorities for CTR Projects. The initial Nunn-Lugar legislation was tightly focused on the transport, storage, and destruction of weapons of mass destruction. Most in Congress continue to support these core activities. But the focus of CTR funding has changed, as the program evolves. Much of the work on strategic offensive arms reductions has been completed, and a growing proportion of the funding is focused on securing and eliminating chemical and biological weapons. In addition, the Bush Administration has indicated that it views the CTR program, and other U.S. nonproliferation assistance to the former Soviet states, as a part of its efforts to keep weapons of mass destruction away from terrorists. This objective has also altered some of the funding priorities, with a growing number of projects focused on border and export control.

Certification. The CTR legislation requires the President to certify that the recipient nations are committed to a number of specific policy areas before they can receive CTR funds. As was noted above, Belarus lost its certification in 1997. In mid-2002, the Bush Administration indicated that it could not certify that Russia was committed to complying with arms control agreements because it continued to fall short of U.S. expectations in providing information about its chemical and biological weapons programs. However, the President asked Congress to waive the certification requirements so that Russia could continue to receive assistance. The Senate supported an unlimited waiver authority for the President; the House sought to limit the authority to one year. The Conference Committee accepted a waiver authority for three years. In the FY2006 Defense Authorization Bill, the Senate again approved an unlimited waiver authority and the House accepted this proposal.

Expanding Threat Reduction Assistance. The Senate and the Bush Administration have both supported proposals to spend CTR funds in nations outside the former Soviet Union. The House resisted these proposals, but eventually agreed in the FY2004 Defense Authorization Act. Some of these funds have been used to assist with scientist redirection programs in Libya and Iraq. Some analysts have suggested that promises of assistance might also help convince other nations, such as North Korea, to eliminate their nuclear weapons programs.

For Further Reading

Nonproliferation and Threat Reduction Assistance: U.S. Programs in the Former Soviet Union, CRS Report RL31957.

Nunn-Lugar Cooperative Threat Reduction Programs: Issues for Congress, CRS Report 97-1027 F.

G-8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction

Introduction. At their June 2002 summit at Kananaskis, the Group of Eight (US, Canada, UK, France, Germany, Italy, Japan (G-7) plus Russia (G-8)) formed the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction. Under this partnership, the United States, other members of the G-7 and the European Commission have agreed to raise up to $20 billion over the next ten years for projects in Russia related to disarmament, nonproliferation, counterterrorism and nuclear safety. The G-8, at the summit, also adopted nonproliferation principles aimed at preventing terrorists or those who harbor terrorists from acquiring or developing nuclear, chemical, biological or radiological weapons, missiles, and related materials, equipment and technology.

Background. Since the creation of the Nunn-Lugar program in 1992, the United States has pressed its allies to provide similar support. John Bolton, Under Secretary of State for Arms Control and International Security, stated in a Congressional hearing that the United States has provided $7 billion for "security assistance" to Russia and the FSU in the last decade, while the G-7 have spent less than $1 billion.[4] Like the United States, G-7 allies faced difficulties in implementing similar programs. Differences on key issues like liability, tax exemption, and access to sites proved to be significant stumbling blocks. The partnership has agreed on a common set of guidelines on these three key areas to help facilitate future nonproliferation projects.

The Bush Administration's early support for CTR programs, according to many observers, was lukewarm. While some funding levels were maintained, others were cut. The tragedies of September 11, 2001, however, heightened awareness of the special vulnerability that Russia and the former Soviet republics presented in terms of terrorist access to WMD materials or capabilities. In early 2002, the United States proposed to the G-8 an expansion of its Cooperative Threat Reduction programs called "10 plus 10 over 10" — that is, G-7 allies would add $10 billion more over 10 years to the $10 billion the United States was already planning to spend on CTR-related programs. By expanding the programs to include more donors, the participants would not only be able to increase their level of effort in Russia, but might also be able to address potential proliferation problems in other nations.

Scope of Program. The Partnership is intended to span the range of U.S. nonproliferation programs in the former Soviet Union. Russia has identified chemical weapons destruction, and dismantlement of decommissioned nuclear submarines as its top priority projects; the G-7 have additionally identified disposition of fissile materials and employing former weapon scientists as high priority projects. However, rather than adopting a common approach, a common fund, or a multilateral implementation mechanism, projects will be funded bilaterally under government-to-government agreements with Russia. G-8 senior officials will provide an informal coordinating mechanism.

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[4] Testimony of John R. Bolton before the Senate Foreign Relations Committee, October 9, 2002.

Nonproliferation Principles. At the summit, G-8 countries also adopted principles to deny terrorists access to WMD and WMD materials. These are:

- Strengthen multilateral treaties and other instruments to prevent WMD proliferation and strengthen the institutions established to implement such agreements;
- Develop and maintain measures that ensure that the production, use, storage and transport of WMD materials is safe and secure and provide such assistance to countries lacking the ability to secure such materials;
- Ensure that WMD storage facilities are physically secure and provide assistance to states where facilities lack protection;
- Implement border controls, law enforcement efforts and international cooperation to detect and interdict attempts to smuggle WMD materials and items and provide assistance to countries that lack appropriate resources;
- Maintain export controls over items that could be used to develop weapons of mass destruction and missiles; and
- Work to manage and dispose of fissile materials stocks that are no longer required for defense purposes, destroy all chemical weapons and "minimize" stockpiles of dangerous biological agents."

Membership and Status. The U.S. and G-7 allies have invited other states to participate and contribute to the initiative, as well as adopt the nonproliferation principles. In 2003, the EU, Norway, Sweden, Switzerland, Finland, and the Netherlands joined as donor states. In 2004, at the summit in Sea Island, Georgia, seven additional nations joined. Other countries have also participated in informal meetings (at the Senior Officials Group level).

Observers have pointed out that many countries have pledged their support, but that pledges are still about $2 billion short of the $20 billion total, and that the pledges represent commitments, not actual allocations by national parliaments. As in the past, implementation has been slowed by difficulties resolving liability, tax exemption, and site access issues.

Issues for Congress.

U.S. participation. Across the board, the United States has led its allies in pushing for effective controls on WMD and WMD materials, so U.S. participation is unlikely to be a stumbling block in this program. U.S. leadership may be judged, however, on continued funding levels for existing programs, effective export controls, and efforts to support and strengthen multilateral treaties, all of which Congress is involved in.

Allied participation. As was noted above, the other participants in the global partnership have not yet reached their pledges to raise $10 million dollars, and it remains uncertain whether they will eventually fulfill these pledges. Budget

constraints, along with the difficulties associated with project implementation in Russia, may discourage long-term participation. Congress, in its oversight role, may choose to pay close attention to the progress these other nations are making in identifying and implementing projects and in sustaining their pledged levels of cooperation.

Potential recipients. The United States has suggested that the funding provided by the G-8 global partnership address proliferation problems in nations outside the former Soviet Union. For example, it proposed that the funds contribute to programs in both Libya and Iraq that are designed to redirect weapons scientists away from work on weapons of mass destruction. The G-8 participants have agreed to consider this proposal, but have not yet adopted such an expansion. Congress has supported legislation allowing the United States to expand its CTR program to nations outside the former Soviet Union; it may also consider whether G-8 funding could address these objectives.

For Further Reading

Nonproliferation and Threat Reduction Assistance: U.S. Programs in the Former Soviet Union, CRS Report RL31957.

Nuclear Weapons in Russia: Safety, Security, and Control Issues. CRS Issue Brief IB98038. (Archived. For copies, contact Amy Woolf, 202-707-2379.)

Globalizing Cooperative Threat Reduction: A Survey of Options, CRS Report RL32359.

U.S.-Russian Nonproliferation Cooperation

Introduction. Stockpiles of nuclear weapons materials (highly enriched uranium and plutonium) could pose a potential proliferation risk if they are not closely guarded. Most experts agree that the risks are especially high in Russia and the former Soviet Union (FSU). Dismantlement of nuclear weapons by the United States and Russia under arms control agreements is adding to existing military and civil stockpiles of these materials. Concern over the security of these stockpiles persists in light of continued poverty and economic stagnation in the former nuclear weapons sector and in the military in Russia. Storage and disposal of excess fissile materials also raise environmental, health, and safety issues. The United States and Russia are cooperating, through several programs, to secure and eliminate many of these materials.

Problems in Russia and the Former Soviet Union. The collapse of the Soviet Union left a large but unknown quantity of fissile materials and nuclear weapons-related equipment scattered in many of the former Soviet republics. Most of the materials are located in Russia, although significant quantities also exist in Ukraine, Kazakhstan, and elsewhere. The United States is attempting to improve the safety and security of these materials through the Nunn-Lugar FSU Threat Reduction program, which is discussed earlier in this report, and the Department of Energy's Materials Protection, Control and Accounting program. The United States and Russian officials are seeking ways to store and dispose of highly enriched uranium (HEU) and plutonium from dismantled warheads and how to verify the size and security of fissile material stockpiles.

Highly Enriched Uranium. Highly enriched uranium from dismantled weapons is relatively easy to dispose of, since it can be diluted to low-enriched uranium which is directly usable in current operating power reactors. In February 1993 the United States and Russia agreed that highly enriched uranium from weapons would be diluted to a low enrichment level suitable for use in commercial nuclear power reactors. The United States has agreed to purchase 500 metric tons of HEU from Russia's dismantled nuclear warheads, and deliveries have started to the U.S. Enrichment Corporation, which supplies uranium fuel for domestic and foreign reactors. By September 2005 about 250 metric tons of HEU had been recycled, at a purchase price of about $4 billion, according to USEC. The 500-ton total is expected to be completed by 2013.

Plutonium Disposition. Plutonium from dismantled weapons presents a far more difficult disposal problem. At one time early in deployment of nuclear power it was expected that plutonium would become the primary fuel for power production, but both economics and proliferation concerns have delayed its introduction into the fuel cycle. Some countries, including Russia, continue to view plutonium as potentially an economically viable nuclear fuel, and Russia supports a plan to mix plutonium with uranium to form "mixed-oxide" fuel (MOX) to use in present generation nuclear power plants. The Clinton Administration proposed, as a means of disposing of U.S. surplus weapons plutonium, a "dual track" strategy of mixing plutonium with uranium as mixed oxide (MOX) fuel for commercial power reactors, and vitrification (dissolving in glass) and disposal of the plutonium unsuited for fuel and the resulting fission products. An agreement with Russia signed in September

2000 set up a similar program for Russian plutonium disposal. However, cooperation under this agreement stalled at the end of 2003 and throughout 2004, in a dispute over the liability provisions in the implementing agreement.

Further, in submitting its FY2003 budget request, DOE declared that it was eliminating the immobilization part of the two-track program for U.S. plutonium and instead would add an "enhanced purification" stage to the MOX fuel fabrication facility so that most of the plutonium originally destined for immobilization would instead be consumed as MOX fuel. The original plan called for 27.6 metric tons (MT) of plutonium to be converted to MOX and 8.4 MT of impure plutonium to be immobilized. The revision would purify 6.4 MT and convert it to MOX, and send the remaining 2.0 MT of highly impure plutonium directly to a waste disposal site.

The plan to use weapons plutonium as fuel for nuclear power reactors raised opposition from some nonproliferation interest groups, who argued that immobilization and disposal is safer and less expensive than the MOX fuel option. The Russian MOX option is particularly troubled, because Russia does not have enough power reactors in which MOX can be used to dispose of significant amounts of plutonium, and has been asking for help to build new ones or to use the MOX in reactors in Germany or other countries, as well as aid in constructing a MOX fuel conversion facility. Further, Russia has declared that its ultimate goal is to recycle plutonium from commercial power reactors, raising concerns that aiding the disposal of weapons plutonium would encourage Russia to develop a "plutonium economy" in its power industry.

DOE's Materials Protection, Control, and Accounting Program. Many in the United States have expressed concerns about the safety and security of nuclear materials located at civilian research facilities in the former Soviet Union. The United States is providing assistance in improving security and accounting for these materials through programs funded by the Department of Energy (DOE). These efforts began as a part of the Nunn-Lugar budget, but were moved to DOE in 1996. The largest of these efforts is the Materials Protection, Control, and Accounting (MPC&A) program. A study completed for the Department of Energy in January 2001 called the potential proliferation risk posed by these materials "the greatest unmet national security need" facing the United States. It recommended that the United States expand its efforts to contain and control these materials, spending $30 billion over the next 10 years. Congress funded the program at $427 million for FY2006.

According to the Department of Energy, the MPC&A program has provided assistance at more than 50 facilities in the former Soviet Union. At many of these facilities, the program focused on providing upgrades to security to reduce the risk of a loss of materials. These upgrades include the installation of improved security systems that use modern technology and strict material control and accounting systems. The program has also provided security training for Russian nuclear specialists.

Issues for Congress.

Plutonium Disposition. In the past, the United States policy has been not to interfere with plutonium policies in nations with advanced nuclear reactor programs, such as France, Britain, and Japan, but to selectively oppose plutonium use elsewhere, such as North Korea, South Korea, Taiwan, Iran, Pakistan, and India. However, some Members, executive branch officials, and non-governmental organizations oppose any plutonium reprocessing because of the proliferation and environmental risks associated with widespread use of plutonium. Yet, this may be a key tool in efforts to dispose of Russia's excess plutonium. Congress may also seek to review this program in an effort to understand and resolve the dispute over liability protection.

Focus of MPC&A efforts. In its early years, the MPC&A program focused on improving security and accounting at Russian facilities that housed nuclear materials that could be used in weapons programs. In recent years, the Bush Administration has expanded the focus of the program to include efforts to secure radiological materials that would not be suitable for nuclear weapons but could be used in radiological dispersal devices, and to improve border security and monitoring to discourage and detect illicit efforts to transfer these materials. Some have questioned whether the expanded focus might dilute funding for central security and accounting programs. Others, however, note that the Bush Administration and Congress have supported increased funding for these efforts as the focus has expanded.

Access to Russian facilities. A GAO study released in early 2003 noted that Russia continues to deny the United States access to many facilities that are apart of the weapons complex maintained by Russia's Ministry of Atomic Affairs (MINATOM). As a result, the United States cannot even begin to address security and accounting concerns for a majority of the nuclear materials at risk in Russia. In addition, because access problems have slowed program implementation, DOE maintains significant balances of unallocated funds from prior years. Congress has expressed concerns about these funds, particularly as it adds more money to DOE's budget for nonproliferation programs.

For Further Reading

Nuclear Weapons: Disposal of Surplus Weapons-Usable Plutonium, CRS Report RL30170.

Nonproliferation and Threat Reduction Assistance: U.S. Programs in the Former Soviet Union, CRS Report RL31957.

Nuclear Nonproliferation Issues. CRS Issue Brief IB10091.

Conventional Weapons and Confidence-Building Measures

Conventional Armed Forces in Europe Treaty (CFE)

Introduction. In late 1990, 22 members of NATO and the Warsaw Pact signed the Conventional Armed Forces in Europe (CFE) Treaty, agreeing to limit NATO and Warsaw Pact non-nuclear forces in an area from the Atlantic Ocean to the Ural Mountains. The parties to the Treaty have since conducted negotiations to "adapt" the treaty to reflect the current military-political situation in Europe. These talks have produced the Tashkent Agreement, allocating responsibility for the former USSR's military equipment among its successor states; the "Flank Agreement" permitting greater Russian equipment deployments primarily in the Caucasus in acknowledgment of the region's instability, and the 1999 Adaptation Agreement.

Key Limits and Restrictions. CFE placed alliance-wide, regional (zonal), and national ceilings on specific major items of military equipment.[5] It sought to promote stability not only by reducing armaments, but also by reducing the possibility of surprise attack by preventing large concentrations of forces. The CFE treaty also provides for 1) very detailed data exchanges on equipment, force structure, and training maneuvers; 2) specific procedures for the destruction or redistribution of excess equipment, and 3) verification of compliance through on-site inspections. Its implementation has resulted in an unprecedented reduction of conventional arms in Europe, with over 50,000 treaty-limited items of equipment (TLEs) removed or destroyed; almost all agree it has achieved most of its initial objectives.

The CFE treaty did not anticipate the dissolution of the Soviet Union and the Warsaw Pact, let alone the expansion of NATO into East European countries. The participants have sought to adapt the treaty to this new security environment. The so-called "Tashkent Agreement," signed in May 1992, allocated responsibility for the Soviet Union's TLEs among Azerbaijan, Armenia, Belarus, Kazakhstan, Moldova, Russia, Ukraine, and Georgia. It also established equipment ceilings for each nation and the implied responsibility for the destruction/transfer of equipment necessary to meet these national ceilings.

Under the CFE treaty all equipment reductions needed to comply with overall, national, and zonal ceilings were to have been completed by November 1995. As this deadline approached, it was evident that Russia would not meet those requirements, particularly in the so-called "flank zones." The "flank zones" include the Leningrad Military District in the north, and more importantly, the North Caucasus Military District in the south. The outbreak of armed ethnic conflicts in and around the Caucasus, most notably in Chechnya, led Russia to claim it needed

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[5] The Treaty limits battle tanks, artillery, armored combat vehicles, attack helicopters, and combat aircraft. Other types of equipment are subject to operating restrictions and reporting requirements: primary trainer aircraft, unarmed trainer aircraft, combat support helicopters, unarmed transport helicopters, armored vehicle-launched bridges, armored personnel carrier "look-alikes" and armored combat vehicle "look-alikes".

to deploy equipment in excess of treaty limits in that zone. Russia placed this claim in the context of broader assertions that some CFE provisions reflected Cold War assumptions and did not fairly address its new national security concerns. It questioned the appropriateness of limits on where it could station military forces within its own borders. Russia also maintained that its military activities in the Caucasus responded to a legitimate national security concern. And it argued that economic hardship was making the movement of forces unaffordable in some cases.

To address these concerns, the CFE parties negotiated a Flank Agreement, in early 1996. This Agreement removed several Russian (and one Ukrainian) administrative districts from the old "flank zone," thus permitting existing flank equipment ceilings to apply to a smaller area. To provide some counterbalance to these adjustments, reporting requirements were enhanced, inspection rights in the zone increased, and district ceilings were placed on armored combat vehicles to prevent their concentration. In its most recent compliance report, however, the State Department asserted that Russian equipment holdings "continue to exceed most of the legally binding limits for both the original and revised flank zones."[6]

Negotiations and Issues for Congress. The State Department's most recent annual report on CFE compliance cites Armenia, Azerbaijan, Belarus, Russia, and Ukraine for non-compliance.[7] Armenia and Azerbaijan, still engaged in a conflict over the Nagorno-Karabakh territory, have not completed equipment reductions; provided complete equipment declarations; and provided timely notification of new equipment acquisition. Belarus is again cited for questionable equipment declarations and its refusal to allow inspectors access to an equipment storage site. In addition to exceeding it equipment limits in the flank zones, the compliance report cites Russia for relatively minor reporting violations and for its failure to complete withdrawals of its troops from Gruzia (Georgia) and Moldova. Though partially accomplished, further progress on withdrawals is dependent upon on-going negotiations with Gruzia and the relocation or destruction of massive amounts of Russian ammunition and small arms from Moldova. The State Department deems Ukraine to have substantially complied with CFE requirements, but notes that it retains several hundred equipment items in excess of treaty limits.

The 1996 CFE Review Conference opened negotiations to modify the treaty to account for the absence of the USSR and the Warsaw Pact, and the expansion of NATO into the Czech Republic, Poland, and Hungary. The main elements of the resulting Adaptation Agreement are:

- Lower equipment levels throughout the "Atlantic to the Urals" area;
- Enhanced verification procedures;
- Replacement of NATO-Warsaw Pact "bloc to bloc" ceilings with national limits on all categories of TLE's;

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[6] *Adherence to and Compliance with Arms Control and Nonproliferation Agreements and Commitments.* Department of State, 2005 p.47

[7] *Ibid.* pp. 16-28

- Replacement of the "nested zones" with limits on the number of tanks, armored combat vehicles, and artillery that any nation could have permanently stationed on its territory;
- No increase in current TLE ceilings in Poland, Hungary, the Czech Republic, Belarus, Ukraine, and Kaliningrad;
- The Flank Agreement remains in effect.

Most CFE signatories did not want to completely renegotiate the treaty, stating concern over losing CFE accomplishments in reducing intra-European tensions. Russia, however, sought broader revisions. Ironically, Russia particularly sought to maintain what many considered the most outdated element of the CFE structure: alliance-wide equipment ceilings. An alliance-wide cap on NATO would presumably force adjustments of national holdings as the alliance grew; such adjustments probably would *not* favor new member nations close to Russia's borders. Russia also sought new types of limits in the central region, including (1) prohibitions on stationing U.S. or West European NATO troops in East European countries; (2) bans on construction of new military infrastructure (e.g., airfields); and (3) restrictions on deployment of nuclear weapons or nuclear-capable aircraft.

The CFE parties did not adopt Russia's position and Russia ultimately agreed to a largely NATO-drafted document. This May 1997 document reiterates that NATO has "no plan, no intention, and no reason" to deploy nuclear weapons on new members' territory; and seeks to improve new members' defensive capabilities through interoperability and capability for reinforcement, rather than by stationing additional combat forces on new members' territory. Russia's most serious focus has been, however, on NATO enlargement and how CFE could adapt to mitigate what many Russians see as an encroaching threat. Russia has called for the aspiring members of NATO, particularly the Baltic states of Latvia, Lithuania, and Estonia, to become CFE state parties. These countries have indicated a willingness to join, however they currently cannot do so until the Adaptation Agreement is ratified and the new CFE regime comes into force. Russian concerns about NATO expansion may be heightened by a new U.S. initiative to move U.S. troops out of installations in Germany and establish new facilities in several east European countries (e.g., Poland, Bulgaria, and Romania). All CFE signatories, except Belarus, have predicated their ratification of the new Adaptation Agreement upon Russia completing its withdrawal from Gruzia and Moldova. Given this situation, it appears unlikely that President Bush will submit the Adaptation Agreement to the Senate in the foreseeable future.

For Further Reading

Treaty on Conventional Armed Forces in Europe
[http://www.state.gov/t/ac/trt/4781.htm]
Adherence to and Compliance with Arms Control and Nonproliferation Agreements and Commitments. Department of State, 2005.
Treaty of Conventional Armed Forces in Europe (CFE): A Primer, CRS Report 90-615 RCO. (Archived. For copies, contact Amy Woolf, 202-707-2379.)

Open Skies

Introduction. On March 24, 1992, the United States, Canada and 22 European nations signed the Treaty on Open Skies. The parties agreed to permit unarmed aircraft to conduct observation flights over their territories. Although the flights will likely focus on military activities, the information they gather was not intended to be used to verify compliance with limits in other arms control agreements. Instead, Open Skies is designed as a confidence-building measure that will promote openness and enhance mutual understanding about military activities. Russia and Belarus approved ratification of the Treaty in May 2001 and deposited their instruments of ratification on November 2, 2001. The Treaty entered into force on January 1, 2002.

Negotiating the Treaty. Open Skies was originally proposed by President Eisenhower in 1955. In the years before satellites began to collect intelligence data, aerial overflights were seen as a way to gain information needed for both intelligence and confidence-building purposes. The Soviet Union rejected President Eisenhower's proposal because it considered the overflights equal to espionage.

President Bush revived the Open Skies proposal in May 1989. By this time, both the United States and Soviet Union employed satellites and remote sensors for intelligence collection, so aircraft overflights would add little for that objective. But, at the time when Europe was emerging from the East-West divide of the Cold War, the United States supported increased transparency throughout Europe as a way to reduce the chances of military confrontation and to build confidence among the participants. The negotiations began in Ottawa in February 1990 and continued in Budapest, Hungary in April and May 1990. In their opening positions, the nations differed about the number of overflights, the territory to be covered, and the types of sensors that could be used. The Soviet Union, in particular, resisted proposals to open all territory to the overflights. It wanted to exclude areas that it had closed for national security reasons.

The Soviet Union's position led to a stalemate in the negotiations through the middle of 1991. Some of the issues related to sensors were resolved after Canada conducted a test flight over Hungary in December 1990. (Hungary reciprocated with a test flight over Canada in January 1992.) Then, after the abortive coup in Moscow in August 1991, the Soviet Union altered its position. In November 1991, it agreed to open all of its territory to overflights. Russia maintained this position after the demise of the Soviet Union and the Treaty was completed in March 1992.

The United States, Canada, and 22 European nations signed the Treaty on March 24, 1992. Additional nations can accede to the Treaty if the other participants agree. President Bush submitted the Treaty on Open Skies to the Senate for its advice and consent to ratification in August 1992. The Senate Foreign Relations Committee held hearings in September 1992 and March 1993. The full Senate consented to the ratification of the treaty on August 6, 1993 and President Clinton signed the instruments of ratification on November 3, 1993. Russia and Belarus approved ratification of the Treaty in May 2001.

The United States and the other participants, including Russia and Belarus, flew training missions and practice flights in the years before the Treaty entered into force. For example, the German Open Skies aircraft conducted observation flights over U.S. territory in June 1995 and the Russian Open Skies aircraft did the same in September 1997. Russia hosted an Open Skies training flight over its territory in August 1998. In June 1998, the United States conducted training flights over Ukraine, in part to demonstrate that the Treaty's procedures would not be too costly or intrusive.

Formal observation flights began in August 2002 after the Treaty entered into force. The parties have conducted nearly 70 flights in the first year and had planned 82 flights for 2004. Russia and Belarus, operating together, have conducted observation flights over the United States in June 2004, September 2004, and July 2005. The United States has conducted 19 missions over the combined territory of Russia and Belarus.

The Provisions of Open Skies. The parties to the Open Skies Treaty have agreed to make all of their territory accessible to overflights by unarmed fixed wing observation aircraft. They can restrict flights over areas, such as nuclear power plants, where safety is a concern, but they cannot impede or prohibit flights over any area, including military installations that are considered secret or otherwise off-limits. In most cases, the nation conducting the observation flight will provide the aircraft and sensors for the flight. However, Russia insisted that the Treaty permit the observed country to provide the aircraft if it chose to do so. Nations can also team up to conduct overflights to share the costs of the effort or use aircraft and sensor suites provided by other nations. Each nation is assigned a quota of overflights that it can conduct and must be willing to receive each year. The quota is determined, generally, by the size of the nation's territory. For the United States, this quota is equal to 42 observation flights per year. However, in the first year of operation, only 4 flights will occur over the United States because most parties to the Treaty were not interested in observing U.S. territory.

The nations considered and rejected a proposal to maintain a common fleet of aircraft that all nations would use to conduct overflights. This option was considered in response to concerns about the use of hidden sensors on national aircraft. Instead, the nations agreed that all aircraft and sensors will be thoroughly inspected before an overflight begins to ensure that they comply with the terms of the Treaty. The Treaty permits the nations to use several types of sensors — including photographic cameras, infrared cameras, and synthetic aperture radars — during their observation flights. The permitted equipment will allow the nations to collect basic information on military forces and activities, but it will provide them with little detailed technical intelligence. For example, the resolution on the sensors probably will allow the nations to identify vehicles and distinguish between tanks and trucks, but it probably will not allow them to tell one type of tank from another. Each observation flight will produce two sets of data — one for the observing nation and one for the observed nation. Other parties to the Treaty can purchase copies of the data. Each nation is responsible for its own analysis of the data.

The Open Skies Treaty was designed as a confidence-building measure, allowing all nations, including those without access to satellites, to collect information on military forces and activities of other parties to the Treaty. It is not designed to provide detailed intelligence information or data needed to verify compliance with arms control limits. Instead, it will allow the participants to gain an improved understanding of military activities in other nations. Overflights may provide early signs of efforts to build up military forces or, conversely, assurances that an adversary or neighbor is not preparing its military for a possible conflict. In any case, it is designed to promote openness and transparency as a way to ease tensions and reduce the likelihood of misunderstandings about military intentions.

Issues for Congress.

Cost. Although the Open Skies Treaty does not require nations to conduct all the permitted overflights, the United States is likely to conduct as many flights as are possible under the quotas for Russia and the other former Soviet republics. (In the first year of Treaty implementation this will amount to 9 flights — 8 over Russia and one with Canada over Ukraine.) According to the Air Force, the United States is equipping 3 aircraft with Open Skies sensors; two will carry the full suite of sensors and one, which is already operational, will carry only the still and video cameras. The Air Force plans to spend more than $70 million to equip the three aircraft and each observation flight could cost more than $150,000. As a result, the Senate Foreign Relations Committee recommended in its report on the Treaty that the United States restrict the number of aircraft equipped to carry Open Skies sensors and the number of observation flights it conducts each year. The Defense Department has taken note of these recommendations in its planning for Open Skies implementation. The Senate also approved a condition to the resolution of ratification stating that the U.S. will approve changes to the permitted sensors recommended by the Open Skies Consultative Commission (OSCC) only after the President has provided the Senate at least 30 days notice of the proposed changes and a cost-benefit analysis of the change. This condition is designed to ensure that the OSCC does not adopt new technologies that will significantly add to the U.S. cost of implementation without providing for new monitoring benefits.

Relationship to Other Arms Control Efforts. Although the Open Skies Treaty was not designed to support other arms control agreements, the information gathered during Open Skies overflights could help nations verify compliance with other agreements. If the information from these overflights only substitutes for other types of information, such as data collected during short-notice on-site inspections, then some of the efforts may be seen as redundant. However, in some cases, the information may, when combined with data collected by satellite observations, help identify sites that may house suspicious activities. In this case, the overflights might help identify locations for the random on-site inspections permitted by other treaties.

For Further Reading

The Open Skies Treaty: Observation Overflights of Military Activities. CRS Report 95-1098 F. (Archived. For copies, contact Amy Woolf, 202-707-2379.)

Controlling the Use of Anti-Personnel Landmines

Introduction . Anti-personnel landmines are small, inexpensive weapons that kill or maim people upon contact. Indiscriminate use has produced many civilian casualties and awareness of the problem has resulted in efforts to control or ban landmines. The United States is a party to the Convention on Conventional Weapons, which seeks to regulate the use and removal of land mines. The United States has also supported more far-reaching efforts to restrain the use of anti-personnel landmines and to support worldwide demining efforts, but it has not signed the 1997 international convention (Ottawa) banning anti-personnel landmines.[8]

Background. Persistent anti-personnel landmines (APL) can impede enemy efforts to clear large mixed minefields and can provide close-in protection for defensive positions and key installations. Most mines cannot discriminate between targets. Abandoned, unmarked minefields can remain dangerous to both soldiers and civilians for an indefinite time. Mines were addressed in *The Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed To Be Excessively Injurious or To Have Indiscriminate Effects* also known as the Convention on Conventional Weapons (CCW).[9] Protocol II (Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-traps and Other Devices) contains rules for marking, registering, and removing minefields. The CCW was concluded 1980 and entered into force in 1993. The United States signed it in 1982 and the U.S. Senate gave its advice and consent to ratification on March 24, 1995.

Because of their relatively low cost and ease of use, APL have become a weapon of choice in many less developed parts of the world. Many nations and subnational groups do not abide by the CCW; some even use the indiscriminate effect of mines to terrorize civilians or deny them access to land. The U.S. Department of State estimates that about 50,000,000 mines are scattered across 69 mine-affected nations; almost 10,000 people were killed or injured by mines during 2001 — with concerted demining efforts, reported casualties are dropping. Problems still remain in such nations as Angola, Cambodia, and Afghanistan. Civilians constitute a significant percentage of victims, and in some countries over 30% have been women and children. In May, 1996, a CCW review conference amended Protocol II to better protect non-combatants; President Clinton referred it to the Senate for ratification in January 1997 (Treaty Document 105-1). The Senate gave advice and consent, with reservation, to the Amended Protocol in May 1999. The United States and other nations participate in demining and humanitarian assistance programs — over the years the United States has spent over $1 billion on such efforts.[10]

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[8] *Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction* [http://www.mines.gc.ca/VII/VII_AA_i-en.asp]

[9] *Convention on Certain Conventional Weapons* [http://www.ccwtreaty.com/ccwtreatytext.htm]

[10] *Milestones in Humanitarian Mine Action*, Bureau of Political-Miliary Affairs, U.S. Department of State, December 2005. [http://www.state.gov/t/pm/rls/fs/58255.htm]

Legislative Initiatives. In 1992, Congress established a one year moratorium on U.S. exports of APL (P.L. 102-484) and subsequently extended it for fifteen more years (see P.L. 107-115). H.R. 948, introduced in the 1st Session, 107th Congress, sought to make the ban permanent but was not brought to a vote. Many nations have followed the U.S. example and imposed their own moratoria. In the FY1996 Foreign Operations Appropriations Act (P.L. 104-107) Congress established a one-year ban on the use of APL by U.S. personnel to begin in 1999 — but, the 105th Congress repealed the moratorium in the FY1999 Defense Authorization Act (P.L. 105-261).

Clinton Administration and Other Initiatives. In 1996, President Clinton announced a policy that immediately discontinued U.S. use of "dumb" APL (except in the DMZ of Korea); supported negotiation of a worldwide ban on APL in the United Nations; supported development of alternative technologies to perform landmine functions without endangering civilians (he subsequently set a goal of 2003 to replace even smart mines everywhere except Korea, and of 2006 in Korea); and, expanded mine detection and clearing technology efforts and assistance to mine-plagued countries. This initiative temporarily retained the possible use of "smart" mines that render themselves harmless after a certain period of time, either through self-destruction, self-neutralization, or self-deactivation.

In November 1996, the United States introduced a resolution to the U.N. General Assembly to pursue an international agreement that would ban use, stockpiling, production, and transfer of APL — there were 84 co-sponsors. Some countries, such as Canada, already abided by the intent of the proposed agreement and pushed for an early deadline to reach agreement. Others, however, were concerned that verifying such an agreement would be difficult, or that AP landmines still have a useful and legitimate role in their security planning. Landmine control, specifically a ban on exports, was briefly on the agenda of the Conference on Disarmament (CD) in Geneva for 1999. During 2000, however, that body could not agree on its program of work and the landmine issue was not addressed again.

During 1997, the government of Canada and a number of non-governmental organizations, such as the International Campaign to Ban Landmines, sponsored conferences to craft a treaty outside the CD process. Over 100 nations signed the Ottawa Treaty, formally titled the *Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-personnel Mines and on Their Destruction,* which went into force for its parties on March 1, 1999. The Clinton Administration participated in the Ottawa Process, but declined to sign the Treaty after failing to gain certain temporary exceptions to treaty language. Specifically, the United States wanted to continue to use APL in the defense of South Korea until 2006 if necessary, and the ability to include smart APL (or "devices") within anti-tank landmine munitions. President Clinton suggested that the United States would sign the Ottawa Treaty in 2006 if effective alternatives to APL were available .[11]

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[11] The Army has an APL Alternatives effort underway. The Non Self-Destruct Alternative [http://www.globalsecurity.org/military/systems/munitions/nsda.htm] is in the engineering and manufacturing development stage; it combines lethal and non-lethal payloads and (continued...)

Bush Administration. The Bush Administration announced a new lanmdmine use policy on February 27, 2004:

- After 2010, the United States will not use any type of persistent landmines, whether anti-personnel or — a new policy — anti-vehicle. Self-destruct and self-deactivating landmines will be used and will meet or exceed specifications of the Amended Mines Protocol, CCW.
- Alternatives to persistent landmines will be developed that incorporate enhanced technologies.
- Non-metallic or low-metallic (non-detectable) mines of any type will not be used after January 2005.
- Funding for humanitarian demining will be increased by the State Department to $70,000,000 in FY2006.
- The United States will seek an international agreement that bans the sale or export of landmines that do not self-destruct and a protocol in the CCW to ban use of non-detectable anti-vehicle landmines.

This new policy does not include a date to join the Ottawa Treaty. It is unlikely that the Bush Administration will pursue such a goal. If needed, U.S. forces will use non-persistent mines. Various U.S. landmine systems were reportedly prepositioned in the Middle East in preparation for the 2003 war in Iraq, but were not used.

Issues for Congress. Congress may support the Bush Administration's new approach or it may press for quicker measures, such as expanding the unilateral U.S. moratorium on landmine use to include "smart" mines, encouraging the Administration to speed up the pace of international negotiations for a worldwide ban, or immediate acceptance of the Ottawa Treaty. Others in Congress, however, may counsel a more conservative approach to insure, for example, that the President does not prematurely forfeit the unique force protection advantages of current U.S. "smart" mines before fielding technological equivalents. At the appropriate time, the Senate may address any new international agreements or protocols that emerge from President Bush's landmine policy.

Further Reading

Landmines: Basic Facts and Congressional Concerns. CRS Report 96-362, updated August 26, 1998. (Archived. For copies, contact Amy Woolf, 202-707-2379.)
To Walk the Earth in Safety: The United States Commitment to Humanitarian Demining.. Fifth Edition, September 2004. U.S. Department of State.
New United States Policy on Landmines, Bureau of Political-Military Affairs, U.S. Department of State, February 2004. [http://www.state.gov/t/pm/rls/fs/30044.htm]

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[11] (...continued)
includes a "man-in-the-loop" to determine when they are fired.

Multilateral Nonproliferation Regimes and Treaties

International Nuclear Nonproliferation Regime

Introduction. The United States is a leader of an international regime that attempts to restrain the spread of nuclear weapons. The centerpiece of this regime is the Nuclear Nonproliferation Treaty (NPT), which entered into force in 1970; it was extended indefinitely in 1995. Recurring regional crises — most recently North Korea's resumption of its nuclear weapons program, and Iran's acknowledgment that it secretly pursued uranium enrichment for 18 years and insistence that it has the right to proceed with enrichment as part of its civilian power program — both raise questions about and reinforce the importance of nonproliferation policy. Increased awareness of the need to keep nuclear or radiological devices out of terrorist hands has reinvigorated efforts to control not just weapons-usable materials, but also all radiological sources.

Status of Nonproliferation Efforts. Five nations — the United States, Russia, France, Britain, and China — acknowledge having nuclear arsenals and were recognized as nuclear weapon possessors by the NPT. Three nations that have not signed the NPT — India, Israel, and Pakistan — possess significant nuclear weapons capabilities. Several countries, including Argentina, Brazil, and South Africa suspended their nuclear weapons programs and joined the NPT in the 1990s. Ukraine, Belarus, and Kazakhstan all gave up former Soviet weapons on their territories and joined the NPT as non-nuclear weapons states as well.

Despite these actions, regional concerns remain. North Korea was a member of the NPT, but developed nuclear weapons programs in defiance of the treaty. Iran, also an NPT signatory, is suspected of pursuing weapons technology. The tension between India and Pakistan is made more dangerous by their possession of nuclear explosives, and the situation is complicated by President Bush's proposal of "full civil nuclear energy cooperation with India. There is concern about Chinese and Russian activities that may encourage proliferation in the other regions.

Another area of concern is the existence in many countries of small research reactors fueled with highly enriched uranium (HEU). In May 2004 Energy Secretary Spencer Abraham announced a Global Threat Reduction Initiative aimed at repatriating fresh and spent fuel containing HEU from research reactors that had been supplied by the United States and Russia, and converting reactors that use HEU fuel to operate on low-enriched uranium. The United States is cooperating with Russia in implementing this effort; the target date for completion is 2010. Many have praised the Administration for raising the profile of this problem and focusing efforts on its resolution. Some, however, have noted that, in creating this initiative, the Administration simply moved and renamed existing programs. They argue that without added funding and a shortened time-line for completion, the United States and Russia may not succeed in repatriating this material before it falls into terrorist hands.

The Components of the Nuclear Nonproliferation Regime.

The Nuclear Nonproliferation Treaty. The Nuclear Nonproliferation Treaty is the cornerstone of international nonproliferation efforts. The Treaty is nearly universal — India, Pakistan, and Israel are the only remaining holdouts. In signing the NPT, non-nuclear weapons states (NNWS) pledge not to acquire nuclear weapons in exchange for a pledge by the nuclear weapons states (NWS) not to assist the development of nuclear weapons by any NNWS and to facilitate "the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy."[12] The NWS, defined as any state that tested a nuclear explosive before 1967, also agree to "pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament...."[13] This last point has been a source of controversy; a group of NNWS has often expressed dissatisfaction with the lack of progress toward disarmament.

The International Atomic Energy Agency (IAEA). The International Atomic Energy Agency was established in 1957 to assist nations in their peaceful nuclear programs (primarily research and nuclear power programs) and to safeguard nuclear materials from these peaceful programs to ensure that they are not diverted to nuclear weapons uses. The IAEA safeguards system consists of data collection, review, and periodic inspections at declared facilities. The IAEA may also inspect facilities if it suspects undeclared nuclear materials or weapons-related activities are present.

The NPT stipulates that member states must comply with the IAEA's system of safeguards and inspections to ensure that sensitive nuclear materials and technologies are not diverted from civilian to military purposes. Non-nuclear weapon NPT members are required to declare and submit nuclear materials in their possession to regular IAEA inspections. Some states who are not parties to the NPT (India, Israel, Pakistan) are members of the IAEA and allow inspections of some, but not all, of their nuclear activities. The IAEA also provides technical assistance for peaceful applications of nuclear technology for energy, medicine, agriculture, and research.

After the Persian Gulf War, IAEA inspection teams working with the U.N. Special Commission on Iraq (UNSCOM) revealed an extensive covert nuclear weapons program that had been virtually undetected by annual inspections of Baghdad's declared facilities. This knowledge inspired efforts to strengthen the IAEA's authority to conduct more intrusive inspections of a wider variety of installations, to provide the Agency with intelligence information about suspected covert nuclear activities, and to provide the Agency with the resources and political support needed to increase confidence in its safeguards system.

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[12] NPT, Article IV-2.

[13] NPT, Article VI.

The IAEA applied lessons learned in Iraq to detect North Korea's undeclared nuclear activities. The IAEA reported North Korea's non-compliance to the U.N. Security Council, which urged Pyongyang to comply but took no enforcement action. The United States then took the lead in negotiating an agreement (the 1994 "Agreed Framework") that sought to stop construction at North Korea's disputed facilities and eventually open them to IAEA inspections. In November 2002, however, North Korea acknowledged that it was continuing programs to develop nuclear weapons, leading to the virtual abandonment of the agreement and a continuing crisis (see entry below).

In 1998, the IAEA adopted a new, "Additional Protocol" that would give the agency greater authority and access to verify nuclear declarations. Each NPT member state must ratify the new protocol for it to take effect. The Additional Protocol was gradually adopted by many countries, and in February 2004 President Bush recommended that it be required of all NPT signatories. He urged the Senate to consent to it on the part of the United States, and on March 31 the Senate ratified the protocol (Treaty Doc. 107-7, Senate Executive Report 108-12). IAEA's efforts to restrain Iran's weapons activities are focused on getting that country to implement the new inspection protocol, and agree to abandon uranium enrichment.

Export Controls. The United States has been a leader in establishing export controls, a key component of the nuclear nonproliferation regime. The Atomic Energy Act of 1954 and Nuclear Nonproliferation Act of 1978 established controls on nuclear exports that gradually gained acceptance by other nuclear suppliers. The Export Administration Act of 1979 (EAA) authorized controls on dual-use technology that could contribute to foreign weapons. Export controls require exporters to get a license before selling sensitive technology to foreign buyers and, in some cases, ban certain exports to some countries.

International nuclear controls are coordinated by an informal association of nuclear exporters called the Nuclear Suppliers Group (NSG). NSG members agree to a common policy to restrict exports of certain goods such as uranium enrichment and plutonium reprocessing technology that could be used by proliferants to make nuclear weapons. The NSG's effectiveness is limited by the fact that it is a voluntary multilateral group without verification or enforcement mechanisms. Thus, countries such as Iraq, Pakistan, and others have exploited weaknesses in the national export control systems of Western countries to acquire a wide range of nuclear items.

Sticks and Carrots. Other efforts — such as economic, military, or security assistance — may also help slow the proliferation of nuclear weapons. These cooperative measures have been effective in some cases (South Korea, Taiwan, Belarus, Kazakhstan, Ukraine), but failed in others (Iraq, Israel, Pakistan). Some favor greater use of sanctions against countries that violate international nonproliferation standards, while others view sanctions as self-defeating. Most observers conclude that a mix of positive and negative incentives, including diplomacy to address underlying regional security problems, provides the best opportunity for controlling the spread of nuclear weapons. However, when diplomacy fails, some policy-makers have argued that military measures may be

necessary to attack nuclear and other weapons of mass destruction and related facilities in states hostile to the United States or its allies. For example, the Bush Administration claimed that the overthrow of the Saddam Hussein regime in Iraq was justified, in part, on the basis of claims that Iraq possessed chemical and biological weapons and might resume efforts to develop nuclear weapons. As developments revealed, however, accurate intelligence is a key component of both diplomatic and military approaches to nonproliferation.

Convention on the Physical Protection of Nuclear Material. The Convention on the Physical Protection of Nuclear Material was adopted in 1987 and sets international standards for nuclear trade and commerce. The Convention established security requirements for the protection of nuclear materials against terrorism; parties to the treaty agree to report to the IAEA on the disposition of nuclear materials being transported and agree to provide appropriate security during such transport. For several years, the United States has been trying to strengthen this treaty by extending controls to domestic facility security, not just transportation. In addition, the Convention addresses nuclear material but not radioactive sources. States parties, when they met last in November 2002 to address such issues, were unable agree on language to strengthen the convention. They met again in March 2003.

Issues for Congress. Proliferation issues that may attract attention in the 109th Congress in 2006 include:

- The proposed nuclear cooperation with India, in light of the tensions between India and Pakistan as amplified by their nuclear activities;
- North Korea's nuclear weapons activities;
- Iran's suspected weapons program and Russia's nuclear cooperation with Iran; and,
- Continued concerns about access by terrorists to nuclear materials.

For Further Reading

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Proliferation Control Regimes: Background and Status. CRS Report RL31559.
U.S. Nuclear Cooperation With India: Issues for Congress CRS Report RL33016.

Comprehensive Test Ban Treaty

Introduction. The Comprehensive Test Ban Treaty (CTBT) would ban all nuclear explosions. It opened for signature in 1996. President Clinton submitted it to the Senate for advice and consent in 1997. The Senate rejected it — 48 for, 51 against, 1 present — on October 13, 1999.

Test Ban Negotiations and Status. Negotiations to halt nuclear testing began in the mid-1950s. The multilateral Limited Test Ban Treaty of 1963 bans nuclear explosions in the atmosphere, in space, and under water. The U.S.-U.S.S.R. Threshold Test Ban Treaty (signed in 1974) and Peaceful Nuclear Explosions Treaty (signed in 1976) limit the explosive yield of underground nuclear explosions to 150 kilotons (TNT equivalent). Both were ratified in 1990.

CTBT negotiations began in 1994 in the Conference on Disarmament (CD). Participants in the 1995 Review Conference for the Nuclear Nonproliferation Treaty (NPT) agreed to press to complete the treaty in 1996. Non-nuclear weapons states see the CTBT as the key indicator that the nuclear weapons states (Britain, China, France, Russia, and the United States) are complying with Article VI of the NPT, which calls for "negotiations in good faith on effective measures relating to cessation of the nuclear arms race ... and to nuclear disarmament." The CD reached a draft treaty in July 1996, it opened for signature at the U.N. General Assembly two months later. By December 2005, 176 nations had signed it and 125 had ratified it. Of the 44 nations that must ratify the treaty for it to enter into force, 41 had signed (India, Pakistan, and North Korea had not) and 33 had ratified. The United States conducted its last nuclear test on September 23, 1992, and has observed a nuclear test moratorium since October 1992. The Administration has continued this moratorium but opposes ratification of the treaty.

In September 2004, foreign ministers from 42 nations called for prompt ratification of the CTBT, especially by those nations whose ratification is required for entry into force. In December 2004, the U.N. General Assembly adopted, 177-2 (United States, Palau), a resolution calling for early entry into force and calling on states that have signed but not ratified the treaty to "accelerate their ratification processes." Some nations at the Nuclear Nonproliferation Treaty Review Conference of May 2005 criticized the United States for not ratifying the CTBT.

Treaty Provisions. States party to the treaty agree "not to carry out any nuclear weapon test explosion or any other nuclear explosion." The treaty establishes a Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) of all member states to implement the treaty. The organization oversees a Conference of States Parties, an Executive Council, and a Provisional Technical Secretariat. The latter operates an International Data Center that processes and reports on data from an International Monitoring System. Several CTBTO components would handle requests for on-site inspections if the treaty enters into force. A Protocol details the monitoring system and inspection procedures. Entry into force shall occur 180 days after ratification by 44 named states having nuclear reactors. If the treaty has not entered into force 3 years after being opened for signature, states that have ratified

it may hold a conference on how to accelerate entry into force. Conferences were held in 1999, 2001, 2003, and 2005. The United States did not send a representative to the 2001 conference. A State Department official reportedly said, "This is a meeting for ratifying states and we've made it clear we're not going to ratify."

Issues for Congress.

Can the United States maintain its nuclear weapons under the CTBT? In 1995, President Clinton conditioned U.S. adherence to a CTBT on, among other things, funding a stockpile stewardship program to ensure confidence in nuclear weapons without testing. Secretary of Energy Spencer Abraham said in 2003 that this program "has allowed the Secretaries of Energy and Defense to certify to the President that (1) the Nation's nuclear weapons stockpile is safe, secure and reliable and (2) that there is no need to resume underground testing." A 2002 report by the National Academy of Sciences (NAS) judged that this nation could maintain its weapons under a CTBT with adequate stewardship resources. CTBT opponents counter that testing is the only way to maintain confidence because, without testing, this nation may be unable to detect or fix age-related weapon problems. Some would also retain the option to develop new weapons, which might require testing, if a need arose. The FY2006 appropriation for stewardship, listed as Weapons Activities in the Department of Energy (DOE) budget, is $6,433.9 million.

The Reliable Replacement Warhead (RRW) program may offer another way to maintain weapons without testing. It emerged as a funded program in the FY2005 Consolidated Appropriations Act, P.L. 108-447. RRW would, reportedly, replace existing warheads with simpler designs that would stay far away from potential failure modes. DOE intends that RRWs could be certified for the stockpile without nuclear testing.

If the United States does not maintain its moratorium and chooses to resume nuclear testing to maintain its weapons, it would have to address questions about its "test readiness posture," the time needed to conduct a test following a presidential order to do so. In 1995, this time was set at 24 to 36 months, but DOE stated in 2002 that it could be difficult to maintain a 36-month posture. The FY2004 National Defense Authorization Act (NDAA) required the DOE to develop an 18-month posture (P.L. 108-136, sec. 3113). Conferees on the FY2004 Energy and Water Development Appropriations Act (P.L. 108-137) expressed concerns about the atrophy in readiness, but favored "restoring a rigorous test readiness program that is capable of meeting the current 24-month requirement before requesting significant additional funds to pursue a more aggressive goal of an 18-month readiness posture." The FY2005 NDAA fully funded the test readiness request of $30.0 million, while the FY2005 Consolidated Appropriations Act (P.L. 108-447) reduced funding by $7.5 million. For FY2006, the Energy and Water Development Appropriations Act (P.L. 109-103) reduced test readiness from $25.0 million requested to $20.0 million, and the accompanying conference report stated, "The conferees direct the Department [of Energy] to maintain the current 24-month test readiness posture." The NDAA provided the full request for test readiness.

Can the CTBT be adequately monitored? The treaty establishes several means for monitoring compliance, including four types of detection networks, an International Data Center to process the data, and on-site inspections. Nations may also use their own technical systems. CTBT supporters hold that these capabilities will permit monitoring of low level tests. They contend that cheaters would have great difficulty evading multiple types of monitoring systems and, with little testing experience, might not be confident in their ability to hide a seismic signal. The NAS study judged that a nuclear explosion greater than 1 or 2 kilotons could not be confidently hidden even using evasion techniques.

CTBT opponents believe that evasion is quite feasible. Conducting tests in large underground cavities would muffle seismic signals, while testing at sea might provide evidence of a test but not the identity of the tester. On-site inspections are of little value because they cannot provide conclusive evidence unless the test location is pinpointed, and none of the international monitoring systems offer such precision. Critics also contend that the United States might have to compromise its intelligence assets to make a convincing case if a test occurred. They view low-yield tests as militarily significant, whether to assure a new nuclear power that its weapon designs work, to help Russia or China develop new weapons, or to provide data that would aid in building computer models for weapons design.

Would the CTBT help nuclear nonproliferation efforts? CTBT supporters believe that the treaty would help stem nuclear proliferation. In this view, treaty rejection would undermine support for the NPT and weaken the safeguards regime for non-nuclear nations' peaceful nuclear activities.

Opponents argue that the CTBT would undermine U.S. nonproliferation goals because it would weaken confidence in U.S. nuclear weapons, which could tempt adversaries to build their own nuclear forces. In this view, U.S. allies might "go nuclear" if they felt they could not rely on U.S. nuclear weapons to deter their adversaries. These critics believe that U.S. nuclear testing would further enhance deterrence by enabling development of new warheads for new military missions. They feel that IAEA safeguards are of dubious value; many believe, for example, that Iran and North Korea have been developing nuclear weapons despite them. They hold that nations will decide whether to develop nuclear weapons based on their own needs and interests, regardless of U.S. participation in the CTBT.

For Further Reading

Comprehensive Test Ban Treaty: Pro and Con. CRS Report RS20351.
Nuclear Weapons: Comprehensive Test Ban Treaty. CRS Issue Brief IB92099.
Nuclear Weapon Initiatives: Low-Yield R&D, Advanced Concepts, Earth Penetrators, Test Readiness. CRS Report RL32130.
Nuclear Weapons: The Reliable Replacement Warhead Program. CRS Report RL32929.
Nuclear Testing and Comprehensive Test Ban: Chronology Starting September 1992. CRS Report 97-1007 F.

Fissile Material Production Cutoff Treaty (FMCT)

Introduction. The United States first proposed that the international community negotiate a ban on the production of fissile materials (plutonium and enriched uranium) that could be used in nuclear weapons over fifty years ago. Negotiators of the landmark 1970 Nuclear Nonproliferation Treaty (NPT) realized that the NPT would still allow the production of such fissile material under the guise of peaceful nuclear activities. Consequently, a fissile material production ban, or FMCT, has remained on the long-term negotiating agenda at the Conference on Disarmament (CD) in Geneva. These negotiations have been stalled since 1993. The Bush Administration undertook a comprehensive review of the U.S. position on the FMCT, releasing the results in July 2004. The Bush Administration believes such a ban would be useful in creating "an observed norm against the production of fissile material intended for weapons," but it has argued that such a ban is inherently unverifiable. The Bush Administration could continue to support the negotiations in the CD, or it could, instead, pursue quicker, but perhaps not so comprehensive, results on an ad hoc basis.

Background. In 1992, then-President George H.W. Bush announced that the United States would seek a FMCT and declared that the United States was no longer producing fissile material for its own nuclear weapons. In fact, the United States had stopped producing plutonium in 1989 (?) and stopped enriching uranium to weapons-grade in 19XX. President Clinton proposed negotiating an FMCT in the Conference on Disarmament in 1993 and succeeded in getting the other four nuclear weapon states to adhere to a fissile material production moratorium in 1995. However, negotiations on an FMCT in the CD have been held hostage to other negotiations (for example, by Chinese insistence on linkage to negotiations on weapons in outer space) and have been blocked by some states (Pakistan and India). Although an Ad Hoc Committee to explore the outlines of negotiations was established twice, and several substantive seminars have been held, there is little agreement still in Geneva on the scope of a potential treaty. One key issue is whether or not such a treaty would seek to include existing stocks of fissile material; the United States, in the past, has strongly objected to such an approach.

In 1993, FMCT negotiations, although a stated priority of the Clinton administration, quickly became secondary to the Comprehensive Test Ban Treaty negotiations underway in Geneva. Substantively, it always been important to capture the undeclared nuclear weapon states (initially India, Pakistan, and Israel, but now also North Korea) that were not parties to the NPT and therefore subject to very few if any restrictions or monitoring. Many observers believed that negotiations at the CD were preferable to smaller, eight-party talks (United States, United Kingdom, France, China, Russia, India, Pakistan, and Israel) because they would establish a global norm and would not have the appearance of conferring nuclear weapons status upon India, Pakistan, and Israel. Since the mid-1990s, however, both India and Pakistan have openly tested nuclear weapons, and North Korea has pulled out of the NPT and reportedly is not only making plutonium for weapons, but may be on its way to enriching uranium for weapons. Negotiators may have to balance the very

real need to halt production by such states (and perhaps also Iran) against traditional concerns of the nuclear nonproliferation community.

In addition to North Korean capabilities (which had been halted, at least in plutonium production, from 1994 to 2002), Iran's burgeoning enrichment capabilities are a cause for concern. Also, the uncovering of the A.Q. Khan nuclear black market network in late 2003 and 2004, points to the need for greater efforts to halt the spread of production capabilities. Director General Mohamed El Baradei of the International Atomic Energy Agency in early 2004 called for renewed efforts to negotiate an FMCT as one response to the proliferation of enrichment capabilities by the Khan network. President Bush notably did not include FMCT in his list of approaches to combating the Khan network, but instead called for supplier controls and a voluntary ban on enrichment and reprocessing by NPT member states.

Issues for Congress. It is not clear from official statements that the Bush Administration will vigorously pursue FMCT negotiations this year at the CD in Geneva. However, while negotiations are still in their infancy, it could be important to begin a public debate through hearings on various options and approaches to end the production of fissile material for weapons. Some outcomes, particularly those that include intrusive verification, could have an impact on U.S. facilities that are not currently being monitored. Another aspect for congressional consideration is how well-equipped the U.S. intelligence community is to verify any such agreement.

For Further Reading:

Proliferation Control Regimes: Background and Status. CRS Report RL31559.

Chemical Weapons

Introduction . The Chemical Weapons Convention opened for signature in January 1993. Since then,186 nations have signed and 175 nations, including the United States and Russia, have ratified the treaty. Only eight nations have not acceded to the Convention.[14] The Convention entered into force on April 29, 1997. The CWC is designed to promote the global elimination of chemical weapons. It bans the development, production, transfer, stockpiling, and use of chemical and toxin weapons, mandates the destruction of all CW production facilities, and seeks to control the production and international transfer of the key chemical components of these weapons.

CWC Negotiations and Congressional Action. CWC Negotiations began in 1968. From 1976 to 1980, the United States and the USSR — possessors of the world's largest CW stockpiles — also conducted bilateral negotiations. In 1980, the United States broke off the bilateral effort and returned to the multilateral Conference on Disarmament (CD). Verification issues stalled the talks until the Soviet Union accepted challenge inspections in 1988. In September 1992, the CD's forty member-nations agreed on the final draft and forwarded it to the United Nations, where it was approved by the General Assembly and opened for signature. During the 103rd, 104th, and 105th Congresses, the Senate Foreign Relations, Armed Services, Intelligence, and Judiciary Committees held hearings on the CWC. On April 24, 1997, the Senate passed a ratification resolution, S.Res. 75, with 28 binding provisions concerning verification, Russian participation, and costs.

The CWC implementing legislation was incorporated in the FY1999 Omnibus Appropriations Act (P.L. 105-277). This legislation provides the statutory authority for domestic compliance with the Convention's provisions. It sets criminal and civil penalties for the development, production, acquisition, stockpiling, transfer, possession, or use of chemical weapons. It also establishes: 1) procedures for seizure, forfeiture, and destruction of contraband chemical weapons; 2) statutory authority for record-keeping and reporting requirements relevant to the CWC; 3) various restrictions on certain chemicals, depending on their likelihood of being used to produce chemical weapons; and 4) a protective regime for confidential business information gathered from private corporations. The legislation also provides detailed procedures to be used for on-site inspections by the OPCW, including limitations on access and search warrant procedures, should they be required. Though supporting passage, CWC advocates expressed concerns over several sections of the legislation and have suggested addressing them in new legislation.

Limits and Restrictions in the Chemical Weapons Convention. Parties to the Convention must cease all offensive chemical weapons research and production and close relevant facilities within 30 days. All CW stockpiles must be declared, inventoried by international inspectors, and sealed. They must destroy their weapons within 10 years, unless the international Organization for the Prohibition of

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[14] Angola, Barbados, Egypt, Iraq, Lebanon, North Korea, Somalia, and Syria.

Chemical Weapons (OPCW) approves an extension. They must also destroy all CW production facilities within 10 years. In "exceptional cases of compelling need", the OPCW may approve the conversion of these facilities to peaceful purposes.

The CWC contains a complex verification regime, with different obligations applying to different types of chemical facilities. The Convention establishes three schedules of chemicals, grouped by relevance to CW production and extent of legitimate peaceful uses. Facilities that produce over 100 grams of Schedule I chemicals per year are subject to systematic on-site verification, and no signatory may produce over 1 metric ton of these chemicals per year. Schedule II chemicals have no production limits, and production facilities are subject to periodic verification inspections. Schedule III chemicals also have no production limits, and production facilities are subject to random or "ad hoc" inspections. Signatories may also request challenge inspections at facilities suspected to be in violation of the Convention. The OPCW will carry out these inspections on short notice. Inspected nations will have the right to negotiate the extent of inspectors' access to any facility, but must make every reasonable effort to confirm compliance.

Issues for Congress.

Russian Compliance and Financial Aid. Information exchanges under a bilateral U.S.-Russian CW destruction agreement, amplified by charges of deception from former Russian CW scientists, have led to charges that the Russians have not been forthright in declaring details about their CW program, particularly in the area of binary agent research. The U.S. intelligence community has provided the relevant Senate Committees with classified briefings on attempts to reconcile these concerns through continued high-level consultations.

Russia has maintained that needs significant foreign aid to carry out its destruction program, including substantial assistance in infrastructure improvements for the communities where destruction sites are located. The United States provided Russia with about $230 million from FY1992-FY2000, under DOD's Cooperative Threat Reduction Program, to help with chemical weapons destruction. Most of these funds have been directed to construction of a destruction facility at Shchuch'ye. Many in Congress have strong reservations about this project, noting, in particular, the relative paucity of assistance from other nations. The FY2000 and FY2001 DOD Authorization Acts forbade additional funding. However, the Bush Administration continued to support the program, and Congress has funded the Administration's requests since FY2002. The impetus for continued funding, despite reservations, has been the concern that the Russian CW stockpile is a potential source of covert CW proliferation. Additional international assistance has been slow in coming. Although the U.S. allies in the G-8 have pledged upwards of $20 billion, only a small fraction of this has actually been provided.

Even with foreign assistance, Russia will not be able to meet CWC destruction deadlines. It requested an extension until 2012, but few believe that extension will be sufficient. Consequently, the CWC Conference of States Parties has approved an extension of Russia's interim deadline to destroy 20% of its stockpile to April 2007

and also agreed to an extension of subsequent deadlines in principle, with no date specified. In November 2004, a senior Russian official announced schedules for the construction of five new CW destruction facilities and still projected that the new 2012 deadline will be met.[15]

U.S. Chemical Demilitarization Program. The United States has also encountered difficulties in destroying its CW stockpile. In October 2003, the United States acknowledged that it would not be able to destroy 45% of its CW stockpile by the interim deadline of April 29, 2004. Of particular interest, is that the United States requested an extension of the 45% interim deadline to December 2007 — full eight months after the Convention's deadline for the destruction of the entire stockpile. This request, and its implication that the United States will not be able to meet the final destruction deadline of April 2007, reflects the many difficulties the destruction program has encountered over the last 18 years. Accepting that the United States is undertaking a good faith effort to destroy its stockpile, on October 24, 2004 the Eighth OPCW Conference of States Parties approved the extension of the 45% deadline to December 2007 and the extension of the final deadline in principle, with no date specified.

Congressionally-mandated studies have resulted in alternative means (e.g. chemical neutralization) being developed and applied to stockpiles at Aberdeen MD, Newport IN, Lexington KY, and Pueblo CO. In addition, private lawsuits at the Anniston AL and Umatilla OR depots have delayed the program. Reflecting these activities, since April 2001 the program's total cost estimate has risen from $13 billion to $32.6 billion[16]

Non-Compliance. In its 2005 report on arms control treaty compliance, the United States has asserted that China maintains an active CW research and development program and "CW production mobilization capability". The report further assesses that Iran is "retaining and modernizing key elements of its CW infrastructure, including offensive research and development, a possible undelcared stockpile, and an offensive production capability." The United States has not requested challenge inspections for any facilities in these countries because of concerns that prohibited activities could avoid detection, and that inspections that failed to confirm such activity would contribute to a false sense of security.[17] The Administration has also not sought to impose unilateral sanctions.

Non-signatory Nations. Several nations suspected of possessing chemical weapons (e.g. Syria, North Korea) have not joined nor are expected to join the CWC. Consequently, some fear that relinquishing its own chemical weapons has put the United States at a military disadvantage in a future confrontation. Convention

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[15] Nartker, Mike. "Russian Official Outlines Detailed Schedule to Eliminate Chemical Weapons Arsenal by 2012" *Global Security Newswire*, November 12, 2004.

[16] *DOD Selected Acquisition Report*, September 2005.

[17] *Adherence to and Compliance with Arms Control and Nonproliferation Agreements and Commitments.* Department of State, 2005.

supporters believe that robust defensive measures and the threat of massive conventional retaliation will counterbalance and or deter CW use. They also note that, in 1985, Congress mandated that the U.S. chemical weapons stockpile be destroyed independent of the CWC's ratification. The most notable new accession to the CWC is Libya, which has ended its WMD programs and is undertaking the destruction of its CW stockpile under OPCW supervision. The newly elected government of Iraq is expected to sign and ratify the CWC in the near future.

Implementing Legislation. Although the CWC implementing legislation included provisions that have raised some concerns among CWC supporters, Congress has not yet addressed these with new legislation:

- Sections 102 & 108 — prohibit requiring that government contractors waive any constitutional rights for any purpose related to the CWC. Some believe that this could hinder the CWC routine inspection regime.
- Section 103 — sets procedures for U.S. firms to seek compensation from the U.S. government, should they suffer the loss of proprietary information through the actions of OPCW employees. Critics maintain that, as worded, this section does not place a high enough burden of proof on the claimants, and could lead to excessive and unfounded claims against the government.
- Section 304 — prohibits sending chemical samples from inspections to laboratories outside the United States for analysis in order to reduce the possibility of the loss of proprietary information. Critics maintain that this precedent could hamper inspection effectiveness if other nations, particularly those with no OPCW approved laboratories, establish the same prohibition.
- Sections 307 — grants the President the right to deny a request for inspection if it "may cause a threat to U.S. national security interests." The CWC contains no provision permitting denial of an inspection, and critics note that doing so could place the United States in non-compliance, and encourage other nations to refuse inspections.
- Section 403 — exempts discrete organic chemicals not on the CWC control lists and incidental chemical by-products or waste-streams from reporting and inspection requirements. This is intended to ease the potential burdens, particularly on paper manufacturers, but critics believe the exemption is too broad and would rule out an effective non-intrusive sampling technique.

For Further Reading

Chemical Weapons Convention and Related Documents [http://www.state.gov/t/ac/cwc/]

Chemical Weapons Convention: Issues for Congress, CRS Report RL32158.

Biological Weapons

Introduction. The 1972 Biological and Toxin Weapons Convention (BWC) bans the development, production, stockpiling, transfer, and use of these weapons. The Convention has 151 States Parties, including the United States, and there are 16 additional countries that have signed, but not ratified the Convention. Many believe that the Convention is inadequate because it does not contain any verification or enforcement provisions. Revelations about proven and alleged Soviet violations of the BWC are exemplary of the concerns about the enforceablility of the Convention. Since 2001, the United States has opposed strengthening the BWC, emphasizing instead voluntary measures by individual national governments.[18]

Negotiations on the BWC. In 1969, the Nixon Administration, after studying recommendations of a government-wide commission, unilaterally renounced biological weapons. Offensive BW development and production ceased, and destruction of the U.S. BW stockpile began. Simultaneously, the United States pressed the Soviet Union to follow its example. After some delay, agreement was reached, and the BWC was signed in 1972. The United States, after lengthy Senate consultations, ratified the Convention in 1975.

Every five years the BWC State Parties convene a review conference to discuss ways to enhance the convention's effectiveness. The November 2001 Review Conference ended in disarray, unable to agree upon a final declaration. The primary deadlock was the issue of an adaptive protocol to the Convention, intended to enhance its enforcement. In July 2001, after all most seven years of negotiations, the United States declared the 200-page protocol unacceptable as basis for further negotiation. A Bush Administration review concluded that the draft protocol would not provide adequate security against covert violations, yet could endanger the security of U.S. biodefense programs and U.S. commercial proprietary information. Alone in its complete rejection of the draft protocol, the United States came under widespread international criticism, including from close allies, for "jeopardizing" the future of biological arms control. In response, the Administration put forward several proposals at the 2001 Review Conference, urging their adoption by BWC State Parties at the national level. These included:

- Criminalization of BWC violations and expedited extradition procedures for violators
- United Nations investigation of suspicious disease outbreaks or alleged BW use
- Procedures for addressing BWC compliance concerns
- Improved international disease control
- Improved security over research on pathogenic organisms

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[18] The text of the BWC and associated documents are available at the Department of State website: Biological Weapons Convention [http://www.state.gov/t/ac/bw/]

The Review Conference was unable to reach a compromise final declaration on future activities satisfactory to all State Parties, and adjourned until November 2002. The U.S. has continued to oppose further negotiations on a verification, and while calling for international action against Iran and North Korea whom it has identified as BWC violators. Confronted with the U.S. position, the Chairman of the 2002 Review Conference, presented a minimal program emphasizing only annual meetings to discuss strengthening national laws and ways to respond to BW attacks. These were endorsed by the United States and accepted by the Conference. The BWC Review Conference will reconvene in the Fall of 2006.

The 2005 BWC Annual Meeting of States Parties focused on codes of conduct for scientists.[19] Though a number of scientific and non-governmental organizations have proposed guidelines for an international code, the Bush Administration opposes a "universal code" as impractical, and the prefers the adoption of "generic principles" by the 2006 Review Conference.[20]

Key Limitations and Restrictions. The BWC permits only defensive biological warfare research (e.g., vaccines, protective equipment), and allows production and stockpiling of BW agents only in amounts justifiable for protective or peaceful purposes. Unlike the Chemical Weapons Convention (CWC), the BWC does not specify particular biological agents, but generically defines them as: "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 or peaceful purposes."

Issues for Congress. The Fall 2001 postal anthrax attacks in the United States spurred significant congressional interest in biological weapons, but the focus has been primarily on increased domestic security and medical protective/treatment measures. Though there has been some congressional criticism of the Administration's position on the BWC, there has been no political initiative to refocus biological arms control efforts. While those in favor of strengthening the BWC have pointed to the anthrax attacks as emphasizing the need for greater efforts to control biological weapons, those supporting the Administration's position maintain that the difficulties in apprehending the perpetrator(s) of the anthrax attacks merely highlights the futility of an international BW verification regime.

Since a 1979 outbreak of anthrax in Sverdlovsk Russian non-compliance has been an issue. The United States has used the Review Conferences to repeatedly charge that the Soviet Union is in violation of the Convention. After the dissolution of the Soviet Union, President Yeltsin acknowledged a clandestine Soviet BW program, but declared that in 1992 all offensive BW efforts ceased. The United States and the United Kingdom believe, based upon defectors' reports, that the Russian declarations on their BW capability are incomplete and misleading.

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[19] U.S. Delegation presentations are available at [http://www.state.gov/t/ac/bw/c14801.htm].

[20] *Opening Statement of the U.S. Delegation*, BWC Annual Meeting of State Parties, December 5, 2005 [http://www.state.gov/t/ac/rls/rm/58069.htm]

According to the President's latest arms control compliance report, "Russia maintains a mature offensive BW program."[21] Consultations among the United States, the United Kingdom, and Russia to resolve this controversy have broken off with no progress. The United States has imposed no unilateral sanctions against Russia in connection with BWC non-compliance.

The 2005 report on arms control agreement compliance also noted that China continues to maintain some elements of an offensive BW capability, and North Korea has a mature offensive BW program and may have biological weapons available for use.[22] The Administration has altered its earlier assessment that Cuba had a BW research and development program, and now only notes that Cuba has "the technical capability to conduct limited offensive BW research and development." Reflecting the Administration's growing concern over the activities of the Syrian government in general, an assessment that Syria has conducted offensive BW research and development is included in the 2005 compliance report although Syria is not a State Party to the BWC.[23]

Further Reading

Proliferation Control Regimes: Background and Status. CRS Report RL31559

"U.S. Official Proposes New Approaches to BW Threat". State Department press release, November 19, 2001.

"*U.S. Efforts to Combat the Biological Weapons Threat"*. State Department Fact Sheet. November 14, 2002. [http://www.state.gov/t/ac/rls/fs/15150.htm]

Tucker, Jonathan, "Strengthening the BWC", *Disarmament Diplomacy*, July/August 2004. pp. 24-30 [http://www.acronym.org.uk/dd/dd78/78jbt.htm]

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[21] *Adherence to and Compliance with Arms Control and Nonproliferation Agreements and Commitments.* Department of State, 2005. p. 27

[22] Ibid. pp. 17, 26

[23] Ibid. p. 31.

The Missile Technology Control Regime

Introduction . The United States, Canada, France, Germany, Italy, Japan, and the United Kingdom established the Missile Technology Control Regime (MTCR) on April 16, 1987. The MTCR was designed to slow the proliferation of ballistic and cruise missiles, rockets, and unmanned air vehicles (UAV) capable of delivering weapons of mass destruction. It is an informal arrangement, not a treaty, consisting of guidelines for transfers of missiles and related technology, and an annex listing items to be controlled. The Regime is based on the premise that foreign acquisition or development of delivery systems can be delayed and made more difficult and expensive if major producers restrict exports. The MTCR has no independent means to monitor or enforce its guidelines. Nations adopt the guidelines as national policy and are responsible for restraining their own missile-related transfers.

Participants. Since 1987, the number of countries that adhere to the MTCR has grown from seven to 34, with Bulgaria joining the Regime in June 2004.[24] Four countries (China, Israel, Romania, and Slovakia) have said they will restrict their transfers of missile equipment and technology but have not become partners. The United States supports new requests for membership to the MTCR only if the country in question agrees not to develop or acquire missiles (excluding space launch vehicles) that exceed MTCR guidelines. Plenary sessions are usually held each year to review activities and to examine ways to further strengthen the regime. Occasionally, some partners meet with potential importing, exporting, or transhipping countries to encourage restraint.

The Substance of the MTCR. The MTCR guidelines call on each of the partner countries to exercise restraint when considering transfers of equipment or technology that would provide, or help a recipient country build, a missile capable of delivering a 500 kilogram (1,100 pound) warhead to a range of 300 kilometers (186 miles) or more. The 500 kilogram weight threshold was intended to limit transfers of missiles that could carry a relatively crude nuclear warhead. A 1993 addition to the guidelines calls for particular restraint in the export of **any missiles** or related technology if the nation controlling the export judges that the missiles are intended to be used for the delivery of weapons of mass destruction (nuclear, chemical, or biological). Thus some missiles with warheads weighing less than 500 kilograms also fall under MTCR guidelines. The MTCR Annex divides equipment and technologies into two categories. Category I items include complete missile and rocket systems and complete subsystems. Category II items consist of other components, equipment, material, and technology that could be used in the development, production, or testing of a missile.

Analysts credit the MTCR with slowing missile development in Brazil and India, blocking a cooperative missile program of Argentina, Egypt, and Iraq, and eliminating missile programs in South Africa and Hungary. Partner countries have tightened their export control laws and procedures, and several have taken legal

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[24] "Treaty Update: MTCR," *Arms Control Today*, September 2004, p. 5.

action against alleged missile-technology smugglers. On the other hand, some analysts note that the MTCR cannot prevent countries such as North Korea, Iran, Syria, India, and Pakistan from acquiring and producing missiles, nor prevent non-Partners (China, North Korea, and others) from exporting missiles and technology. It has also been difficult to restrain exports of ballistic and cruise missile technology from some Partners — Russia has exported technology to Iran and Great Britain has done so to the United Arab Emirates. Analysts and experts in the international community have also discussed the possibility that the "supply side" approach of the MTCR has outlived its usefulness and that a "demand side" approach to proliferation, on a regional or global basis, might prove more effective.

The U.S. Arms Export Control Act restricts exports of military items, including missiles and related technology. The Export Administration Act of 1979 (EAA), serves as the legal authority for the United States Government to control exports of civilian goods and technology, including those that are also useful for missile production. With the collapse of the Soviet Union, the EAA became less relevant to world conditions and expired on August 20, 1994. President Clinton reimposed export controls under the International Emergency Economic Powers Act (IEEPA) on November 14, 1994. On August 17, 2001, President George W. Bush, by Executive Order 13222, continued EAA export controls under the IEEPA.

Recent Significant Activities. In 2004, MTCR leadership conducted outreach discussions with China and Libya. Discussions with China focused on Chinese missile and missile technology export control legislation in comparison to the MTCR Annex. Further discussions were proposed to discuss how China might implement and enforce its missile export controls. In Libya, the MTCR leadership discussed Libya's decision to abandon its weapons of mass destruction and ballistic missile programs. The MTCR team was granted access to missile-related sites and held discussions on how Libya might set up export controls procedures were held.[25]

The MTCR held its 19th Plenary Meeting in Seoul, Republic of Korea on October 6 -8, 2004. The members reportedly expressed serious concern over missile proliferation in North East Asia, the Middle East, and South Asia, and reaffirmed their determination to discourage missile proliferation. The Plenary also recognized the need to consider the issues of transit and transhipment of missile technology and the need to curtail activities of intermediaries and front companies. Spain has offered to host the 2005 Plenary and to serve as Chair of the MTCR in 2006.[26]

International Code of Conduct Against Ballistic Missile Proliferation (ICOC). The International Code of Conduct Against Ballistic Missile Proliferation (ICOC) was inaugurated on November 25, 2002. As of January 1, 2004, 111

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[25] "Statement by the MTCR Chairman on his recent outreach activities, 2004" [http://www.mtcr.info/english/public/2004.html], as of November 30, 2004.

[26] "Plenary Meeting of the Missile Technology Control Regime, Seoul, 6-8 October 2004," Press release by [http://www.mtcr.info].

countries had subscribed to the ICOC.[27] The ICOC is not a treaty but instead a set of "fundamental behavioral norms and a framework for cooperation to address missile proliferation." It focuses on the demand side of proliferation, as a complement to the supply side oriented MTCR. It seeks to achieve transparency by using confidence building measures, such as information transfer on ballistic missile programs. It also calls for pre-launch notification of ballistic missile flight tests.

The ICOC intends to establish a formal standing organization to collect information and oversee the development of its confidence building measures and information control mechanisms. Supporters have hailed it as another important step in the eventual creation of a legally binding treaty and some members have suggested that the ICOC come under auspices of the United Nations. Critics question its effectiveness, citing its lack of a verification regime and penalties, and lack of incentives - features more common in a treaty and not in a voluntary code.

Recent Significant Activities. The ICOC held its 2004 Plenary in Vienna, Austria in November 2004 and details from this meeting have not yet been released to the public. On October 27, 2004, the United Nations (U.N.) First Committee on Disarmament and International Security approved a draft resolution on the ICOC (referred to as the Hague Code of Conduct) and the U.N. General Assembly stated that they would "welcome the adoption of the Hague Code of Conduct against Ballistic Missile Proliferation" and invited "all states to subscribe to it."[28]

Issues for Congress.

What are the prospects for gaining Chinese MTCR membership? If China accedes to the MTCR, could this be used to help persuade other missile proliferating nations to join the MTCR?

What actions could be taken on an international level to address the issues of transit and transhipment of missile technology and missile export-related activities of intermediaries and front companies?

Will the ICOC become a viable nonproliferation tool or are its provisions so weak and ineffective as to preclude its further development?

For Further Reading

Missile Technology Control Regime (MTCR) and International Code of Conduct Against Ballistic Missile Proliferation (ICOC): Background and Issues for Congress. CRS Report RL31848.

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[27] "International Code of Conduct Against Ballistic Missile Proliferation," Fact Sheet - U.S. State Department Bureau of Nonproliferation, January 6, 2004.

[28] "Hague Code of Conduct Against Ballistic Missile Proliferation Welcomed in Text Approved by Disarmament Committee," U.N. Press Release GA/DIS/3286, October 27, 2004.

The Wassenaar Arrangement

Introduction. In July 1996, 33 nations approved the Wassenaar Arrangement on export controls for conventional arms and dual-use goods and technologies. Dual-use goods are those commodities, processes, or technologies used primarily for civilian purposes which can also be used to develop or enhance the capabilities of military equipment. This agreement replaces the Coordinating Committee For Multilateral Export Controls (CoCom) — the Cold War organization that controlled sensitive exports of technologies to Communist nations.

Background. The Wassenaar Arrangement is a multilateral accord designed "to contribute to regional and international security and stability, by promoting transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies, thus preventing destabilizing accumulations." This group has a broader membership but smaller lists of controlled goods than did CoCom. Under Wassenaar, each national government regulates its own exports, whereas under CoCom, any member could disapprove the export by any other member of a controlled item to a proscribed destination. The Arrangement complements the existing export control regimes for nuclear, chemical, and biological weapons and their delivery systems, and other transparency mechanisms such as the UN Register.

Thirty-three nations approved the Arrangement's "Initial Elements" in July 1996.[29] A small Secretariat was established in Vienna and Participating States began reporting transfers in the fall of 1996. In 1999, U.S. officials campaigned to strengthen the arrangement and make exports more transparent. The effort was driven in part by recommendations of the congressional Select Committee on U.S. National Security and Military/Commercial Concerns with the People's Republic of China (the Cox Committee) to enhance multilateral export controls. At the December Plenary session the U.S. team proposed reporting on specific exports rather than aggregated reporting, reporting on exports of all listed items — not just the sensitive and very sensitive items, extensive pre-export reporting, and a "no undercut rule" which would ban exports by a Wassenaar partner of goods already denied by another partner. Russian and Ukranian delegates reportedly blocked these reforms and the primary accomplishment was a joint statement of the importance of strong enforcement based on national laws.

Membership. Member nations of the Wassenaar Arrangement that produce or export arms or industrial equipment must adhere to major existing nonproliferation regimes and treaties, and adhere to effective export controls. Current participants have national policies banning arms and related exports to Iran, Libya, Iraq, and

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[29] The Participating States currently are: Argentina, Australia, Austria, Belgium, Bulgaria, Canada, Croatia, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, the Russian Federation, the Slovak Republic, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom, and the United States. South Africa was admitted as the 40th Participating State of the Wassenaar Arrangement in December 2005.

North Korea; the United States also insists that prospective new members ban such exports.[30] Initially the United States was unwilling to include Russia, but other members of CoCom were unwilling to proceed without Russia. In June 1995, Russia agreed not to make any new weapons contracts with Iran and not to sell it nuclear reprocessing equipment, clearing it for membership in Wassenaar. In November 2000, Russia announced it would end a bilateral agreement with the United States regarding arms sales to Iran. In spite of this action, Russia remains a member of Wassenaar. On December 6, 2000, the Russian Defense Minister noted that Russia would only sell "defensive" weapons to Iran in the future. Participants still doubt that other former Soviet republics are willing or capable of adopting the policies and procedures of the Wassenaar Arrangement. China has not been invited to join Wassenaar because of concerns regarding its weapons exports to Iran and Pakistan, and other shortcomings in its export control system.

Target Countries. The Arrangement is not, under its charter, directed against any state or alliance, but is designed "to enhance cooperation to prevent the acquisition of armaments and sensitive dual-use items for military end-uses, if the situation in a region or the behavior of a particular state is, or becomes, a cause for serious concern...."[31] The Participating States had generally agreed that significant transfers to the militaries of Iran, Iraq, Libya, or North Korea could threaten international or regional stability. Based on discussions at the December 1996 plenary session, Secretary Davis said no Participating State transfers arms or ammunition to Afghanistan in keeping with a UN Security Council resolution. In December 2000, the UN Security Council passed a resolution that prohibits all countries from providing weapons or military assistance to the Taliban.

Materials To Be Controlled. Participating States agree to control exports and retransfers of items on a common Munitions List based on the categories of major conventional weapons used for the Conventional Forces-Europe Treaty and the United Nations Arms Register, and more than 100 items on a List of Dual-Use Goods and Technologies. The decision to allow or deny transfer of an item is the sole responsibility of each Participating State. The United States would like to establish detailed reporting requirements and restraint on all arms exports, including various types of missiles and advanced military equipment not specified on the current lists. The Administration modified the Export Administration Regulations to include all items on the Wassenaar Dual-Use list.

Organization and Operations. Twice a year Participating States report all **transfers or licenses issued** for sensitive dual-use goods or technology and all **deliveries** of items on the Munitions List. The data exchange identifies the supplier, recipient, and items transferred. During negotiations, only the United States favored prior notification of transfers, which would have allowed time to discuss the

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[30] Lynn Davis Carnegie statement, January 23, 1996; Washington Post, September 20, 1995, p. A15; Defense News, September 25-October 1, 1995, p. 8.

[31] The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, Initial Elements, as adopted by the Plenary of 11-12 July 1996.

implications of planned transactions. More intensive consultations and information sharing were envisioned among six major weapons suppliers: the United States, the United Kingdom, France, Russia, Germany, and Italy.

Participating States also report **denials** of licenses to transfer items on the Dual-Use list to non-member states. The Arrangement does not prohibit a participating country from making an export that has been denied by another participant (this practice is called "undercutting"). But participants are required to report soon after they approve a license for an export of dual-use goods that are essentially identical to those that have been denied by another participant during the previous three years.

During plenary and working group discussions, Participating States voluntarily share information on potential threats to peace and stability and examine dangerous acquisition trends. The participants review the scope of reporting and coordinating national control policies and work on further guidelines and procedures. Twice a year, the group reviews the Munitions List with a view to extending information and notifications.

Recent Actions. On December 1, 2000, at the plenary meeting, the members adopted significant controls on shoulder-fired anti-aircraft missiles commonly known as MANPADS (Man-Portable Air Defense Systems). Under the terms of the agreement, before approving the transfer of MANPADS, a Wassenaar state will meet specific criteria, including securing end-use and non-transfer guarantees from the recipient government. The transferring state will also establish whether a proposed recipient is both able and willing to implement effective security and accountability measures for the handling, transportation, storage, and use of these weapons to prevent loss, theft, compromise, diversion, or unauthorized use of them. Also at the December 1, 2000 meeting, the Wassenaar states affirmed the importance of members having effective, transparent and national law-based enforcement systems, and agreed to a list of 18 non-binding enforcement "best practices," deemed to be the most successful enforcement policies and techniques utilized in the various Wassenaar Arrangement countries.

At the December 7, 2001 plenary meeting, the Wassenaar states added an explicit statement to paragraph 5of Part I of the Initial Elements section of the Arrangement noting that preventing acquisition of conventional weapons and dual-use items by terrorist groups and organizations was a goal of the Arrangement, and that concrete steps to effect that end would be taken. At the December 11-12, 2002 plenary meeting, the Wassenaar states agreed to review existing guidelines regarding MANPADS to assess the adequacy of these guidelines in preventing terrorist use of such systems. In addition members agreed to detail "best practice" guidelines and criteria for controlling the exports of small arms and light weapons. At the December 10-12, 2003 plenary meeting, the Wassenaar states agreed to tighten existing controls on MANPADS to prevent their acquisition or diversion to terrorists. Agreement was also reached to enhance transparency regarding transfers of small arms and light weapons, and to impose strict controls on brokers of conventional arms. At the plenary meeting of December 8-9, 2004, the members reiterated priority efforts to prevent the acquisition of conventional arms and dual-use goods and

technologies by terrorist groups by amending the list of items on the control lists. In December 2005, additional amendments were approved to the control lists, and during 2005, an indicative list of end-use assurances that Participating Members require as a condition of export of controlled items was agreed to.[32]

Issues for Congress. Members of Congress have expressed concern about several of the issues discussed above, such as which nations who are members of Wassenaar, the nations that are trying to obtain dangerous quantities of items monitored under the Arrangement, the lists of materials to be controlled, and organization and operational procedures. The lack of pre-export reporting and consultations, the absence of a no-undercut rule or any other means for the group to ban any export to any destination are cited as severe weaknesses in any multilateral export control regime. In particular, Members may question whether Wassenaar, with its larger number of participants and smaller list of controlled technologies, is the most effective arrangement that is possible in the post-CoCom era.

Although some progress has been made in getting Wassenaar states to subscribe to general principles regarding strong enforcement mechanisms, Members of Congress may question whether other participants will be as diligent as the United States in controlling exports of dual-use technologies. Most countries place fewer restrictions on exports than does the United States. The Arrangement may support U.S. interests by encouraging other suppliers to forgo irresponsible exports that they might consider politically or financially beneficial. On the other hand, if the other participants do not restrain their exports of weapons and dual-use items to an extent comparable to the United States, U.S. businesses may be placed at a disadvantage in world markets and the U.S. trade balance may be affected negatively.

It is not clear whether the United States can induce acceptance of higher standards by other Participating States by appealing to common security interests, by rewarding cooperative behavior, or by penalizing nations that continue to transfer weapons and technology to aggressive nations in regions of tension. Congress may examine various legislative and oversight mechanisms that could contribute to effective and fair multilateral export controls, including renewal and/or revision of the expired Export Administration Act of 1979. This could enable Congress to shape policy in this area.

For Further Reading

Military Technology and Conventional Weapons Export Controls: the Wassenaar Arrangement. CRS Report RS20517.
The Export Administration Act: Evolution, Provisions, and Debate, CRS Report RL31832.

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[32] For details of the Wassenaar Arrangement's agreements on these matters see the Wassenaar Arrangement website at [http://www.wassenaar.org].

Proliferation Security Initiative (PSI)

Introduction. President Bush announced the Proliferation Security Initiative (PSI) on May 31, 2003. This Initiative is primarily a diplomatic tool that the United States has used to gain support for interdicting shipments of weapons of mass destruction-related (WMD) equipment and materials. Through the PSI, the Bush Administration seeks to "create a web of counterproliferation partnerships through which proliferators will have difficulty carrying out their trade in WMD and missile-related technology." The states involved in PSI have agreed to review their national legal authorities for interdiction, provide consent for other states to board and search their own flag vessels, and conclude ship-boarding agreements. The Proliferation Security Initiative has no budget, no formal offices supporting it, no international secretariat, and no formal mechanism for measuring its effectiveness (like a database of cases). To many, these attributes are positive, allowing the United States to respond swiftly to changing developments. Others question whether the international community can sustain this effort over the longer term.

Background. Sixteen nations have pledged their cooperation in interdicting shipments of WMD materials. These states form the "core members" of the PSI and agreed in Paris in 2003 to adopt a set of interdiction principles. The Bush Administration states that 60 nations support the PSI, although it is not clear what that support entails, beyond limited participation in operational exercises. Although the Bush administration stresses the global reach of PSI, officials have noted that Iran and North Korean activities are a focus of particular concern. Thus, it may be important to win the support of states that may lie along established sea, air, and land transportation routes to and from those states, as well as states that may manufacture key materials and equipment. *The 9/11 Commission Report* recommended that PSI be expanded, but was not specific about how to focus that expansion or how to implement that expansion.

Bush administration officials have stressed that PSI is an activity, not an organization. It seeks to develop, according to key officials, "new means to disrupt WMD trafficking at sea, in the air, and on land. However, very few new means of disruption appear to have been developed so far, although old means may be applied more rigorously to improve disruption. For example, key WMD supplier states have cooperated for many years with the United States in interdicting shipments of WMD-related items, whether through sharing intelligence information or the actual boarding of ships and airplanes. In particular, the United States is pursuing vigorously the conclusion of ship-boarding agreements with key states that have high volumes of international shipping. So far, the United States has signed agreements with Panama, Liberia, and the Marshall Islands.

In February 2004, President Bush proposed expanding PSI to address more than shipments and transfers, including shutting down facilities, seizing materials and freezing assets. Administration officials have not yet shared how they plan to implement this expansion. To some observers, it is difficult to imagine how national authorities could shut down facilities, seize materials and freeze assets, particularly

if the material and equipment in question is dual-use (which would normally place the burden on the export destination).

On April 28, 2004, the UN Security Council adopted UNSC Resolution 1540, which required all states to "criminalize proliferation, enact strict export controls and secure all sensitive materials within their borders. UNSCR 1540 called on states to enforce effective domestic controls over WMD and WMD-related materials in production, use, storage, and transport; to maintain effective border controls, and to develop national export and trans-shipment controls over such items, all of which should help interdiction efforts. The resolution did not, however, provide any enforcement authority, nor did it specifically mention interdiction. To date, about one-third of all states have reported to the UN on their efforts to strengthen defenses against WMD trafficking.

Issues for Congress. Since PSI is an activity rather than an organization, and has no budget or internal U.S. government organization, it may be difficult for Congress to track PSI's progress. There may be intelligence resource issues of interest to Congress. For example, is intelligence information good enough for effective implementation and are there intelligence-sharing requirements with non-NATO allies? Also, how is PSI coordinated with other federal interdiction-related programs, like export control assistance? Congress may wish to consider, again, whether more nonproliferation policy coordination may be required at higher levels for such far-reaching programs. In the first session of the 109th Congress, the Foreign Operations Appropriations Act (H.R. 3057) provided that NADR funds could be used for PSI exercises; H.R. 665 allocated $50 million but was not reported out of committee. Three other bills expressed support for PSI — the National Defense Authorization (Section 1209), the Foreign Affairs Authorization (H.R. 2601) and The Non-Proliferation Treaty Enhancement Resolution of 2005 (H. Con Res 1333).

For Further Reading

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Challenges to the Nonproliferation Regimes

China: Weapons Proliferation Issues

National Security Concerns. Congress has long been concerned about whether U.S. policy advances the national interest in reducing the role of the People's Republic of China (PRC) in the proliferation of weapons of mass destruction (WMD) and missiles that could deliver them. Recipients of China's technology reportedly include Pakistan and countries that the State Department says support terrorism, such as Iran and North Korea. Congress also has concerns about whether the President has obtained China's effective cooperation in the multilateral efforts to stop Iran's and North Korea's nuclear weapon programs.

Partial Cooperation and Persistent Concerns. Since 1991, China has taken some steps to mollify U.S. concerns about its role in weapons proliferation. Nonetheless, supplies from China have aggravated trends that result in ambiguous technical aid, more indigenous capabilities, longer range missiles, and secondary (retransferred) proliferation. As the Director of Central Intelligence (DCI) has consistently reported to Congress, China remains a "key supplier" of weapons technology — particularly missile or chemical technology.

Issues in U.S. Policy. One fundamental set of policy issues concerns whether China shares U.S. interests in weapons nonproliferation or considers nonproliferation as one point of leverage in bilateral U.S.-PRC relations (namely, as concessions before summits). Is the PRC improving its record to match its nonproliferation promises, or does it reserve the option to proliferate to pursue certain goals, such as gaining leverage against the United States (e.g., on questions about Taiwan or missile defense)? Have Beijing's proliferation practices shifted from transfers of complete systems to transfers of technology that enhance the recipient countries' indigenous capabilities and promote secondary proliferation (subsequent proliferation by those recipients to other countries)? Furthermore, is the PRC government unwilling or too weak to control its companies (including state-owned enterprises) that sell technology, in spite of repeated U.S. sanctions and new PRC export controls? A second set of issues concerns the best mix of policy tools to advance U.S. nonproliferation goals and international norms. These include questions about the priority of nonproliferation in U.S. policy toward China. There are also questions about the role and effectiveness of diplomatic engagement, economic sanctions, and military measures.

Policy issues in seeking PRC cooperation have concerned summits, sanctions, and satellite exports. On November 21, 2000, the Clinton Administration agreed to waive missile proliferation sanctions, resume processing licenses to export satellites to China, and discuss an extension of the bilateral space launch agreement, in return for another promise from China on missile nonproliferation. However, PRC proliferation activities again raised questions about sanctions. On 15 occasions, from June 2001 to December 2005, the Bush Administration imposed sanctions under various laws on PRC "entities" (not the government) for transfers (related to ballistic missiles, chemical weapons, and cruise missiles) to Pakistan, Iran, or another

country. Among those sanctions, on September 1, 2001, the Administration imposed missile proliferation sanctions that effectively denied satellite exports (for two years), after a PRC company transferred technology to Pakistan, despite the November 2000 promise. On September 19, 2003, the State Department imposed more missile proliferation sanctions on NORINCO, a defense industrial firm, denying satellite exports to China for two more years. However, the State Department extended a waiver for the ban on imports of other PRC government products related to missiles, space systems, electronics, and military aircraft.

Critics say that President Bush has not forcefully pressed China's leaders to be more helpful in weapons nonproliferation. The Administration has imposed repeated sanctions on PRC "entities," excluding the PRC government. China has not joined the U.S.-led Proliferation Security Initiative (PSI). Since October 2002, President Bush has relied on China's cooperation to achieve the dismantlement of North Korea's nuclear weapons and nuclear programs. China sponsored a joint statement of the Six-Party Talks on September 19, 2005, but results remained elusive. The House International Relations Committee held a hearing on May 18, 2004, to question the Administration's support for China's membership in the Nuclear Suppliers Group (NSG), despite China's continuing nuclear cooperation with Pakistan which bears watching. There are also questions about whether China has shared any intelligence on Pakistani scientist A.Q. Khan's nuclear trade in Iran, North Korea, and Libya. China also has opposed a referral of Iran's nuclear weapons programs to the U.N. Security Council for consideration.

For Further Reading

China and Proliferation of Weapons of Mass Destruction and Missiles: Policy Issues, CRS Report RL31555.

China: Possible Missile Technology Transfers from U.S. Satellite Export Policy — Actions and Chronology, CRS Report 98-485.

U.S.-China Nuclear Cooperation Agreement, CRS Report RL33192.

North Korea

Introduction. In early 2003, North Korea withdrew from the Nuclear Non-Proliferation Treaty (NPT) and restarted nuclear the installations that it had shut down under the U.S.-North Korean Agreed Framework of 1994. The facilities include a five megawatt nuclear reactor and a plutonium reprocessing plant used to convert reactor fuel rods into nuclear weapons-grade plutonium. North Korea removed 8,000 reactor fuel rods from a storage pond where the rods had been kept since 1994, and it subsequently claimed that it had reprocessed the rods into weapons-grade plutonium. Such reprocessing would give North Korea enough plutonium for approximately six atomic bombs, according to experts. North Korea also shut down the five megawatt reactor for several weeks in April 2005 after two years of operation and said it had removed another 8,000 fuel rods for reprocessing. Experts believe that, in the two years of operation, the reactor could produce enough fuel rods for 12 kilograms of weapons-grade plutonium annually, sufficient for two atomic bombs. In January 2004, North Korea demonstrated to Sigfried Hecker, former director of the Los Alamos Nuclear Laboratories, the capability to reprocess spent nuclear fuel into weapons-grade plutonium.

In February 2005, the North Korean government officially announced that it had nuclear weapons. U.S. intelligence estimates reportedly concluded that North Korea had reprocessed most and likely all of the fuel rods and probably had produced several new atomic bombs; these would be in addition to the two atomic weapons that the CIA has estimated since 2001 that North Korea already possesses. Moreover, the CIA reportedly estimated in 2003 that North Korea had made major progress in developing nuclear warheads that could be mounted on its missiles and in developing a new, longer-range intermediate missile and an intercontinental ballistic missile. In late 2005, North Korea asserted that it would renew construction of a 50 megawatt reactor, whose construction was halted in 1994 under the Agreed Framework. Construction activity was reported at the site. According to Dr. Hecker, when operational, this reactor could produce enough plutonium for ten atomic bombs annually.

Background: Collapse of the U.S.-North Korean Agreed Framework. The developments of 2003 brought about a collapse of the 1994 Agreed Framework. The Agreed Framework obligated North Korea to suspend operations at its nuclear facilities and allow the secure storage of the 8,000 nuclear fuel rods removed from the five megawatt reactor. The United States organized an international consortium, KEDO, which was to construct two light water nuclear reactors (LWRs) and provide to North Korea 500,000 tons of heavy oil annually until the construction of the first light water reactor was completed. Reportedly in 1996, North Korea began a secret deal with Pakistan under which Pakistan supplied North Korea with the technology for a secret highly enriched uranium (HEU) program (another process used in producing nuclear weapons). U.S. intelligence agencies began to acquire information on the secret HEU program in late 1998. North Korea accelerated overseas procurements of equipment for the HEU program in 2000 and 2001. In October 2002, the Bush Administration claimed that North Korean officials had admitted the secret HEU program to Assistant Secretary of State, James Kelly. North Korea

denied this and continues to deny the existence of an HEU program. The Bush Administration ended U.S. obligations in the Agreed Framework. Heavy oil shipments ended in December 2002. Construction of the light water reactors was suspended in November 2003 and again in November 2004, and the project was terminated in November 2005.

Six Party Talks. The demise of the Agreed Framework and North Korea's re-starting of its nuclear facilities led the Bush Administration to propose multilateral negotiations. Organized by China, six party talks began in August 2003. The Bush Administration's initial strategy was to eschew bilateral negotiations with North Korea at six party meetings; eschew making any comprehensive settlement proposal until North Korea agreed to the "complete, verifiable, irreversible, dismantlement" of all nuclear programs (CVID); and rely on China to exert pressure on North Korea to accept CVID. North Korea made two proposals: a U.S. security guarantee against a U.S. use of military force and a freeze of its plutonium nuclear facilities with dismantlement put off into the indefinite future following the deliverance of specified concessions and benefits by the United States. The Administration soon found itself under criticisms from China, South Korea, and Russia over its approach, including expressions of skepticism from Beijing and Moscow over the U.S. claim that North Korea had a secret HEU program and expressions of support for Pyongyang's "reward for freeze" proposal.

Consequently, in June 2004, the Bush Administration put forth its first major proposal. It called for a three month freeze of North Korea's nuclear facilities followed by a relatively speedy dismantlement of both the plutonium and HEU programs, subject to verification. North Korea would receive oil shipments from South Korea and Japan, and other benefits to North Korea would be negotiated once dismantlement was firmly underway. North Korea denounced the proposal in late July 2004 and instituted a boycott of the talks that lasted until July 2005. It issued its official claim of possessing nuclear weapons in February 2005; and in March 2005, it demanded that the United States agree to a "regional disarmament agenda" that emphasized major reductions of U.S. military forces in and around the Korean peninsula.

North Korea ended its boycott of the talks in July 2005. At six party meetings in July-August, September, and November 2005, Assistant Secretary of State Christopher Hill altered the Administration's strategy. He negotiated at length with the North Koreans, reportedly offered an exchange of diplomatic liaison offices, and amended the U.S. proposal of June 2004 to include a South Korean offer of 2,000 megawatts of electricity to North Korea annually — to be implemented simultaneously with North Korean dismantlement of nuclear programs over an estimated three year period immediately after a settlement agreement was signed. North Korea, however, undermined Hill's initiatives by demanding that the United States facilitate the construction of light water nuclear reactors (LWRs) in North Korea and asserting that dismantlement would take place only after the LWRs were constructed. Given estimates that construction of LWRs in North Korea would take 10-20 years, North Korea thus specified a huge time frame gap between its time frame for dismantlement and the U.S. time frame of three years immediately

following a settlement. A statement of September 19, 2005, by the six parties did not alter this gap, despite North Korea's commitment in the statement to abandon nuclear programs and rejoin the NPT at an early date. North Korea announced in November 2005 a new boycott of the talks, citing the U.S. initiation of sanctions against foreign banks that served as conduits for North Korean counterfeit U.S. 100 dollar bills.

Issues for Congress. With the collapse of the Agreed Framework, the Bush Administration has ceased requesting appropriations for KEDO. Consequently, it will not be faced with any appropriations requests related to North Korea's nuclear programs. However, the 109th Congress likely will continue to monitor the North Korean nuclear issue, closely, with an eye to the progress of the six-party talks.

For Further Reading

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India

Introduction. The United States has been pursuing closer relations with India for the past several years, embarking on the Next Steps in Strategic Partnership initiative in 2004. In 2005, both sides committed to bringing the partnership to a new and higher level, with the July 18th Joint Statement by President Bush and Prime Minister Manmohan Singh. With this one agreement, India moved from being a target of nonproliferation policy to being an ally in U.S. nonproliferation efforts, according to the Bush administration. However, this transformation will require significant changes in U.S. law, which the Bush administration is currently seeking.

Background. India, which has never joined the Nuclear Nonproliferation Treaty (NPT), exploded a peaceful nuclear device in 1974 and several nuclear explosive devices in 1998. After the 1974 test, the United States and others realized that peaceful nuclear cooperation could be diverted to weapons and that safeguarding nuclear exports was not enough. India, despite assurances that its Canadian-supplied reactor (CIRUS) and U.S.-supplied heavy water would be used for peaceful uses only, used plutonium from the CIRUS reactor for the 1974 test. The United States responded by creating the Nuclear Suppliers Group. Congress responded by passing the 1978 Nuclear Nonproliferation Act (P.L. 95-242), which imposed tough new requirements for U.S. nuclear exports to non-nuclear-weapon states — full-scope safeguards and termination of exports if such a state detonates a nuclear explosive device or engages in activities related to acquiring or manufacturing nuclear weapons, among other things. The United States, which then was engaged in nuclear cooperation with India, cut off exports in 1980.

On July 18, 2005, President Bush announced a global partnership with India to promote stability, democracy, prosperity and peace. The desire to transform relations with India, according to Administration officials, is "founded upon a strategic vision that transcends even today's most pressing security concerns." President Bush said he would "work to achieve full civil nuclear energy cooperation with India" and would "also seek agreement from Congress to adjust U.S. laws and policies."

India, for its part, made several nonproliferation commitments, some of which it describes as restating existing commitments, and some new. These include: identifying and separating its civilian and military nuclear facilities and programs; declaring its civilian facilities to the International Atomic Energy Agency (IAEA) and voluntarily placing such facilities under IAEA safeguards; signing an Additional Protocol for civilian facilities; continuing its unilateral nuclear test moratorium; working with the United States to conclude a Fissile Material Cut Off Treaty (FMCT); refraining from transferring enrichment and reprocessing technologies to states that do not have them, as well as support international efforts to limit their spread; and securing its nuclear materials and technology through comprehensive export control legislation and through harmonization and adherence to Missile Technology Control Regime (MTCR) and NSG guidelines.

Administration officials have described the agreement as a "win" for nonproliferation because it would bring India into the nonproliferation mainstream.

Nonproliferation experts have suggested that potential costs to U.S. and global nonproliferation policy of bringing India into the nonproliferation mainstream in this manner may far exceed the benefits. For example, at a time when the United States has called for all states to strengthen their domestic export control laws and for tighter multilateral controls, U.S. nuclear cooperation with India would require loosening its own nuclear export legislation, as well as creating a Nuclear Suppliers Group exception. It would reverse nearly three decades of U.S. nonproliferation policy and practice towards India. Some believe this agreement undercuts the basic bargain of the NPT, could undermine hard-won restrictions on nuclear supply, and could prompt some suppliers, like China, to justify supplying other states outside the NPT regime, like Pakistan. In addition, some have raised the question of whether the United States is implicitly aiding the Indian nuclear weapons program by not insisting on a fissile material production cutoff and at the same time, creating the possibility for India to import safeguarded uranium, freeing up its own domestic reserves for use in the nuclear arsenal.

Issues for Congress. India does not meet nonproliferation criteria for nuclear cooperation under current U.S. law (Atomic Energy Act; P.L. 95-242; 42 U.S.C. 2153 et seq.). As such, the President would have to exempt the agreement from those nonproliferation criteria and submit nuclear exports for congressional review on an annual basis. The President would also have to determine, subject to congressional review, that continued exports were necessary, even though India has tested nuclear weapons and continues its nuclear weapons program. Congress would have to approve such an agreement with a joint resolution. The Administration, which will probably propose legislation to Congress in 2006, reportedly prefers to create an exception for India to existing provisions of law through stand-alone legislation.

Congress held four hearings in late 2005 on the global partnership. Some issues raised at those hearings included India's relationship with Iran and its support for referring Iran to the U.N. Security Council, whether nuclear cooperation is an appropriate "carrot" for a much broader strategic relationship, and strategies for strengthening the nonproliferation benefits of such an agreement. Fundamentally, Congress will need to consider if it wants to maintain the same oversight responsibilities provided for by existing law under any formulation of law that allows nuclear cooperation with India to proceed.

Further Reading

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Pakistan

Introduction. In May 1998, Pakistan claimed to have conducted six underground nuclear tests. This occurred weeks after India conducted a similar series of tests. These actions created a global storm of criticism and marked a serious setback for U.S. nuclear nonproliferation efforts in South Asia. Within days, President Clinton imposed economic and military sanctions on both Pakistan and India. After the September 2001 terrorist attacks, relations with India and, especially, Pakistan improved dramatically, with both countries offering strong support for the U.S.-led anti-terror campaign. Pakistan, given its strategic location and formerly close ties to the Taliban regime in Afghanistan, quickly assumed a role as a front line state in the coalition. Islamabad has since been allocated about $3.4 billion in direct U.S. assistance, nearly half of this ($1.5 billion) in the form of security-related aid.

Serious concerns about nuclear proliferation and regional stability remain. Pakistan-India relations continue to be unsettled, although a peace initiative that began in April 2003 has normalized their interaction. Both countries have active nuclear weapons and ballistic missile programs, and U.S. policy makers remain cognizant of the potential for a fourth Pakistan-India war to escalate in dangerous ways, but recent years have seen a shift of emphasis to the implications of "onward" as opposed to vertical proliferation in the region. U.S. analysts consider the arms race between Pakistan and India as posing perhaps the most likely prospect for the future use of nuclear weapons by states. Pakistan probably gained a nuclear weapons capability during the 1980s and, with a program focused on enriched uranium, may be capable of building 50-100 nuclear weapons. The Pakistan air force possesses aircraft capable of delivering nuclear bombs and the army possesses short- and medium-range missiles (allegedly acquired from China and North Korea) which are assumed capable of delivering nuclear warheads over significant distances. A growing Pakistani disadvantage in conventional weapons capabilities vis-a-vis India has some analysts concerned that crisis stability in South Asia is fragile, given Pakistan's increasing reliance on its nuclear deterrent.

The A.Q. Khan Smuggling Network. Concerns about proliferation grew exponentially with revelations in early 2004 that senior metallurgist and so-called "father" of Pakistan's nuclear weapons program A.Q. Khan had provided Libya, Iran, and North Korea with nuclear weapons technology, equipment, materials, and even a weapons design. It is not known whether the Pakistani government and/or military was aware of and perhaps even complicit in Khan's network. The international community is still investigating the extent of now confirmed transfers to Iran. (In February 2005, Pakistani officials conceded that such transfers had occurred; one month later, they acknowledged that sales included sophisticated centrifuges, and Pakistan later sent parts of older centrifuges for inspection by international investigators.) U.S. officials long asserted that Khan provided uranium enrichment materials and equipment to North Korea in the late 1990s. In August 2005, Pakistani President Musharraf conceded that centrifuges and their designs had indeed been transferred to Pyongyang. Some reports suggest that Khan's network may also have sold nuclear technology to Saudi Arabia and other Arab countries.

The Bush administration has not imposed sanctions on Pakistan and has not pushed for direct access to A.Q. Khan. To date, Pakistan has refused to allow any direct access to Khan by U.S. or U.N. investigators. The State Department claims that it has had "good cooperation" from Pakistan on this issue and that it sees no connections between Khan's network and the leadership of Pakistan. In August 2005, an expert panel led by former 9/11 Commission Vice Chairman Lee Hamilton criticized Pakistan for failing to provide a full accounting of the Khan network's illicit activities. Some analysts have been critical of the U.S. government for "turning a blind eye" to evidence of such activities during the 1980s as Pakistan played the role of frontline U.S. ally in efforts to push the Soviet army out of Afghanistan. Others have asserted that the United States took too long to act after the Khan network's smuggling activities became clearer in 2000, perhaps worsening the extent of the damage caused.

Past U.S. Nonproliferation Efforts. U.S. concern about nuclear proliferation in South Asia dates from India's 1974 nuclear test. Legislation relating to Pakistani nuclear and missile programs is extensive, complex, and sometimes overlapping. Prior to 1998, the United States cut off its aid to Pakistan twice — in 1979 and 1990 — under the Foreign Assistance Act (now contained in the AECA), because of Pakistan's covert uranium enrichment program. Although the United States restored aid after the Soviet invasion of Afghanistan in December 1979, Congress imposed a presidential certification requirement under the Pressler amendment in 1985. In October 1990, President Bush suspended aid to Pakistan because he could not make the necessary certification that Pakistan did not possess a nuclear explosive device.

Negotiations: Objectives and Status. During the 1990s, the United States focus in South Asia sought to minimize damage to the nonproliferation regime, and prevent escalation of an arms and/or missile race. The Clinton Administration set forward five "benchmarks" for India and Pakistan based on the contents of UN Security Council Res. 1172 (June 1998) which condemned the two countries' nuclear tests. However, the Bush Administration makes no reference to the benchmark framework. Pakistan has not signed the Comprehensive Test Ban Treaty (CTBT) and appears to be continuing its production of fissile materials. The status of weaponization and deployment is unclear, although there are indications that this is occurring at a slow, but more or less steady pace. Early optimism on export controls dissipated as it became evident that Pakistan was the source of significant "onward" proliferation of WMD materials and/or technologies to third parties.

Over the past decade, the United States has used export bans and sanctions to block Pakistani access to technology for missiles that could deliver nuclear weapons. In March 2003, the United States imposed two-year penalties on the Khan Research Laboratories, banning all U.S. trade with that entity for its having received missile technology from North Korea. In recent unclassified reports to Congress, the Central Intelligence Agency claimed that, during 2003, Chinese entities continued to work with Pakistan on ballistic missile-related projects. It also reported that "Iran's nuclear program received significant assistance in the past from the proliferation network headed by Pakistani scientist A.Q. Khan" and that the same network "had

provided Libya with designs for Pakistan's older [uranium enrichment] centrifuges, as well as designs for more advanced and efficient models, and components."

Pakistan is a key member of the U.S.-led counterterror coalition and, under the Bush Administration, U.S. nonproliferation efforts in South Asia have been less vigorous than they were following the 1998 nuclear weapons tests. Assistant Secretary of State for South Asia Christina Rocca stated in March 2003 that the United States is taking a "pragmatic approach" that seeks to have Pakistan and India "exercise restraint" with regard to the proliferation of strategic arsenals. Some observers have called for a new approach, based on the potential threat of terrorist access to WMD, that would provide technical assistance in enhancing the security of any WMD materials in South. For example, Section 1308 of the National Defense Authorization Act, 2004 (P.L. 108-136) authorizes use of Cooperative Threat Reduction funds for proliferation threat reduction projects or activities outside the states of the former Soviet Union, potentially including Pakistan.

Congressional Action. In September 2001, President Bush issued a final determination removing remaining sanctions on Pakistan (and India) resulting from its 1998 nuclear tests. At the end of 2005, 20 Pakistani entities (excluding subsidiaries) remain on the Commerce Department's list of entities for which export licenses are required. A section of the Foreign Relations Authorization Act, 2002 and 2003 (P.L. 107-228) outlined desired nonproliferation objectives to be achieved in South Asia. It also stated that it shall be U.S. policy consistent with NPT obligations to encourage and, where appropriate, work with the governments of Pakistan and India to achieve the establishment of "modern, effective systems to protect and secure nuclear devices and materiel from unauthorized use, accidental employment, or theft." Section 2236 of the Foreign Relations Authorization Act, 2006 and 2007 (S. 600) calls for consolidation of reports on nonproliferation in South Asia and would require a report to Congress on progress toward relevant U.S. nonproliferation objectives by September 30, 2006.

Issues for Congress. Congress remains concerned about South Asia and the potential for conflict that could escalate into nuclear war. A concurrent concern is keeping Islamabad enlisted in the anti-terrorism coalition without destabilizing the Pakistani government and risking any compromise of Pakistan's nuclear weapons safety or security. Congress also remains interested in assuring that Pakistan refrain from any and all WMD-related proliferation activities, and about the potential for extremists to gain control over Pakistani nuclear weapons.

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Iraq

Introduction. Iraq's former regime had a long history of developing weapons of mass destruction (WMD) — nuclear, chemical, and biological weapons, and ballistic and cruise missiles to carry them. Inspections conducted in Iraq following the 1991 Gulf War verified Iraq's violation of the Nuclear Nonproliferation Treaty, the Biological Weapons Convention and the 1925 Geneva Protocol prohibiting the use of bacteriological or chemical weapons in warfare. The 2003 Operation Iraqi Freedom ostensibly was fought to finally rid Iraq of its WMD programs, after a four-year hiatus in international inspections. An Iraq Survey Group (ISG), set up after the fall of Saddam Hussein's regime to search for Iraq's purported WMD stockpiles and programs, issued a comprehensive report on September 30, 2004, that stated that no WMD stockpiles or active programs have been found, although the ISG has found indications that the former regime retained WMD ambitions.

Background. The September 11, 2001, attacks on the United States raised U.S. fears that terrorists or rogue regimes such as Iraq could conduct catastrophic attacks on the United States, possibly using WMD. Throughout 2002, President Bush stated that the United States would confront Iraq about its WMD programs and would, if necessary, use military action to change the Iraqi regime. While continuing to threaten military action if Iraq did not disarm, in September 2002 the President announced that the Administration had decided to give Iraq a "final opportunity" to disarm in cooperation with new U.N. weapons inspections. After several weeks of negotiation among the permanent members of the U.N. Security Council, the Council adopted Resolution 1441 (November 8, 2002), requiring Iraq to prepare a full declaration of all its WMD capabilities and to work with U.N. inspectors under a new and expanded mandate. Iraq, weighing the dangers to the regime of an all-out U.S. offensive, accepted the resolution; new inspections began on November 27, 2002.

Through mid-March 2003, the UN Monitoring, Verification, and Inspection Commission (UNMOVIC) and the International Atomic Energy Agency (IAEA) conducted more than 750 inspections at 550 sites. After 16 weeks, inspectors turned up some evidence of undeclared activities, but not enough to convince a majority of the UN Security Council members that military force was necessary. On March 19, 2003, however, U.S. and British forces led an offensive against Iraq to forcibly eliminate its WMD and change its regime. In June 2003, the ISG began post-Saddam operations in-country to hunt for WMD. On October 2, 2003, David Kay, the first chief of the hunt for WMD within the ISG, provided an interim assessment to the U.S. Congress. To many, Kay's report vindicated the Bush administration, because it "discovered dozens of WMD-related program activities and significant amounts of equipment that Iraq concealed from the United Nations during the inspections that began in late 2002." To many others, the ISG's failure to find any actual WMD stocks vindicated criticism of the war.'

The final report of the ISG, issued September 30, 2004, likewise provided support to both opponents and supporters of the decision to invade Iraq. The extensive report said that no actual WMD stockpiles or WMD manufacturing activities had been discovered in Iraq, but that interviews with captured Iraqi officials

and other Iraqis clearly indicated that the regime retained the capability to revive those programs should international scrutiny lapse.

Major WMD Questions. The evident lack of active WMD programs in Iraq raises questions about the fate of Iraq's known WMD programs. Beginning immediately after the 1991 Persian Gulf war, a UN Special Commission (UNSCOM) and the IAEA conducted seven years of inspections in Iraq and uncovered and dismantled a vast array of WMD and WMD delivery means, production facilities, equipment, and chemical and biological precursors. The two organizations also set up a long term monitoring regime for nuclear, chemical, biological, and missiles. In 1998, when inspectors left, there were significant unanswered questions about Iraq's WMD programs, mostly focusing on Iraq's inability to provide hard evidence of destruction of many munitions. In part, these unanswered questions, coupled with Iraq's history of deception, fueled speculation that many WMD stocks still existed, particularly chemical and biological weapons. For example, in 1998, the fate of about 31,600 chemical munitions, 550 mustard gas bombs, and 4,000 tons of chemical precursors, was unknown. The CIA assessed in October 2002 that, "More than 10 years after the Gulf war, gaps in Iraqi accounting and current production capabilities strongly suggest that Iraq maintains a stockpile of chemical agents, probably VX, sarin, cyclosarin, and mustard."

The ISG's searches focused particularly on biological weapons and biological agents. Iraq successfully hid its extensive program through four years of inspections (1991 to 1995) and many believed that it could also successfully produce significant stocks with little chance of detection from the period of 1998 to 2002. In 1998, UNSCOM argued that Iraq's biological declarations were neither credible nor verifiable. The October 2002 CIA assessment, cited above, said that all key aspects of Iraq's offensive biological program were active and most elements were larger and more advanced than before the Gulf war. This assessment was subsequently proven incorrect.

The ISG's September 30, 2004, assessment stated that it had uncovered information which suggested that Iraq, after 1996, had focused on maintaining small capabilities that could be activated for the production of BW agents. ISG said its teams had found information about research and development of BW-applicable organisms, the involvement of Iraqi Intelligence Service (IIS) in possible BW activities, and deliberate concealment activities.

In the ballistic missile area, the ISG concluded that "there were already well advanced, but undeclared, on-going activities that, if Operation Iraqi Freedom had not intervened, would have resulted in the production of missiles with ranges at least up to 1000 km, well in excess of the UN permitted range of 150 km."

In the nuclear area, the ISG concluded that, despite evidence of Saddam's continued ambition to acquire nuclear weapons, it did not uncover evidence that Iraq undertook significant post-1998 steps to actually build nuclear weapons or produce fissile material.

Nonproliferation in post-War Iraq. Recent press reports note that some Iraqi WMD scientists have left Iraq and that those remaining may be looking for gainful employment. Some reports suggest that Iraqi insurgents might be trying to enlist former regime WMD technicians to help make chemical weapons for use against U.S. and Iraqi security forces. A key issue will be how to manage this remaining potential proliferation threat. Iraqi scientists and technicians may benefit from the kinds of cooperative assistance that has been extended to Russia and the states of the former Soviet Union to prevent "brain drain." To this effect, the U.S. State Department has implemented a WMD Retraining Program for Iraqi scientists. In addition, many consider it necessary to create an export control system for Iraq to prevent sensitive materials from being exported. It is expected that the newly-elected Iraqi government will join the Chemical Weapons Convention, placing itself under the jurisdiction of the international inspection regime.

Issues for Congress. The 107th Congress backed the President's request for authorization to use military force by passing H.J.Res. 114 (P.L. 107-243), signed October 16, 2002. Although that resolution specified Iraq's compliance with all UN Security Council resolutions, the Bush Administration focused its case for war primarily on Iraq's WMD capabilities. The question of whether U.S. intelligence was accurate in certain cases has come under increasing criticism since the war ended, and British intelligence information has been similarly scrutinized. In particular, evidence of Iraq's alleged attempt to procure uranium from Niger have been shown to be based on false documents. The Senate Armed Services Committee and the Senate and House Permanent Select Committees on Intelligence have conducted inquiries and investigations into pre-war intelligence on Iraq, resulting in criticisms of the intelligence community for failing to question pre-existing assumptions about Iraq's WMD.

A broader issue that may come before Congress, particularly in light of the experience with proliferation in Iraq, Iran and North Korea, is whether international nonproliferation regimes should be overhauled, abandoned, or simply strengthened. Although the Bush Administration has emphasized new counterproliferation initiatives (preemption, interdiction, etc.) to combat WMD proliferation, a failure by the ISG to find WMD in Iraq may lead some to question the effectiveness and cost of pursuing military solutions to WMD threats. On the other hand, the ISG's conclusion that the former Iraqi regime intended to rebuild its WMD programs could lead some in Congress to conclude the opposite — that U.S. unilateral actions are far more effective than multilateral regimes.

For Further Reading

Iraq: Former Regime Weapons Programs, Human Rights Violations, and U.S. Policy, CRS Report RL32379
Iraq: U.S. Regime Change Efforts and Post-Saddam Governance, CRS Report RL31339
The Persian Gulf States: Issues for U.S. Policy, 2004, CRS Report RL31533

Iran

Introduction. Iran's attempts to acquire nuclear, chemical, and biological weapons and missiles to deliver them, along with its longtime support of terrorism, led President Bush in his January 29, 2002, State of the Union address to label Iran part of an "axis of evil," along with Iraq and North Korea. Taking advantage of both foreign assistance and the dual-use nature of WMD- and missile-related technologies, Iran has received help from entities in Russia, China, and North Korea for its missile program, and from entities in Russia and Pakistan for its nuclear program. Iran reportedly has sought assistance from Russian entities in the area of biological weapons development. In addition, the Central Intelligence Agency believes that Iran began pursuing missile-related deals in 2002 with several countries as a supplier of ballistic missiles and related technologies.

Background. Iran continues to test missiles and has moved ahead with its civilian nuclear program, which many observers believe supports a covert nuclear weapons program. In March 2002 a CIA official testified to Congress that the United States would "most likely" face an intercontinental ballistic missile threat from Iran by 2015 possibly flight-testing an ICBM by 2010 with Russian or North Korean help. Iran continued testing of its 800-mile range Shahab-3, and, according to Iranian officials, was ready to mass-produce the missiles. Although Iran announced in October 2003 that it would discontinue development of the long-range Shahab-4 missile, several reports noted that an August 2004 test was of a Shahab-3 with a longer range (1100-mile range). In December 2004 the National Council of Resistance in Iran, which has provided accurate information on Iran's nuclear program in the last two years, reported that Iran was developing two longer range missiles, with 2500km and 3000km ranges (Ghadr 101 and 110).

Although Iran's missile program is seemingly unfettered, its nuclear program has been the subject of intense scrutiny in 2003 and 2004, undoubtedly slowing efforts down. In February 2002 DCI Tenet testified that Iran might be able to produce enough fissile material for a nuclear weapons by late in the decade. In 2003 intensified International Atomic Energy Agency (IAEA) inspections in Iran revealed a more advanced nuclear material production program than previously thought. Although most concerns before 2003 focused on Russian cooperation with Iran on completing the Bushehr power reactors, recent revelations have focused concerns on the scope of Iran's uranium centrifuge enrichment program, its laser enrichment program, plutonium separation activities, and heavy water production. The IAEA Board of Governors has stopped short of declaring Iran in violation of the NPT, although the United States has pushed strongly for such a declaration. However, the IAEA has reported numerous failures by Iran to disclose facilities and activities. In late 2003, Iran agreed to suspend certain aspects of its nuclear program in exchange for promises by the European Union to facilitate nuclear cooperation. Iran also signed the Additional Protocol to its nuclear safeguards agreement in December 2003. One year later, however, Iran has not yet taken the legislative steps to ratify its Additional Protocol, and there have been significant gaps in implementing the suspension of enrichment and reprocessing activities. Iran recently signed an agreement with France, Germany and Great Britain, in which it agreed to extend its

suspension to a wider range of activities. It plans to conduct further negotiations on its nuclear program with Great Britain, France, and Germany. The United States has not joined in these discussions, and does not fully support the approach taken thus far, but has not rejected the process.

Iran is thought to have a large chemical weapons stockpile and is pursuing dual-use equipment and expertise that would expand its BW capabilities. The U.S. intelligence community believes Iran seeks to acquire an indigenous chemical weapons production capability and a biological weapons deployment capability. Iran is a party to the 1997 Chemical Weapons Convention and the 1972 Biological and Toxin Weapons Convention.

Issues for Congress. Each year since FY1998, foreign aid laws have contained provisions cutting U.S. aid to the Russian government if it continues the Bushehr nuclear reactor project or assists Iran's ballistic missile program. No waiver was provided for either in the FY1998 or FY2000 legislation, although the cuts do not apply to nuclear dismantlement in Russia or aid to Russia's private sector. The FY2002 foreign relations authorization bill (H.R. 1646, P.L. 107-228) contains Subtitle D, "The Iran Nuclear Proliferation Prevention Act of 2002,"which seeks to prohibit the use of U.S. voluntary contributions to the IAEA's Technical Cooperation Fund for use in Iran if the Secretary of State determines that IAEA programs in Iran are inconsistent with U.S. nuclear nonproliferation or safety goals or provide Iran with proliferation-relevant training or are used as a cover for proliferation activities. The bill requires the Secretary of State to assess IAEA projects for their consistency with U.S. nuclear nonproliferation and safety goals and conduct an annual review of all IAEA programs.

For over twenty years, a variety of economic sanctions have been in place with respect to Iran. Two sanctions laws are pertinent to Iran's WMD capabilities — the Iran-Iraq Arms Nonproliferation Act (P.L. 102-484) and the Iran Nonproliferation Act (P.L. 106-178). The Iran-Iraq Arms Nonproliferation Act requires denial of license applications for exports to Iran of dual-use items, and imposes sanctions on foreign countries that transfer to Iran "destabilizing numbers and types of conventional weapons," as well as WMD technology. The Iran Nonproliferation Act authorizes sanctions on foreign entities that assist Iran's WMD programs. During 2004, several entities in China, India, Belarus, North Korea, Russia, Spain and the Ukraine were sanctioned under the Iran Nonproliferation Act.

For Further Reading

Iran: Arms and Weapons of Mass Destruction Suppliers, CRS Report RL30551.
Iran: U.S. Concerns and Policy Responses, CRS Report RL32048.
Iran's Nuclear Program: Recent Developments, CRS Report RS21592.

Libya

Introduction. On December 19, 2003, Libya made the startling announcement that it would give up its weapons of mass destruction programs. U.S., British, and international officials inspected and removed or destroyed key components of those programs and Libya provided valuable information, particularly about foreign suppliers. Information from Libya was crucial in unraveling the network developed by the Pakistani nuclear scientist A.Q. Khan to sell nuclear material, components, equipment, and weapons designs to Libya, Iran, and North Korea. Revelations about that network gave added impetus to the Proliferation Security Initiative, prompted states to agree to a resolution (UNSCR 1540) at the UN on Weapons of Mass Destruction, and have generated discussion within the international community about measures to help stem the spread of enrichment and reprocessing technologies.

Background. In December 2003, Libya announced it would dismantle its WMD programs and open the country to immediate and comprehensive verification inspections. Libya pledged to: eliminate its chemical and nuclear weapons programs; declare all nuclear activities to the International Atomic Energy Agency (IAEA); eliminate ballistic missiles within Missile Technology Control Regime (MTCR) guidelines; accept international inspections to ensure Libya's adherence to the NPT and sign the Additional Protocol; and eliminate all chemical weapons stocks and join the Chemical Weapons Convention (CWC). Libya also agreed to adhere to MTCR guidelines and signed the Comprehensive Test Ban Treaty.

For Libya, which had offered to give up its WMD programs in the 1990s, the decision was likely an economic one: its stagnating economy had suffered from 30 years of comprehensive sanctions, and eliminating its WMD programs was a prerequisite for normalizing relations with the United States. However, some observers believe that Libya was influenced by the U.S. invasion of Iraq, by the strong U.S. national security strategy, and by the interdiction of centrifuge parts in October 2003. In addition, there is little evidence that Libya's programs were successful, even with significant help from abroad. For example, Libya's missiles were mostly limited to short-range Scud Bs; it has relinquished only 5 longer-range Scud-Cs. Although its chemical weapons program was the most advanced, Libya declared to the Organization for the Prohibition of Chemical Weapons (OPCW) that it had produced 23 tons of mustard agent between 1980 and 1990. While Libya received significant help from the Pakistani nuclear scientist, A.Q. Khan, including pre-assembled centrifuges, components, and a nuclear weapons design, Libyan scientists were only able to complete a small uranium enrichment cascade by 2002, after five years of assistance. Libyan officials reported to the IAEA that although they had a nuclear weapons design, they did not have the expertise to do anything with it.

Issues For Congress. In 2004, the Bush Administration lifted most of the sanctions that were in place against Libya, but Libya still remains on the list of state sponsors of terrorism. This designation affects the kinds of assistance that the U.S. government may supply to Libya. President Bush suggested in a speech in February 2004 that assistance should be supplied to help "redirect" Libyan scientists. It is not

clear whether that would be the most effective targeting of nonproliferation funds, given the low level of indigenous Libyan technical expertise, but there may be other areas where nonproliferation assistance is needed.

For Further Reading

Disarming Libya: Weapons of Mass Destruction, CRS Report RS21823.

Appendix A: List of Treaties and Agreements

This appendix lists a wide range of arms control treaties and agreements. The date listed in each entry indicates the year in which the negotiations were completed. In some cases, entry into force occurred in a subsequent year.

The Geneva Protocol, 1925: Bans the use of poison gas and bacteriological weapons in warfare.

The Antarctic Treaty, 1959: Demilitarizes the Antarctic continent and provides for scientific cooperation on Antarctica.

Memorandum of Understanding ... Regarding the Establishment of a Direct Communications Link (The Hot Line Agreement), 1963: Provides for a secure, reliable communications link between Washington and Moscow. Modified in 1971, 1984, and 1988 to improve the method of communications.

Limited Test Ban Treaty, 1963: Bans nuclear weapons tests or any nuclear explosions in the atmosphere, outer space, and under water.

Outer Space Treaty, 1967: Bans the orbiting or stationing on celestial bodies (including the moon) of nuclear weapons or other weapons of mass destruction.

Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco), 1967: Obligates nations in Latin America not to acquire, possess, or store nuclear weapons on their territory.

Treaty on the Non-Proliferation of Nuclear Weapons, 1968: Non-nuclear signatories agree not to acquire nuclear weapons; nuclear signatories agree to cooperate with non-nuclear signatories in peaceful uses of nuclear energy.

Seabed Arms Control Treaty, 1971: Bans emplacement of military installations, including those capable of launching weapons, on the seabed.

Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War (Accident Measures Agreement), 1971: Outlines measures designed to reduce the risk that technical malfunction, human failure, misinterpreted incident, or unauthorized action could start a nuclear exchange.

Biological Weapons Convention, 1972: Bans the development, production, stockpile, or acquisition of biological agents or toxins for warfare.

Agreement ... on the Prevention of Incidents On and Over the High Seas, 1972: Establishes "rules of the road" to reduce the risk that accident, miscalculation, or failure of communication could escalate into a conflict at sea.

Interim Agreement ... on Certain Measures with Respect to the Limitation of Strategic Offensive Arms (SALT I Interim Agreement), 1972: Limits numbers of some types of U.S. and Soviet strategic offensive nuclear weapons.

Treaty ... on the Limitation of Anti-Ballistic Missile Systems (ABM Treaty), 1972: Limits United States and Soviet Union to two ABM sites each; limits the number of interceptor missiles and radars at each site to preclude nationwide defense. Modified in 1974 to permit one ABM site in each nation. U.S. withdrew in June 2002.

Agreement ... on the Prevention of Nuclear War, 1973: United States and Soviet Union agreed to adopt an "attitude of international cooperation" to prevent the development of situations that might lead to nuclear war.

Treaty ... on the Limitation of Underground Nuclear Weapons Tests (Threshold Test Ban Treaty), 1974: Prohibits nuclear weapons tests with yields of more than 150 kilotons. Ratified and entered into force in 1990.

Treaty ... on Underground Nuclear Explosions for Peaceful Purposes (Peaceful Nuclear Explosions Treaty), 1976: Extends the limit of 150 kilotons to nuclear explosions occurring outside weapons test sites. Ratified and entered into force in 1990.

Concluding Document of the Conference on Security and Cooperation in Europe (Helsinki Final Act), 1975: Outlines notifications and confidence-building measures with respect to military activities in Europe.

Convention on the Prohibition of Military or any other Hostile Use of Environmental Modification Techniques, 1978: Bans the hostile use of environmental modification techniques that have lasting or widespread effects.

Treaty ... on the Limitation of Strategic Offensive Arms (SALT II), 1979: Places quantitative and qualitative limits on some types of U.S. and Soviet strategic offensive nuclear weapons. Never ratified.

The Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed To Be Excessively Injurious or To Have Indiscriminate Effects: This Convention, also known as the Convention on Conventional Weapons (CCW), was concluded in Geneva in 1980 and entered into force in 1993. Protocol II (Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-traps and Other Devices) contains rules for marking, registering, and removing minefields, in an effort to reduce indiscriminate casualties caused by anti-personnel landmines. Protocol IV prohibits laser weapons designed to cause blindness.

Document of the Stockholm Conference on Confidence- and Security-Building Measures and Disarmament in Europe (Stockholm Document), 1986: Expands on the notifications and confidence-building measures in the Helsinki Final Act. Provides for ground and aerial inspection of military activities.

Treaty of Rarotonga, 1986: Establishes a Nuclear Weapons Free Zone in the South Pacific. The United States signed the Protocols in 1996; the Senate has not yet provided its advice and consent to ratification.

Agreement ... on the Establishment of Nuclear Risk Reduction Centers, 1987: Establishes communications centers in Washington and Moscow and improves communications links between the two.

Treaty ... on the Elimination of their Intermediate-Range and Shorter-Range Missiles, 1987: Bans all U.S. and Soviet ground-launched ballistic and cruise missiles with ranges between 300 and 3,400 miles.

Agreement ... on Notifications of Launches of Intercontinental Ballistic Missiles and Submarine Launched Ballistic Missiles, 1988: Obligates United States and Soviet Union to provide at least 24 hours notice before the launch of an ICBM or SLBM.

Agreement on the Prevention of Dangerous Military Activities, 1989: Outlines cooperative procedures that are designed to prevent and resolve peacetime incidents between the armed forces of the United States and Soviet Union.

U.S.-U.S.S.R. Chemical Weapons Destruction Agreement, 1990: Mandates the destruction of the bulk of the U.S. and Soviet chemical weapons stockpiles.

Vienna Document of the Negotiations on Confidence- and Security-Building Measures, 1990: Expands on the measures in the 1986 Stockholm Document.

Treaty on Conventional Armed Forces in Europe (CFE Treaty), 1990: Limits and reduces the numbers of certain types of conventional armaments deployed from the "Atlantic to the Urals."

Treaty ... on the Reduction and Limitation of Strategic Offensive Arms (START), 1991: Limits and reduces the numbers of strategic offensive nuclear weapons. Modified by the Lisbon Protocol of 1992 to provide for Belarus, Ukraine, Kazakhstan, and Russia to succeed to Soviet Union's obligations under the Treaty. Entered into force on December 5, 1994.

Vienna Document of the Negotiations on Confidence- and Security-Building Measures, 1992: Expands on the measures in the 1990 Vienna Document.

Treaty on Open Skies, 1992: Provides for overflights by unarmed observation aircraft to build confidence and increase transparency of military activities.

Agreement ... Concerning the Safe and Secure Transportation, Storage, and Destruction of Weapons and Prevention of Weapons Proliferation, 1992: Provides for U.S. assistance to Russia for the safe and secure transportation, storage, and destruction of nuclear, chemical, and other weapons.

Agreement Between the United States and Republic of Belarus Concerning Emergency Response and the Prevention of Proliferation of Weapons of Mass Destruction, 1992: Provides for U.S. assistance to Belarus in eliminating nuclear weapons and responding to nuclear emergencies in Belarus.

Treaty ... on the Further Reduction and Limitation of Strategic Offensive Arms (START II) 1993: Would have further reduced the number of U.S. and Russian strategic offensive nuclear weapons. Would have banned the deployment of all land-based multiple-warhead missiles (MIRVed ICBMs), including the Soviet SS-18 "heavy" ICBM. Signed on January 3, 1993; U.S. Senate consented to ratification in January 1996; Russian Duma approved ratification in April 2000. Treaty never entered into force.

Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction: Bans chemical weapons and requires elimination of their production facilities. Opened for signature on January 13, 1993; entered into force in April 1997.

Agreement ... Concerning the Disposition of Highly Enriched Uranium Resulting from the Dismantlement of Nuclear Weapons in Russia, 1993: Provides for U.S. purchase of highly enriched uranium removed from Russian nuclear weapons; uranium to be blended into low enriched uranium for fuel in commercial nuclear reactors. Signed and entered into force on February 18, 1993.

Agreement Between the United States and Ukraine Concerning Assistance to Ukraine in the Elimination of Strategic Nuclear Arms, and the Prevention of Proliferation of Weapons of Mass Destruction: Provides for U.S. assistance to Ukraine to eliminate nuclear weapons and implement provisions of START I. Signed in late 1993, entered into force in 1994.

Agreement Between the United States and Republic of Kazakhstan Concerning the Destruction of Silo Launchers of Intercontinental Ballistic Missiles, Emergency Response, and the Prevention of Proliferation of Weapons of Mass Destruction, 1993: Provides for U.S. assistance to Kazakhstan to eliminate nuclear weapons and implement provisions of START I.

Trilateral Statement by the Presidents of the United States, Russia, and Ukraine, 1994: Statement in which Ukraine agreed to transfer all nuclear warheads on its territory to Russia in exchange for security assurances and financial compensation. Some compensation will be in the form of fuel for Ukraine's nuclear reactors. The United States will help finance the compensation by purchasing low enriched uranium derived from dismantled weapons from Russia.

Treaty of Pelindaba, 1996: Establishes a nuclear weapons free zone in Africa. The United States has signed, but not yet ratified Protocols to the Treaty.

Comprehensive Nuclear Test Ban Treaty (CTBT), 1996: Bans all nuclear explosions, for any purpose. The United States and more than 130 other nations had signed the Treaty by late 1996. The U.S. Senate voted against ratification in October, 1999.

Ottawa Treaty, 1997: Convention for universal ban against the use of anti-personnel landmines, signed in 1997 and entered into force in 1999. The United States and other significant military powers are not signatories.

Strategic Offensive Reductions Treaty (Moscow Treaty): Obligates the United States and Russia to reduce strategic nuclear forces to between 1,700 and 2,200 warheads. Does not define weapons to be reduced or provide monitoring and verification provisions. Reductions must be completed by December 31, 2012, when the Treaty limits then expire. Signed in May 2002, entered into force June 1, 2003.

Appendix B: The U.S. Treaty Ratification Process

Article II, Section 2, Clause 2 of the United States Constitution establishes responsibilities for treaty ratification. It provides that the President "shall have Power, by and with the Advice and Consent of the Senate, to make Treaties, provided two thirds of the Senators present concur." Contrary to common perceptions, the Senate does not ratify treaties; it provides its advice and consent to ratification by passing a resolution of ratification. The President then "ratifies" a treaty by signing the instrument of ratification and either exchanging it with the other parties to the treaty or depositing it at a central repository (such as the United Nations).

In section 33 of the Arms Control and Disarmament Act (P.L. 87-297, as amended), Congress outlined the relationship between arms control agreements and the treaty ratification process. This law provides that "no action shall be taken under this or any other law that will obligate the United States to disarm or to reduce or to limit the Armed Forces or armaments of the United States, except pursuant to the treaty-making power of the President under the Constitution or unless authorized by further affirmative legislation by the Congress of the United States."

In practice, most U.S. arms control agreements have been submitted as treaties, a word reserved in U.S. usage for international agreements submitted to the Senate for its approval in accordance with Article II, Section 2 of the Constitution. The Senate clearly expects future arms control obligations would be made only pursuant to treaty in one of its declarations in the resolution of ratification of the START Treaty. The declaration stated: "The Senate declares its intention to consider for approval international agreements that would obligate the United States to reduce or limit the Armed Forces or armaments of the United States in a militarily significant manner only pursuant to the treaty power set forth in Article II, Section 2, Clause 2 of the Constitution."

Nonetheless, some arms control agreements have been made by other means. Several "confidence building" measures have been concluded as legally binding international agreements, called executive agreements in the United States, without approval by Congress. These include the Hot Line Agreement of June 20, 1963, the Agreement on Prevention of Nuclear War of June 22, 1973, and agreements concluded in the Standing Consultative Commission established by the Anti-ballistic Missile Treaty. In another category that might be called statutory or congressional-executive agreements, the SALT I Interim Agreement was approved by a joint resolution of Congress in 1972. In a third category, the executive branch has entered some arms control agreements that it did not submit to Congress on grounds that they were "politically binding" but not "legally binding." Such agreements include several measures agreed to through the Conference on Security and Cooperation in Europe, such as the Stockholm Document on Confidence- and Security-Building Measures and Disarmament in Europe, signed September 19, 1986.

Senate Consideration

The conclusion or signing of a treaty is only the first step toward making the agreement legally binding on the parties. First, the parties decide whether to ratify, that is, express their consent to be bound by, the treaty that the negotiators have signed. Each party follows its own constitutional process to approve the treaty.

In the United States, after a treaty has been signed, the President at a time of his choice submits to the Senate the treaty and any documents that are to be considered an integral part of the treaty and requests the Senate's advice and consent to ratification. The President's message is accompanied by a letter from the Secretary of State to the President which contains an analysis of the treaty. After submittal, the Senate may approve the agreement, approve it with various conditions, or not approve it.

Senate consideration of a treaty is governed by Senate Rule XXX, which was amended in 1986 to simplify the procedure.[33] The treaty is read a first time and the injunction of secrecy is removed by unanimous consent, although normally the text of a treaty has already been made public. The treaty is then referred to the Senate Committee on Foreign Relations under Senate Rule XXV on jurisdiction. After consideration, the Committee reports the treaty to the Senate with a proposed resolution of ratification that may contain any of the conditions described below. If the Committee objects to a treaty, or believes the treaty would not receive the necessary majority in the Senate, it usually simply does not report the treaty to the Senate and the treaty remains pending indefinitely on the Committee calendar.[34]

After it is reported from the Committee, a treaty is required to lie over for one calendar day before Senate consideration. The Senate considers the treaty after adoption of a non-debatable motion to go into executive session for that purpose.[35] Rule XXX provides that the treaty then be read a second time, after which amendments to the treaty may be proposed. The Majority Leader typically asks unanimous consent that the treaty be considered to have passed through all the parliamentary stages up to and including the presentation of the resolution of ratification. After the resolution of ratification is presented, amendments to the treaty

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[33] The 1986 amendment eliminated a stage in which the Senate met "as in Committee of the Whole" and acted on any proposed amendment to the treaty.

[34] For further information, see *Rejection of Treaties: A Brief Survey of Past Instances*. CRS Report No. 87-305 F, by Ellen C. Collier, March 30, 1987. (Archived. For copies, call Amy Woolf, 202-707-2379.)

[35] Earlier, treaties could only be taken out of the order in which they were reported from the Committee and appeared on the Senate Executive Calendar by debatable motion. In 1977 the Threshold Test Ban and Peaceful Nuclear Explosions Treaties were ordered reported by the Committee and then delayed partly so that they would not be placed on the Senate calendar ahead of the Panama Canal Treaties. Senate Committee on Foreign Relations. *Treaties and Other International Agreements: The Role of the United States Senate*. November 1993. P. 101.

itself, which are rare, may not be proposed. The resolution of ratification is then "open to amendment in the form of reservations, declarations, statements, or understandings." Decisions on amendments and conditions are made by a majority vote. Final approval of the resolution of ratification with any conditions that have been approved, requires a two-thirds majority of those Senators present.

After approving the treaty, the Senate returns it to the President with the resolution of ratification. If he accepts the conditions of the Senate, the President then ratifies the treaty by signing a document referred to as an instrument of ratification. Included in the instrument of ratification are any of the Senate conditions that State Department officials consider require tacit or explicit approval by the other party. The ratification is then complete at the national level and ready for exchange or deposit. The treaty enters into force in the case of a bilateral treaty upon exchange of instruments of ratification and in the case of a multilateral treaty with the deposit of the number of ratifications specified in the treaty. The President then signs a document called a proclamation which publicizes the treaty domestically as in force and the law of the land.

If the President objects to any of the Senate conditions, or if the other party to a treaty objects to any of the conditions and further negotiations occur, the President may resubmit the treaty to the Senate for further consideration or simply not ratify it.

Approval with Conditions

The Senate may stipulate various conditions on its approval of a treaty. Major types of Senate conditions include amendments, reservations, understandings, and declarations or other statements or provisos. Sometimes the executive branch recommends the conditions, such as the December 16, 1974, reservation to the 1925 Geneva Protocol prohibiting the use of poison gas and the understandings on the protocols to the Treaty for the Prohibition of Nuclear Weapons in Latin America.

An amendment to a treaty proposes a change to the language of the treaty itself, and Senate adoption of amendments to the text of a treaty is infrequent. A formal amendment to a treaty after it has entered into force is made through an additional treaty often called a protocol. An example is the ABM (Anti-Ballistic Missile) Protocol, signed July 3, 1974, which limited the United States and the Soviet Union to one ABM site each instead of two as in the original 1972 ABM Treaty. While the Senate did not formally attach amendments to the 1974 Threshold Test Ban and 1976 Peaceful Nuclear Explosion treaties, it was not until Protocols relating to verification were concluded in 1990 that the Senate approved these two Treaties.

A reservation is a limitation or qualification that changes the obligations of one or more of the parties. A reservation must be communicated to the other parties and, in a bilateral treaty, explicitly agreed to by the other party. President Nixon requested a reservation to the Geneva Protocol on the use of poison gases stating that the protocol would cease to be binding on the United States in regard to an enemy state if that state or any of its allies failed to respect the prohibition. One of the conditions attached to the INF treaty might be considered a reservation although it was not

called that. On the floor the sponsors referred to it as a Category III condition. The condition was that the President obtain Soviet consent that a U.S.-Soviet agreement concluded on May 12, 1988, be of the same effect as the provisions of the treaty.

An understanding is an interpretation or elaboration ordinarily considered consistent with the treaty. In 1980, the Senate added five understandings to the agreement with the International Atomic Energy Agency (IAEA) for the Application of Safeguards in the United States. The understandings concerned implementation of the agreement within the United States. A condition added to the INF treaty resolution, requiring a presidential certification of a common understanding on ground-launched ballistic missiles, might be considered an understanding. The sponsor of the condition, Senator Robert Dole, said, "this condition requires absolutely nothing more from the Soviets, but it does require something from our President."[36]

A declaration states policy or positions related to the treaty but not necessarily affecting its provisions. Frequently, like some of the understandings mentioned above, declarations and other statements concern internal procedures of the United States rather than international obligations and are intended to assure that Congress or the Senate participate in subsequent policy. The resolution of ratification of the Threshold Test Ban Treaty adopted in 1990 made approval subject to declarations (1) that to preserve a viable deterrent a series of specified safeguards should be an ingredient in decisions on national security programs and the allocation of resources, and (2) the United States shared a special responsibility with the Soviet Union to continue talks seeking a verifiable comprehensive test ban. In a somewhat different step, in 1963 the Senate attached a preamble to the resolution of ratification of the limited nuclear test ban treaty. The preamble contained three "Whereas" clauses of which the core one stated that amendments to treaties are subject to the constitutional process.

The important distinction among the various conditions concerns their content or effect. Whatever designation the Senate applies to a condition, if the President determines that it may alter an international obligation under the treaty, he transmits it to the other party or parties and further negotiations or abandonment of the treaty may result.

During its consideration of the SALT II Treaty, the Senate Foreign Relations Committee grouped conditions into three categories to clarify their intended legal effect; (I) those that need not be formally communicated to or agreed to by the Soviet Union, (II) those that would be formally communicated to the Soviet Union, but not necessarily agreed to by them, and (III) those that would require the explicit agreement of the Soviet Union. In the resolution of ratification of the START Treaty, the Senate made explicit that some of the conditions were to be communicated to the other parties.

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[36] Congressional Record, May 27, 1988, p. S 6883.

The Senate approves most treaties without formally attaching conditions. Ten arms control treaties were adopted without conditions: the Antarctic, Outer Space, Nuclear Non-Proliferation, Seabed, ABM, Environmental Modification, and Peaceful Nuclear Explosions Treaties, the Biological Weapons and the Nuclear Materials Conventions, and the ABM Protocol. In some of these cases, however, the Senate Foreign Relations Committee included significant understandings in its report.

Even when it does not place formal conditions in the resolution of ratification, the Senate may make its views known or establish requirements on the executive branch in the report of the Foreign Relations Committee or through other vehicles.[37] Such statements become part of the legislative history but are not formally transmitted to other parties. In considering the Limited Nuclear Test Ban Treaty in 1963, the Senate turned down a reservation that "the treaty does not inhibit the use of nuclear weapons in armed conflict," but Senate leaders insisted upon a written assurance on this issue, among others, from President Kennedy. In reporting the Nuclear Non-Proliferation Treaty, the Committee stated that its support of the Treaty was not to be construed as approving security assurances given to the non-nuclear-weapon parties by a UN Security Council resolution and declarations by the United States, the Soviet Union, and the United Kingdom. The security assurances resolution and declarations were, the committee reported, "solely executive measures."[38]

For Further Reading

The Congressional Role in Arms Control. Part IX in *Fundamentals of Nuclear Arms Control*, Subcommittee on Arms Control, International Security and Science of Committee on Foreign Affairs Committee Print, December 1986.

Executive Agreements Submitted to Congress: Legislative Procedures Used Since 1970, CRS Report No. 90-548 F. (Archived. For copies call Amy Woolf, 202-707-2379.)

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Treaties and Other International Agreements: The Role of the United States Senate, Senate Foreign Relations Committee Print, November 1993.

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[37] For a discussion of methods by which Congress influences arms control negotiations, see House Committee on Foreign Affairs. *Fundamentals of Nuclear Arms Control*. Part IX — The Congressional Role in Nuclear Arms Control. Prepared for the Subcommittee on Arms Control, International Security, and Science by the Congressional Research Service. June 1986.

[38] Senate. Executive Report 91-1, March 6, 1969. 91st Congress, 1st session.

Appendix C: Glossary

Anti-ballistic missile (ABM) system: A weapon system, usually consisting of radars, sensors, and interceptors, that is designed to intercept and destroy long-range ballistic missiles and their warheads in flight.

Anti-ballistic missile (ABM) Treaty: 1972 Treaty between the United States and Soviet Union. Prohibits nationwide defense with ABM systems. Limits each side to ABM systems at two sites, with no more than 100 interceptor missiles at each site: also limits size and number of ABM radars. U.S. withdrew in 2002 and Treaty lapsed.

Ballistic missile: A missile that reaches its target by way of a free flight along a high arcing trajectory. Longer-range missiles may sustain part of their flight outside the atmosphere.

Comprehensive Test Ban: A ban on all nuclear explosive tests of any yield. It also includes a ban on peaceful nuclear explosions. A multilateral Treaty that would impose such a ban opened for signature in the United Nations in September 1996.

Conference on Security and Cooperation in Europe: Begun in 1972, it has negotiated and implemented measures that are intended to ease tensions and build confidence among the nations of Eastern and Western Europe. The United States, Canada, and former republics of the Soviet Union also participate.

Confidence-building measures: Negotiated or unilateral measures undertaken to provide information and reduce uncertainties about military intentions and activities.

Conventional Armed Forces in Europe (CFE) Treaty: 1990 Treaty between the NATO nations and nations of the former Warsaw Pact. Limits the number of tanks, armored combat vehicles, artillery pieces, combat aircraft, and attack helicopters that may be deployed by participating nations in the Atlantic-to-the-Urals (ATTU) geographic area.

Cruise missile: An unmanned, jet-propelled guided missile that flies within the atmosphere. May carry nuclear or conventional warheads. May be air-launched (ALCM), ground-launched (GLCM), or sea-launched (SLCM).

Download: Remove some of the warheads from a ballistic missile that has multiple, independently targeted warheads. Under the Strategic Arms Reduction Treaty, the number of warheads attributed to a type of ballistic missile may be reduced if the missile is downloaded according to treaty procedures.

Fissile material: Usually refers to the nuclear materials, such as uranium-235 and plutonium-239, that are used to make nuclear weapons.

Full-scope safeguards: Requirement outlined in the Nuclear Non-Proliferation Treaty. Full-scope means that non-nuclear weapons states that are a party to the

Treaty must place ***all*** of their nuclear facilities under IAEA safeguards to ensure that no nuclear materials are diverted for military uses. Safeguards are procedures, sensors, and accounting methods used to detect the diversion of nuclear materials.

Heavy bomber: A bomber whose weapons are subject to the limits in START. The Treaty defines heavy bombers as those with a range greater than 5,000 miles or those that are equipped to carry long-range nuclear ALCMs.

Intercontinental ballistic missile (ICBM): A land-based ballistic missile with a range of more than 3,400 miles.

Intermediate Range Nuclear Forces (INF) Treaty: 1987 Treaty between the United States and Soviet Union. Bans the production, testing and deployment of ground-launched ballistic and cruise missiles with ranges between 300 and 3,400 miles. Required the elimination of all existing INF missiles.

International Atomic Energy Agency (IAEA): A United Nations organization, founded in 1957, that promotes the peaceful uses of nuclear technology. It applies the safeguards that are designed to detect attempted diversion of nuclear materials from peaceful uses to military uses.

Limited Test Ban Treaty (LTBT): 1963 treaty that bans nuclear explosions in the atmosphere or outer space. Permits underground nuclear explosions.

Long-range nuclear-armed ALCMs: Air-launched cruise missiles with nuclear warheads that count under the limits in START. According to the Treaty, these missiles have a range of more than 375 miles.

MIRVed (Multiple independently targetable reentry vehicle) ballistic missile: A ballistic missile that can deliver two or more nuclear warheads to distinct, separate targets.

National technical means (NTM): The satellites, seismic stations, and remote sensors that nations use to collect intelligence information about military forces and activities of other nations from locations outside the territory of the target nation. These systems can be used to monitor forces and activities limited by arms control agreements: the information could then help a nation verify the Treaty participant's compliance with arms control agreements.

Non-Strategic Nuclear Weapons: All nuclear weapons other than the ICBMs, SLBMs, and heavy bombers. Delivery vehicles generally have ranges of less than 3,400 miles. Includes battlefield weapons, short-range tactical weapons, and medium range theater nuclear weapons.

Nuclear Non-proliferation Treaty (NPT): Multilateral treaty completed in 1968. Designed to prevent the spread of nuclear weapons to non-nuclear nations.

Perm-5: Reference to the five permanent members of the UN Security Council; the United States, Russia, Great Britain, France, and China.

Strategic Arms Reduction Treaty (START I): 1991 Treaty between the United States and four former republics of the Soviet Union (Russia, Kazakhstan, Belarus, and Ukraine) that limits and reduces the numbers of strategic offensive nuclear weapons. Entered into force on December 5, 1994.

START II: 1993 Treaty between the United States and Russia that calls for further reductions in their strategic offensive weapons.

Strategic nuclear forces: Land-based ballistic missiles with ranges over 3,400 miles, modern submarine-launched ballistic missiles, and heavy bombers. Designed for attacks against targets in the opponent's homeland.

Submarine-launched ballistic missile (SLBM): A ballistic missile that is carried aboard and launched from a submarine.

Tactical Nuclear Weapons: For land-based and sea-based systems, nuclear weapons with ranges below 300 miles. Developed for use in battlefield operations, in combat with opposing military forces.

Threshold Test Ban Treaty (TTBT): 1974 Treaty between the United States and Soviet Union banning nuclear tests with explosive yield greater than 150 kilotons. Companion Peaceful Nuclear Explosions (PNE) Treaty bans nuclear explosions for peaceful uses with a yield greater than 150 kilotons.

Throwweight: A measure of the destructive potential of a ballistic missile. It refers to the weight of the payload that a missile can deliver to a specified range. Ballistic missiles with higher throwweights are thought to be more destructive than those with lower throwweights because they can carry more warheads or larger warheads.

Yield: The amount of energy released by a nuclear explosion. Generally measured in equivalent tons of TNT.

Appendix D: Arms Control Organizations

Bilateral (U.S.-Former Soviet Republics)	**Jurisdiction**	**Mandate and issues currently under discussion**
Standing Consultative Commission (SCC)	ABM Treaty	Established to resolve compliance questions and to consider amendments to Treaty; currently debating ABM/TMD demarcation issues
Special Verification Commission (SVC)	INF Treaty	Established to resolve compliance questions; continues to discuss issues raised during monitoring and inspection process
Joint Compliance and Inspection Commission (JCIC)	START I	Established to resolve compliance questions and to promote implementation; meetings began before Treaty was ratified
Bilateral Inspection Commission (BIC)	START II	U.S.-Russian commission will promote implementation and resolve compliance questions under START II
Delegation on Safety, Security and Disarmament of Nuclear Weapons (SSD)	Nunn-Lugar Cooperative Threat Reduction Programs	U.S. delegations meet with counterparts in former Soviet republics to identify areas where U.S. assistance is needed and to implement programs
Multilateral		
Conference on Disarmament (CD)	Multilateral negotiations under the U.N.	Negotiating Fissile Material Production Ban and ban on the export of anti-personnel landmines
Joint Consultative Group (JCG)	CFE Treaty	Established to resolve compliance questions and to ease implementation; recent discussions have addressed Russian request for changes in some Treaty limits
Open Skies Consultative Committee (OSCC)	Open Skies Treaty	Established to facilitate implementation of the Treaty; it has already addressed a number of technical, procedural and cost issues related to Open Skies flights
Organization for the Prohibition of Chemical Weapons (OPCW)	Chemical Weapons Convention	Established to oversee CWC implementation and monitor chemical industry worldwide; preparatory commission is currently working out the procedural details for OPCW
Comprehensive Nuclear Test-Ban Treaty Organization	Comprehensive Nuclear Test Ban Treaty	Oversees three groups — a Conference of States Parties, an Executive Council, and a Technical Secretariat — responsible for implementing the CTBT