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Nonproliferation and Threat Reduction Assistance: U.S. Programs in the Former Soviet Union

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Summary

Congress passed the Nunn-Lugar amendment, authorizing U.S. threat reduction assistance to the former Soviet Union, in November 1991, after a failed coup in Moscow and the disintegration of the Soviet Union raised concerns about the safety and security of Soviet nuclear weapons. The annual program has grown from $400 million in the DOD budget over $900 million across three agencies — DOD ($409.2 million) DOE ($439 million) and the State Department ($70 million). It has also evolved from an emergency response to impending chaos in the Soviet Union, to a more comprehensive threat reduction and nonproliferation effort, to a broader program seeking to keep nuclear, chemical, and biological weapons from leaking out of the former Soviet Union and into the hands of rogue nations or terrorist groups.

The Department of Defense manages the Cooperative Threat Reduction (CTR) Program, which provides Russia, Ukraine, Belarus, and Kazakhstan with assistance in transporting, storing, and dismantling nuclear, chemical, and biological weapons. U.S. assistance has helped these nations eliminate the delivery systems for nuclear weapons under the START I Treaty, secure weapons storage areas, construct a storage facility for nuclear materials removed from weapons, construct a destruction facility for chemical weapons, and secure biological weapons materials.

The State Department manages the International Science and Technology Centers in Moscow and Kiev. These centers provide research grants to scientists and engineers so that they will not sell their knowledge to other nations or terrorist groups. The State Department has also provided assistance with export and border control programs in the former Soviet states. The Department of Energy manages programs that seek to improve the security of nuclear materials at civilian, naval, and nuclear weapons complex facilities. It also funds programs that help nuclear scientists and engineers find employment in commercial enterprises. DOE is also helping Russia dispose of plutonium removed from nuclear weapons and shut-down its remaining plutonium-producing reactors by replacing them with fossil-fuel plants.

Analysts have debated numerous issues related to U.S. nonproliferation and threat reduction assistance. These include questions about the coordination of and priority given to these programs in the U.S. government, questions about Russia's willingness to provide the United States with access to its weapons facilities, questions about the President's ability to waive certification requirements so that the programs can go forward, and questions about the need to expand the efforts into a global program that receives funding from numerous nations and possibly extends assistance to others outside the former Soviet Union.

This report complements CRS Report 97-1027 F, *Nunn-Lugar Cooperative Threat Reduction Programs: Issues for Congress* and CRS Report RL31368, *Preventing Proliferation of Biological Weapons: U.S. Assistance to the Former Soviet States*. It will be updated as needed.

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Nonproliferation and Threat Reduction Assistance: U.S. Programs in the Former Soviet Union

Introduction

In the budget submitted for FY2005, President Bush requested and Congress authorized over $900 million for U.S. programs that provide nonproliferation and threat reduction assistance to Russia and the other states of the former Soviet Union. This request includes $409.2 million for the Cooperative Threat Reduction (CTR) Program at the Department of Defense (DOD), $439 million for nonproliferation programs managed by the Department of Energy (DOE), and $70 million for programs administered by the State Department. With these programs, the United States seeks to help the recipient nations transport, store, and eliminate nuclear, chemical and other weapons; secure and eliminate the materials used in nuclear, chemical, and biological weapons; and prevent proliferation of the knowledge needed to produce these weapons to nations or groups outside the former Soviet Union. Since FY1992, the United States has appropriated nearly $8 billion across these three agencies for these programs.[1]

President Bush has often voiced support for these programs. In November 2001, the White House released a fact sheet that noted that "The United States is committed to strong, effective cooperation with Russia and the other states emerging from the former Soviet Union to reduce weapons of mass destruction and prevent the proliferation of these weapons or the material and expertise to develop them."[2] In the Joint Declaration released at the U.S-Russian summit in May 2002, the United States and Russia pledged to "continue cooperative threat reduction programs and expand efforts to reduce weapons-usable fissile material."[3] Furthermore, in June 2002, the President joined with the leaders of the G-8 nations to create the G-8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction. As is discussed in more detail later in this report, under this partnership, the United States has committed to provide up to $10 billion over the next 10 years

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[1] The term "spent" in this statement refers to the amount of money appropriated for threat reduction and nonproliferation programs. The amount of money actually paid to contractors for the work covered by these programs is less than the appropriated amount because many projects take years to complete, and payments may occur years after the money is appropriated.

[2] The White House. Office of the Press Secretary Fact Sheet. U.S. Government Nonproliferation and Threat Reduction Assistance to the Russian Federation. November 13, 2001.

[3] The White House. Office of the Press Secretary. Text of Joint Declaration. May 24, 2002.

to pursue nonproliferation and threat reduction programs in Russia and the other former Soviet states. This amount of $1 billion per year equals current U.S. expenditures on threat reduction and nonproliferation programs.

Congress has also offered its support to U.S. nonproliferation and threat reduction programs in the former Soviet states. Although some Members have questioned the value and effectiveness of some specific projects, Congress has authorized most of the funds requested by the Executive Branch in the years since these programs began. Congress has also helped shape the programs, prohibiting funding for some types of projects and providing added funding for others.

Many analysts have questioned, however, whether the United States is doing all that it can to prevent the leakage of knowledge, weapons, and materials from the former Soviet states. They note that, in its first budget submission in early 2001, the Bush Administration reduced funding for the DOD threat reduction programs by nearly 10% and cut more than $100 million out of DOE's defense nuclear nonproliferation programs, a funding category that includes U.S. nonproliferation assistance to Russia.[4] The Administration increased funding for these programs in FY2003 and FY2004, but its proposed budget for FY2005 for the DOD threat reduction programs again shows a 10% decrease. Even with increases in DOE budgets, some analysts argue that the added funding falls short of what is needed to address the continuing dangers of proliferation from the former Soviet states. Furthermore, they argue, if the funding level does not grow, the United States will not be able to expand and accelerate these programs to ensure that they effectively stop the proliferation of Russia's weapons, materials, and knowledge.

Many analysts cite, as further evidence of the Administration's wavering commitment, its failure to certify Russia for threat reduction funding in FY2002. The Administration stated that it could not certify Russia's compliance with its obligations under the Biological and Chemical Weapons Conventions. This finding stopped the signing of any new contracts to provide added funding for CTR programs in Russia and delayed several ongoing programs.[5] The Administration asked Congress to allow it to waive the certification requirements (this debate is discussed in more detail later in this report) so that funding could continue. But, for many analysts, this episode demonstrated that the Administration had not placed the highest priority on nonproliferation and threat reduction programs, in spite of its declarations about stopping proliferation to keep weapons of mass destruction away from terrorists.

At issue in the debate over U.S. threat reduction and nonproliferation programs is not only the total amount of funding that the United States might commit to these programs in the former Soviet states, but also the priority and sense of urgency that the United States assigns to them. Many recent studies on this issue have offered

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[4] Congress eventually restored the funding for DOE's Defense Nuclear Nonproliferation programs and added $223 million more in the FY2002 Emergency Supplemental Appropriations (P.L. 107-206) passed after the September 11, 2001 attacks.

[5] The certification is only required for DOD programs and some State Department programs; the absence of a certification did not affect DOE programs.

recommendations for the size, shape, and operation of these programs that differ from the approaches taken by the Clinton and Bush Administrations. This report summarizes many issues raised in these reports and in Congressional debates on the future of U.S. nonproliferation and threat reduction assistance. However, it first reviews the history of these programs, describing their origins in 1991, their expansion and evolution during the 1990s, and the changes in their direction during the first two years of the Bush Administration. The report also provides a broad summary of many of the program areas and projects supported by U.S. funding.

Background

The Nunn-Lugar Amendment

Congress initiated U.S. threat reduction and nonproliferation assistance to the Soviet Union in November 1991. A failed coup in Moscow in August 1991 and the subsequent disintegration of the Soviet Union had raised concerns about the safety and security of Soviet nuclear weapons. Consequently, Senators Nunn and Lugar proposed an amendment to the implementing legislation for the Conventional Armed Forces in Europe (CFE) Treaty (P.L. 102-228). The Senate passed the legislation by a vote of 86-8; the House adopted it through the Conference Report. This amendment, titled the "Soviet Nuclear Threat Reduction Act of 1991," authorized the use of $400 million in FY1992 Defense Department (DOD) funds to assist the Soviet Union, and its "successor entities" with efforts to "1) destroy nuclear weapons, chemical weapons, and other weapons, 2) transport, store, disable, and safeguard weapons in connection with their destruction; and 3) establish verifiable safeguards against the proliferation of such weapons."[6]

Senators arguing in support of the program, including Senators Nunn, Lugar, and Biden, emphasized the potential risks inherent in the Soviet collapse. They noted that the disintegration of the Soviet Union created "the danger that the ultimate disposition of nuclear weapons in the new political system will not be conducive to their safety or international stability," particularly if the weapons remained in several of the former Soviet republics. These Senators also warned of "a danger of seizure, theft, sale or use of nuclear weapons or components ... particularly if a widespread disintegration in the custodial system should occur." And third, they argued that "any weakening of control over weapons and components could spill outside the territory of the former Soviet Union, fueling nuclear proliferation worldwide."[7] Senator Nunn further warned that "we are on the verge of either having the greatest destruction of nuclear weapons in the history of the world or the greatest proliferation of nuclear weapons, nuclear materials, and scientific know-how on how to make these weapons,

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[6] For more information on this legislation, see CRS Report 94-985, The Nunn-Lugar Program for Soviet Weapons Dismantlement: Background and Implementation, By Theodor Galdi. pp. 1-4. (Available from Amy F. Woolf, on request.)

[7] See the comments of Senator Richard Lugar in the Congressional Record. November 25, 1991. p. S18005.

as well as chemical weapons, ballistic missiles, even biological weapons the world has ever seen."[8]

Senators who supported this legislation also emphasized that, by targeting "U.S. defense resources at the prompt, safe dismantlement of nuclear and chemical weapons in the Soviet arsenal,"[9] this assistance would "embody a new approach to enhancing our national security, an approach which fits a dramatically new national security environment."[10] Senator Biden further stated that, through this legislation, the United States would be "assisting ourselves," not the Soviet Union. But others questioned this characterization. They viewed the proposed assistance to the Soviet Union as foreign aid, which they opposed, and argued that the United States should instead use its defense resources to fund its own military and national security needs. Furthermore, some argued that, in providing assistance to the Soviet Union, the United States would allow the Soviet Union to divert its own resources away from the protection and dismantlement of its older weapons and towards the development and production of new weapons that could create new threats to the United States.[11] Members have raised these themes on numerous occasions over the years, debating whether U.S. nonproliferation and threat reduction assistance is a foreign aid program that provides benefits primarily to the recipients or a security program that provides benefits to both the United States and the former states of the Soviet Union.

Initially, Congress used the DOD budget to fund U.S. threat reduction assistance to the former Soviet States. In 1993, DOD began to refer to this effort as the Cooperative Threat Reduction Program (CTR). Experts from other agencies, such as the State Department and Department of Energy, participated in the projects when their expertise was required. In FY1997 these agencies each took budgetary and management responsibility for the projects that relied on their expertise. Consequently, although many analysts and observers still use the title "Cooperative Threat Reduction Program" when referring to the full range of U.S. nonproliferation programs, this is no longer accurate. This report only uses the term "CTR" when referring to the threat reduction programs funded by the Department of Defense. It uses the phrase "threat reduction and nonproliferation assistance" to refer to the full range of programs in DOD, DOE, and State.

A Slow Start

When Congress created the CTR program, many Members and experts outside government seemed to envision a relatively simple program where officials from the United States would travel to the four former Soviet states with nuclear weapons on their territories — Russia, Ukraine, Belarus, and Kazakhstan — to quickly safeguard and help dismantle nuclear, chemical, and other weapons. But the program's implementation was far slower and more complex than many expected. First, the

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[8] Ibid. p. S18004.

[9] Senator Joe Biden, Congressional Record November 25, 1991. p. S18002.

[10] Senator Sam Nunn, Congressional Record, November 25, 1991. p. S18004.

[11] See the comments of Senator Malcolm Wallop. Congressional Record, November 25, 1991. p. S18008.

need to develop and implement coordinated policies among several U.S. government agencies (primarily DOD, DOE, and the State Department) and within several organizations in the Pentagon slowed program implementation. Furthermore, the United States had to negotiate "umbrella agreements" with each recipient nation — setting out the privileges and immunities of U.S. personnel and to establishing the legal and customs framework for the provision of aid — before it could spend any money in the former Soviet states. Lingering mistrust between the parties, along with the high level of secrecy surrounding Russia's nuclear and chemical weapons programs complicated this process in 1992 and 1993.

During its first few years in office, the Clinton Administration sought to resolve the bureaucratic issues that had delayed the program. It offered broader political support to a cooperative relationship with Russia through a high level commission chaired by Vice President Gore and Russia's Prime Minister Chernomyrdin. This commission identified many efforts that later received funding through the CTR program. The Clinton Administration also provided significant policy and financial support to the CTR program, overcoming the reticence that had been expressed by some officials in the first Bush Administration. Consequently, it succeeded in sharply increasing the rate of expenditures on CTR projects by the mid-1990s. With the Administration's support, and with continuing congressional interest in the program, U.S. threat reduction and nonproliferation assistance began to expand and evolve. It expanded to several agencies, with DOE and the State Department each funding nonproliferation efforts in the former Soviet Union. It also expanded to include a broader range of programs. Where it had first focused on improving transportation security and helping with the destruction of strategic offensive nuclear weapons, it grew to include a wide range of efforts to secure and destroy nuclear, chemical, and biological weapons, the materials used in these weapons and the knowledge needed to design and produce these weapons. It has also expanded financially, from an initial level of approximately $400 million per year to a total of nearly $1 billion per year across the three agencies.

An Evolving Program

Initially, many in Congress saw U.S. assistance under Nunn-Lugar as an emergency response to impending chaos in the Soviet Union. Even after the sense of immediate crisis passed in 1992 and 1993, many analysts and Members of Congress remained concerned about the potential for diversion or a loss of control of nuclear and other weapons. Russia's economy was extremely weak and press accounts reported that nuclear materials from Russia were appearing on the black market in Western Europe. Consequently, many began to view CTR as a part of a long-term threat reduction and nonproliferation effort. Former Secretary of Defense William Perry referred to CTR as "defense by other means"[12] as the program helped eliminate Soviet weapons that had threatened the United States and contain weapons and materials that could pose new threats in the hands of other nations.

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[12] See, for example, U.S. Department of Defense. Cooperative Threat Reduction. April 1995. Washington, D.C., p. 1.

By the mid-1990s, many observers also began to view U.S. assistance to the former Soviet states as a part of the effort to keep weapons of mass destruction away from terrorists. In 1996, experts testified to Congress that Russian nuclear and chemical facilities, with their crumbling security and lack of accounting procedures, could provide a source for terrorists seeking nuclear or chemical materials. In response, Congress expanded the programs that provided security at facilities with nuclear materials and suggested that more attention be paid to security at facilities with materials that could be used in chemical or biological weapons.[13] In January 2001, a task force sponsored by the Department of Energy stated that "the most urgent unmet national security threat to the United States today is the danger that weapons of mass destruction or weapons-usable materials in Russia could be stolen and sold to terrorists or hostile nation states and used against American troops abroad or citizens at home."[14] Since September 11, 2001, virtually all analysts who follow U.S. threat reduction and nonproliferation assistance have made the link between the possible quest for weapons of mass destruction by terrorists and the potential for thwarting them by helping Russia protect its weapons, materials, and knowledge.[15]

The Bush Administration has also linked U.S. threat reduction and nonproliferation assistance to the former Soviet States to U.S. efforts to keep weapons of mass destruction away from terrorists. In early 2003, it stated that it had "expanded the strategic focus of the CTR program" to support the war on terrorism.[16] In its budgets for FY2004 and FY2005, it increased funding for several export and border control programs, for programs designed to stem the leakage of knowledge out of the former Soviet Union, and for an effort to find and recover "radiological sources" — a type of military device that could provide terrorists with nuclear materials for use in a "dirty bomb."[17] All of these initiatives focus more on stemming proliferation than on eliminating nuclear weapons in the former Soviet states.

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[13] The March 1995 nerve agent attack in the Tokyo subway system by the Aum Shinryo cult raised the profile of this type of threat.

[14] The report went on to state that "unless protected from theft of diversion, the former Soviet arsenal of weapons of mass destruction threatens to become a goldmine for would-be proliferators the world over." Baker, Howard and Lloyd Cutler, Co-Chairs, Russia Task Force. A Report Card on the Department of Energy's Nonproliferation Programs with Russia. The Secretary of Energy Advisory Board, United States Department of Energy. January 10, 2001. p. 1.

[15] Senator Sam Nunn has stated that "Preventing the spread and use of nuclear biological, and chemical weapons and materials should be the central organizing principle on security for the 21st century." Remarks by Former U.S. Senator Sam Nunn, Chairman, Nuclear Threat Initiative. Carnegie Endowment for International Peace. International Nonproliferation Conference. November 14 , 2002.

[16] U.S. Department of Defense. Fiscal Year 2004/2005 Biennial Budget Estimates. Former Soviet Union Threat Reduction Appropriation. February 2003. p. 1.

[17] Many analysts believe that this type of weapon, which could disperse radioactive materials across a wide area, might be particularly attractive to terrorists. For details see U.S. Library of Congress, Congressional Research Service. Terrorist "Dirty Bombs:" A Brief Primer CRS Report RS21528. By Jonathan Medalia. May 23, 2003.

Department of Defense Cooperative Threat Reduction Program

Program Objectives

At its inception, the CTR program sought to provide Russia, Ukraine, Belarus, and Kazakhstan with assistance in the safe and secure transportation, storage, and dismantlement of nuclear weapons. During the first few years, the mandate for U.S. assistance expanded to include efforts to secure materials that might be used in nuclear or chemical weapons, to prevent the diversion of scientific expertise from the former Soviet Union, to expand military-to-military contacts between officers in the United States and the former Soviet Union, and to facilitate the demilitarization of defense industries.[18] In 1994, Congress also indicated that threat reduction funds could be used to assist in environmental restoration at former military sites and to provide housing for former military officers who had been demobilized as a result of the dismantling of strategic offensive weapons. The 104th Congress reversed this position, however, banning the use of CTR funds for environmental restoration or housing for military officers. It also denied additional funding for the Defense Enterprise Fund, which focused on demilitarizing former Soviet defense industries.

By the mid-1990s, Congress and the Clinton Administration had agreed on a mandate for the CTR program that focused on the "core" objectives of securing and dismantling nuclear and chemical weapons, along with protecting against the proliferation of knowledge and materials that might be used in the production of these weapons by other nations. The Clinton Administration outlined this mandate in four key objectives for the CTR program:

- Destroy nuclear, chemical, and other weapons of mass destruction;
- Transport, store, disable, and safeguard these weapons in connection with their destruction;
- Establish verifiable safeguards against the proliferation of these weapons, their components, and weapons-usable materials; and
- Prevent the diversion of scientific expertise that could contribute to weapons programs in other nations.[19]

In the late 1990s, Congress added funds to the CTR budget for biological weapons proliferation prevention; this effort has expanded substantially in recent years. Congress also expanded the CTR program to allow the use of CTR funds for

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[18] For a more detailed description of the changes in the legislative mandate for the CTR program, see Congressional Research Service, Nunn-Lugar Cooperative Threat Reduction Programs: Issues for Congress. CRS Report 97-1027F. Updated March 6, 2002. pp. 11-13.

[19] U.S. Department of Defense. Cooperative Threat Reduction. April 1995. Washington, D.C. p. 4.

emergency assistance to remove weapons of mass destruction or materials and equipment related to these weapons from any of the former Soviet republics.[20]

Its first budget, in FY2002, the Bush Administration reduced CTR funding by nearly ten percent from over $440 million to $403 million. It also began a review of all U.S. threat reduction and nonproliferation assistance to Russia and the former Soviet states, stating that it sought to "ensure that existing U.S. cooperative nonproliferation programs with Russia are focused on priority threat reduction and nonproliferation goals, and are conducted as efficiently and as effectively as possible."[21] Some analysts welcomed the review, noting that it could provide an opportunity to revise and expand some programs, but others feared the review would lead to reductions in funding and the elimination of some programs.

When it announced the results of the review, the Administration stated that it found that "most U.S. programs to assist Russia in threat reduction and nonproliferation work well, are focused on priority tasks, and are well managed.[22] But the review did signal a shift in the focus of U.S. nonproliferation and threat reduction assistance. Instead of highlighting projects aimed at the elimination of nuclear weapons, the Administration indicated that it would expand some projects that focused on chemical and biological weapons nonproliferation, including increasing funding for the construction of a controversial chemical weapons destruction facility in Russia. For many, this change seemed to be a natural response, in the post-September 11 environment, to growing concerns about the potential link between terrorism and weapons of mass destruction. Others, however, saw it as a retreat from the long-standing core objectives of the CTR program.

The Administration confirmed this shift in focus with the release of its FY2004 budget request for CTR. Where the Administration requested and received $50 million in FY2002 and around $133 million in FY2003 for the construction of the chemical weapons destruction facility in Russia, it requested, and Congress authorized, $200.3 million in FY2004. This is nearly 45% of the total CTR budget request. The Administration also increased funding for biological weapons proliferation prevention from $17 million in FY2002 to around $55 million in FY2003 and $54.2 million for FY2004. In contrast, funding for strategic offensive arms elimination in Russia declined from $133.4 million in FY2002 to $70.1 million in FY2003 and $57.6 million in FY2004.[23]

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[20] DOD has used CTR funds for this purpose in several instances. For example, in November 1997, the United States purchased 21 nuclear-capable MIG-29 aircraft from the Republic of Moldova before Moldava could sell these aircraft to a nation seeking nuclear delivery capabilities. In April 1998, using CTR funds, the United States and Great Britain moved 8.8 pounds of highly enriched uranium and 17.6 pounds of highly radioactive spent fuel from a nuclear reactor outside Tbilisi, Georgia to Dounreay, Scotland.

[21] The White House. Fact Sheet. Administration Review of Nonproliferation and Threat Reduction Assistance to the Russian Federation. December 11, 2001.

[22] Ibid.

[23] The reduced request for FY2004 reflects, in part, the presence of unexpended balances from FY2003. The United States did not spend these funds because it could not initiate any

(continued...)

Furthermore, in testimony before the House Armed Services Committee, J.D. Crouch, the Assistant Secretary of Defense for International Security Policy, stated that the Administration had revised the four key objectives for CTR. The program now seeks to:

- Dismantle FSU (former Soviet Union) WMD (weapons of mass destruction) and associated infrastructure;
- Consolidate and secure FSU WMD and related technology and materials;
- Increase transparency and encourage higher standards of conduct;
- Support defense and military cooperation with the objective of preventing proliferation.[24]

Although most ongoing CTR projects are consistent with these objectives, the absence of any specific reference to the destruction of nuclear weapons is notable. In addition, by stating that the United States seeks to "encourage higher standards of conduct," the Bush Administration has indicated that it will place a higher priority on Russian openness, cooperation, and compliance with arms control agreements. This emphasis was evident in the Administration's decision against certifying Russia for CTR assistance in 2002. This also presents something of a departure from the past, when the United States raised issues of transparency, openness, and compliance with Russia during private meetings, but did not tie these issues directly to the goals of the CTR program.

CTR Funding

When Congress first passed the Nunn-Lugar Amendment, it authorized the *transfer* of $400 million in FY1992 funds from other DOD accounts for threat reduction activities in the former Soviet Union. Few of these funds were spent in FY1992, so Congress extended the transfer authority for FY1992 funds and authorized the *transfer* of an additional $400 million from other DOD accounts in FY1993. In subsequent years, the Clinton Administration requested, and Congress authorized new appropriations for the CTR program. **Table 1** summarizes the amount of funding the Presidents requested for the CTR program and the amount authorized by Congress in each of the fiscal years between 1992 and 2004. Congress has authorized more than $5.2 billion for CTR since 1992. The Bush Administration has requested an additional $409.2 million for CTR in FY2005.

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[23] (...continued)
new contracts during the period after the President did not certify Russia for participation in the CTR program and before Congress allowed the President to waive the certification requirement. See Statement of Dr. J.D. Crouch, II. March 4, 2003. p. 4.

[24] U.S. House. Committee on Armed Services Statement of Dr. J.D. Crouch II, Assistant Secretary of Defense for International Security Policy. March 4, 2003. p. 4.

Congress has approved the Administration's request for CTR funding in all but three years. In FY1996, the new Republican majority in the House questioned many elements of the CTR program and the House Armed Services Committee reduced funding to $200 million. The Senate had approved the Administration's request, and the Conference Committee agreed on a compromise of $300 million. The House also reduced the Administration's request in FY1997, approving $302.9 million for CTR, but the Senate *added* $37 million and the House eventually accepted the Senate's version in the Conference Committee.[25]

Table 1. CTR Funding: Requests and Authorization
($ millions)

Fiscal Year	1992	1993	1994	1995	1996	1997	1998
Request	$400	$400	$400	$400	$371	$328	$382.2
Auth.	$400	$400	$400	$400	$300	$364.9	$382.2
Fiscal Year	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**Total**
Request	$440.4	$475.5	$458.4	$403	$416.7	$450.8	$5,326
Auth.	$440.4	$475.5	$443.4	$403	$416.7	$450.8	$5,277

In FY2001, the House reduced President Clinton's request for CTR to $433 million. The Senate approved the full request and the Conference Committee settled on $443 million. This reduction was part of a dispute between the House, on one side, and the Senate and the Clinton Administration, on the other side, over funding for the chemical weapons destruction facility at Shchuch'ye in Russia. The House Armed Services Committee had reduced funding for that program in FY1998 and FY1999; in each of these two years, the Senate and the Conference Committee approved the Administration's requests. In FY2000, the House again eliminated all funding for the construction of Shchuch'ye and mandated, instead, that CTR fund security improvements at Russia's chemical weapons storage facilities. The Conference Committee accepted the House position, but still approved the Administration's request for $475.5 million for CTR. In FY2001, the Senate again accepted the House position banning funding for Shchuch'ye and, this time, accepted a small reduction in total funding for CTR.

In FY1996, when the Clinton Administration's request for CTR funding declined from $400 million to $371 million, total U.S. spending on threat reduction and nonproliferation assistance to Russia actually increased. In that year, the Materials Protection Control and Accounting Program (MPC&A) moved from DOD's CTR budget to the Department of Energy; the Clinton Administration requested and Congress authorized $70 million for DOE programs. In addition, $33 million in funding for the International Science and Technology Center in Moscow

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[25] This trend, with the House approving less than the President requested and the Senate approving the President's request, continued for several years. For details see Congressional Research Service. *Nunn-Lugar Cooperative Threat Reduction Programs: Issues for Congres*s. CRS Report 97-1027 F, by Amy F. Woolf. pp. 8-10.

moved from the DOD budget to the State Department budget. In subsequent years, as is noted in more detail below, funding continued to grow for the DOE and State Department programs.

CTR Projects

The Department of Defense divided the CTR program into three distinct project areas — chain of custody, destruction and dismantlement, and demilitarization.[26]

Chain of Custody. Chain of custody activities are those designed to enhance safety, security, and control over nuclear weapons and fissile materials. Many of these were completed during the early years of CTR. These programs were created, in part, in response to early concerns about the safety and security of weapons and materials in transit. The United States and the recipient nations also found it easier to agree on the implementation of projects that focused on transit and storage of nuclear weapons and materials than to focus on destruction activities. The brief descriptions that follow summarize some of the key chain of custody activities.[27]

Transportation Security. When the Soviet Union collapsed, thousands of nuclear weapons were spread among four of the newly independent states (Russia, Ukraine, Belarus, and Kazakhstan), and, within each state, the weapons were dispersed among hundreds of deployment and storage areas. Soviet President Gorbachev and Russia's President Yeltsin had both committed to removing non-strategic nuclear weapons (those with ranges less than 3,600 miles) from non-Russian republics and storing them in a smaller number of facilities in Russia. In 1992, after signing the Lisbon Protocol to the START I Treaty, Ukraine, Belarus, and Kazakhstan also pledged to return all the warheads based on their territories to Russia.[28]

The United States has helped Russia improve the safety and security of nuclear weapons in transit. It has provided armored blankets to protect warheads in transit from potential attacks, storage containers to hold the warheads during transit, and assistance to enhance the safety and security of rail cars used to transport warheads from deployment to storage or dismantlement facilities. Ongoing transportation security projects also provide Russia with emergency response vehicles, training, and support equipment that it might need to respond to a nuclear weapons transportation accident. Requested increases in funding for FY2005 will support the procurement

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[26] This division, and the description in the next few paragraphs come from U.S. Department of Defense. Cooperative Threat Reduction. April 1995. Washington, D.C. p. 5-6. The fourth category, "Other," includes administrative expenses and a special project on Arctic nuclear waste.

[27] The Defense Threat Reduction Agency (DTRA) provides more detailed descriptions of specific projects at its website. [http://www.dtra.mil/ctr/ctr_index.html]

[28] For a description of the nuclear weapons based in non-Russian republics in 1991, see Congressional Research Service. Nuclear Weapons in Russia: Safety, Security, and Control Issues. CRS Report RL32202, by Amy F. Woolf.

and maintenance of specialized warhead transportation railcars.[29] **Table 2** summarizes the amount of money that the United States has appropriated for many of these transportation security projects.

Table 2: CTR Funding for Transportation Security
($ millions)

Project	Fiscal Years	Total Appropriation
Armored Blankets	FY1992-FY1993	$3.1
Emergency Response	FY1992-FY1996	$29.2
Railcar security enhancements	FY1992-FY1994	$21.5
Weapons Transportation Security	FY1995-FY2004	$126 [(a)]

(a) The Administration has requested $26.3 million for FY2005.
Source: *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan*, by Matthew Bunn, et al. Project on Managing the Atom. March 2003.

Weapons Storage Security. Several CTR projects seek to help Russia improve security at storage facilities for strategic and tactical nuclear warheads. Russia has three types of storage sites — operational sites, storage sites, and rail transfer points. The United States does not provide assistance at operational sites. The Department of Energy has addressed security needs at rail transfer points that store warheads from the Russian Navy, and plans to do the same at one or more sites for the Strategic Rocket forces. Under the CTR program, DOD is working to enhance security at both large "national stockpile storage sites" and smaller storage sites at Navy, Air Force, and Strategic Rocket Force bases.[30] DOD plans to provide perimeter fencing, as a "quick fix" for vulnerable sites, and more comprehensive upgrades, including alarm systems and inventory control and management equipment to keep track of warheads in storage.

According to the GAO, this effort has been slowed by Russia's reluctance to provide the United States with information about the precise number of sites in need of security upgrades and its refusal to allow the United States access to sites to design appropriate upgrades. For example, DOD purchased 123 kilometers of perimeter fencing for weapons storage sites; the Russian Ministry of Defense (MOD) said it

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[29] Hoehn, William. *Preliminary Analysis of U.S. Department of Defense's Fiscal Year 2005 Cooperative Threat Reduction Budget Request*. RANSAC. February 10, 2004.

[30] The total number of sites remains classified. For details on DOD's plans, see U.S. General Accounting Office. *Weapons of Mass Destruction: Additional Russian Cooperation Needed to Facilitate U.S. Efforts to Improve Security at Russian Sites*. GAO-02-482. March 2003. p. 34.

would install the fences itself, but it has reportedly made little progress in doing so.[31] Furthermore, the United States has purchased and tested equipment for comprehensive upgrades, but it has not installed any of it because Russia's MOD has not allowed the United States access to the interior of any storage facilities. The United States and Russia completed agreements in February 2003 that will provide the United States with a degree of access to these sites.[32] U.S. personnel can now conduct site assessments and other activities that support the installation of physical security upgrades at a number of weapons storage locations. This change is reflected in an increase in funding for site security enhancements in the FY2005 budget request for CTR. In a complementary effort, the United States has constructed a Security Assessment and Training Center so that DOD and MOD personnel can test and select security systems for weapons storage sites. The United States is also helping Russia develop training programs for personnel with access to nuclear weapons.

Between FY1995 and FY2004, DOD appropriated just around $450 million for weapons storage security.[33] The Bush Administration has requested an additional $48.6 million for FY2005.

Fissile Materials Storage. According to unclassified estimates, Russia inherited more than 30,000 nuclear warheads from the Soviet Union, along with enough plutonium and highly enriched uranium (HEU) to produce thousands more warheads. As it consolidates and reduces its arsenal, Russia has begun to dismantle thousands of these warheads. Several CTR projects seek to improve the long-term security of the fissile materials removed from these weapons. **Table 3** summarizes the amount of money that the United States has appropriated for projects related to storage of fissile materials in Russia.

Table 3: CTR Funding for Fissile Materials Storage
($ millions)

Project	Fiscal Years	Total Appropriation
Fissile Material Containers	FY1992-FY2000	$82.2
Storage Facility Design	FY1993	$15
Storage Facility Construction	FY1994-FY2001	$387

Source: *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan*, by Matthew Bunn, et al. Project on Managing the Atom. March 2003.

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[31] Ibid. p. 36.

[32] U.S. House. Committee on Armed Services. Statement of Dr. J.D. Crouch, Assistant Secretary of Defense for International Security Policy. March 4, 2003.

[33] *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan*, by Matthew Bunn, et al. Project on Managing the Atom. March 2003.

The United States has provided Russia with more than 26,000 containers that will hold the fissile materials; it has also helped Russia design and build a highly secure storage facility at Mayak that will provide long-term safe and secure storage for these materials. This facility will hold more than 25,000 storage containers, or the equivalent of fissile material from 25,000 nuclear warheads. The first wing of this building was completed and certified for use in December 2003; it is now ready to receive nuclear materials for storage.[34] The United States and Russia no longer plan to construct an expected second wing.[35] The United States and Russia are still working, with little progress, to complete a "transparency agreement" that will allow the United States to confirm that materials stored in the facility actually came from dismantled warheads.

Destruction and Dismantlement. Destruction and dismantlement projects help with the elimination of nuclear, chemical, and other weapons and their delivery vehicles. To date, many of these projects have helped Russia, Ukraine, Belarus, and Kazakhstan remove warheads, deactivate missiles, and eliminate launch facilities for the nuclear weapons covered by the START I treaty. The Clinton Administration, and some analysts outside government, credited U.S. assistance in this area with providing Ukraine, Belarus, and Kazakhstan with an incentive to relinquish the nuclear weapons on their territories in the early 1990s.[36] When the Soviet Union collapsed in 1991, it had more than 11,000 warheads deployed on nearly 1,400 ICBMs, 940 SLBMs and 162 heavy bombers. According to the Defense Threat Reduction Agency, as of March 2003, CTR has helped deactivate more than 6,000 warheads, 499 ICBMs, 635 SLBMs, and 128 heavy bombers.[37] More than half of the funds appropriated for CTR support projects in this category. Some of the key areas of destruction and dismantlement projects are described below.

Strategic Offensive Arms Elimination. The United States has provided Russia, Ukraine, Belarus, and Kazakhstan with assistance in eliminating the launchers and infrastructure associated with strategic nuclear weapons deployed on their territories. This effort is complete in Belarus and Kazakhstan; it continues in Russia and Ukraine, although it is also nearing completion in Ukraine. The United States has provided the recipient nations with the technology and expertise needed to deactivate and dismantle missiles, launchers, submarines, and bombers. It has also helped construct storage facilities for missiles removed from deployment and fuel removed from deactivated missiles. In May 2003, the United States began destroying

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[34] U.S. Senate. Committee on Armed Services. Cooperative Threat Reduction Program. Testimony of Lisa Bronson, Deputy Undersecretary of Defense for Technology Security Policy and Counterproliferation. March 10, 2004. (Herein after referred to as Bronson Testimony.)

[35] The absence of funding for the second wing of Mayak was responsible for a significant portion of the decline in the Bush Administration request for CTR funding, from $443 million in FY2001 to $403 million, in FY2002.

[36] U.S. Department of Defense. *Cooperative Threat Reduction*. April 1995. Washington, D.C. p. 1.

[37] For the full CTR scorecard, see Defense Threat Reduction Agency, [http://www.dtra.mil/ctr/ctr_score.html].

rail-mobile ICBMs and their launchers in Russia. **Table 4** summarizes the amount of money that the United States has appropriated for several key strategic offensive arms elimination projects.[38]

One project funded in this category, the construction of a plant to dispose of liquid fuel removed from Soviet ICBMs, has recently raised concerns among some in Congress. The United States constructed the facility at a cost of nearly $100 million. However, during construction, Russia used much of the fuel in rockets in its space-launch program. Consequently, in 2002, Russia informed the United States that it did not have any fuel for the facility.[39] Representative Duncan Hunter has sought further information about this episode, stating that it represents an example of the potential for waste in the CTR program.[40] Others, however, note that, although unfortunate, this case is the exception in a program that has spent more than $4 billion on threat reduction projects.

Table 4: CTR Funding for Strategic Offensive Arms Elimination (SOAE)

($ millions)

Nation	Fiscal Years	Total Appropriation
Russia	FY1993-FY2004	$1,170.3[(a)]
Ukraine	FY1993-FY2004	$575.4[(b)]
Kazahkstan	FY1994-FY1996	$64.6
Belarus	FY1994-FY1996	$3.3

(a) The Administration has requested $58.5 million for this effort in FY2005.
(b) The Administration has not requested any additional funds for this effort in FY2005.
Source: *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan*, by Matthew Bunn, et al. Project on Managing the Atom. March 2003.

WMD Infrastructure Elimination. Through the CTR program, the United States is helping Ukraine eliminate equipment and facilities that supported the deployment and operation of nuclear weapons. These facilities include liquid missile propellant storage facilities, nuclear weapons storage facilities, and infrastructure at bomber bases. The United States is also helping Kazakhstan secure fissile materials, as well as eliminate facilities at a nuclear weapons storage area and a former

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[38] For a more detailed breakdown of projects in this program area, see U.S. House. Committee on Armed Services. Statement of Dr. J.D. Crouch, Assistant Secretary of Defense for International Security Policy. March 4, 2003. p. 4. See also U.S. Department of Defense. Fiscal Year 2004/2005 Biennial Budget Estimates. Former Soviet Union Threat Reduction Appropriation. February 2003. pp. 16-21.

[39] U.S. House. Committee on Armed Services. Statement of David K. Steensma, Deputy Assistant Inspector for Auditing, Department of Defense Office of the Inspector General. March 4, 2003.

[40] Hunter, Duncan. "Wasteful 'Threat Reduction' in Russia." *Washington Post*. March 4, 2003. p. 23.

chemical weapons production facility.[41] Between FY1994 and FY2003, DOD appropriated $38.2 million for this program in Ukraine and $44.5 million in Kazakhstan. It did not request any additional funds for FY2004 or FY2005.

Chemical Weapons Destruction. The Soviet Union had the largest stockpile of chemical weapons in the world. Russia declared this stockpile to contain 40,000 metric tons of chemical weapons. The United States has questioned the accuracy and completeness of this declaration, a factor that contributed to Russia's loss of certification for CTR programs in FY2002. Russia's chemical weapons are stored at seven sites in Russia; five sites contain nerve agents in bombs and artillery shells, three of these sites and two additional sites house bulk stocks of blister agents.[42] Russia has committed, under the Chemical Weapons Convention (CWC), to destroy these stocks by 2007 (it has requested an extension until 2012), but it contends that it lacks the financial resources to meet this deadline. A European consortium, led by Germany, has constructed a destruction facility at Gorny to destroy the blister agent.[43] The United States is assisting Russia with the design and construction of a facility at Shchuch'ye to destroy all of Russia's nerve agent. The chemical weapons storage facility at Shchuch'ye contains nearly half of Russia's stockpile of artillery shells filled with nerve agent.[44] The new facility is intended to destroy these stocks and those stored at the other four storage sites. Construction on this facility began in March 2003.

This project has been at the center of much debate during the past five years. In FY1999, the House tried to reduce the amount of CTR funding requested for Shchuch'ye by $53.4 million, arguing that Russia's chemical weapons posed more of an environmental problem for Russia than a threat to U.S. security.[45] The Defense Authorization Bills for FY2000 and FY2001 prohibited any additional funding for Shchuch'ye. Congress resumed funding Shchuch'ye in FY2002, when the Bush Administration requested $50 million for the project. However, in FY2003, when the Bush Administration requested $133.6 million for Shchuch'ye, the House balked again, and approved $50 million. The House Armed Services Committee argued that the program could not absorb such a large increase in one year and, because Russia did not yet appear committed to the elimination of its chemical weapons, the United States should not accelerate its efforts. The Conference Report (107-772) also

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[41] U.S. Department of Defense. Fiscal Year 2004/2005 Biennial Budget Estimates. Former Soviet Union Threat Reduction Appropriation. February 2003. p. 9.

[42] U.S. General Accounting Office. *Weapons of Mass Destruction: Additional Russian Cooperation Needed to Facilitate U.S. Efforts to Improve Security at Russian Sites*. GAO-02-482. March 2003. pp. 58-59.

[43] For a description of this facility and program see Glasser, Susan B. "Cloud Over Russia's Poison Gas Disposal." Washington Post. August 24, 2002. p. 1

[44] The Department of Defense estimates this to be 5,460 metric tons of agent in nearly 2 million rocket and artillery warheads. See U.S. Department of Defense. Fiscal Year 2004/2005 Biennial Budget Estimates. Former Soviet Union Threat Reduction Appropriation. February 2003. p. 4

[45] U.S. Congress, House, Committee on National Security. National Defense Authorization Act For Fiscal Year 1999. Report 105-532, Washington, D.C. May 12, 1998. p. 352.

limited funding for Shchuch'ye to $50 million, but it stated that the Administration could use the remaining $83.6 for other projects related to the storage and elimination of nuclear weapons, or for chemical weapons destruction if Russia provides a "full and accurate" disclosure of its chemical weapons stockpile.

The Bush Administration requested $200 million for this project in FY2004. The Senate approved this amount, but the House, in its version of the FY2004 Defense Authorization Bill (H.R. 1588), reduced the funding to $171.5 million. It also mandated that the United States could only release funds in excess of $71 million if Russia and other nations contributed to the project. Specifically, the U.S. contribution could not exceed the other nations' contribution by more than a factor of two. These provisions reflect concerns expressed by some in the House about a lack of financial commitment from Russia and other European nations to the Shchuch'ye project. The Conference Committee rejected the House position, approving the full $200 million for Shchuch'ye and eliminating the linkage of U.S. funding to funding from other nations. Nevertheless, by December 2003, six other countries had contributed $69 million to the project.[46]

The Bush Administration has requested $158.4 million for Shchuch'ye in FY2005. The reduction in funding for this project represents most of the reduction in the overall CTR budget between FY2004 and FY2005. This reduction in funding does not derive from any significant policy debates about the project; instead it occurred because the FY2004 budget included funding for a one-time investment in capital-intensive construction equipment. The United States does not need to repeat this investment in FY2005.[47]

Congress has also fenced funding for Shchuch'ye, subjecting it to a number of certifications. For example, the legislation states that the President must certify that Russia is committed to providing at least $25 million per year to help construct and operate the facility; that Russia was committed to destroying all its remaining nerve agent; that other nations were committed to contributing to the construction of this facility; and that Russia is forthcoming with data about its chemical weapons stockpile. The President has requested that Congress allow him to waive the certification requirement, so that construction could continue, even if Russia has not met all the conditions. Congress provided the President with waiver authority, but only for one year, in the FY2003 Defense Authorization Bill (P.L. 107-248).[48] It extended this waiver authority by one more year in the FY2004 Defense Authorization Bill (H.R. 1588); the Administration submitted this waiver in early December 2003.[49]

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[46] Bronson Testimony, March 10, 2004.

[47] Ibid.

[48] The waiver authority for the certification requirements from Shchuch'ye is different from the waiver authority the President sought for the broader certification requirements included in the CTR legislation. These are discussed in more detail below.

[49] Memorandum for the Secretary of State, Presidential Determination No. 2004-10. Presidential Determination on Waiver of Conditions on Obligation and Expenditure of (continued...)

Between FY1992 and FY2004, DOD allocated $637 million for design and construction at Shchuch'ye. Funding remained low during the first few years of the CTR program, while the United States and Russia worked to develop destruction technologies and to design the facility, but it increased sharply in FY1997-FY1999 before Congress suspended the project. Congress also appropriated $20 million, in FY1999, to improve security at Russia's chemical weapons facilities. Congress mandated this program, after denying funds for chemical weapons destruction. DOD complete security work at two sites in December 2003, and does not intend to expand the program, as this would be a short term effort since Russia has committed to destroy its stockpile.

Biological Weapons Proliferation Prevention (BWPP). The Soviet Union reportedly developed the world's largest biological weapons program, employing an estimated 60,000 people at more than 50 sites. This weapons complex developed a broad range of biological pathogens for use against plants, animals, and humans.[50] Russia reportedly continued to pursue research and development of biological agents in the 1990s, even as the security systems and supporting infrastructure at its facilities began to deteriorate. The United State began to provide Russia with CTR assistance to improve safety and security at its biological weapons sites and to help employ biological weapons scientists during the late 1990s, even though Russia has not provided a complete inventory of the sites or people involved in biological weapons work.[51]

The CTR program supports three separate BWPP programs, working at 49 sites that include many weapons facilities. Through the BWPP Dismantlement program, the United States is helping Russia eliminate the infrastructure and equipment at those Biological Research and Production Centers (BRPCs) that have the capability to produce biological weapons. Through the Security Enhancements program, the United States is helping to enhance safety and security at these centers to ensure the safe and secure storage and handling of biological pathogens. Finally, through Cooperative Biodefense Research, the United States and Russia are using cooperative research projects to increase transparency and discourage the "leakage" of Russian biological weapons knowledge to other nations. Each of these programs is implemented through the International Science and Technology Centers, because DOD has been unable to conclude implementing agreements with the relevant ministries in Russia.[52] In addition, CTR funding helped destroy the huge biological weapons production facility in Stepnogorsk, Kazakhstan.

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[49] (...continued)
Funds for Planning, Design, and Construction of a Chemical Weapons Destruction Facility in Russia. The White House. December 9, 2003.

[50] For a more details on the BWPP programs see Congressional Research Service. Preventing Proliferation of Biological Weapons: U.S. Assistance to the Former Soviet States. CRS Report RL31368, by Michelle Stem Cook and Amy F. Woolf.

[51] U.S. General Accounting Office. *Weapons of Mass Destruction: Additional Russian Cooperation Needed to Facilitate U.S. Efforts to Improve Security at Russian Sites.* GAO-02-482. March 2003. pp. 48-49.

[52] Ibid. p. 54.

The potential proliferation of biological weapons poses one of the key challenges for U.S. nonproliferation assistance to Russia.[53] According to the General Accounting Office, progress in gaining Russia's cooperation and implementing these projects has been very slow. The United States has found it particularly difficult to gain access to four key military facilities. The problem is further aggravated by the fact that Russia is reducing the size of its complex, leaving many scientists potentially unemployed or underemployed. In addition, biological pathogens are small, and easily transported, further increasing the proliferation risk.[54] The Bush Administration has expressed its support for these efforts and plans to expand them in the future. Between FY1997 and FY2003, DOD appropriated just under $110 million for these projects, with half of that amount, $55 million, appropriated in FY2003 alone.

The Bush Administration requested an additional $54.2 million for BWPP in FY2004. Congress approved this amount, but attached some restrictions to the funding. In its version of the FY2004 Defense Authorization Bill (H.R. 1588), the House had sought to prohibit funding cooperative research at any site in the Soviet Union until the Secretary of Defense could certify that the site did not house any prohibited biological weapons research, until the facility had conducted an assessment of its vulnerability to the loss or theft of pathogens and until it had begun to implement measures to reduce its vulnerability to the loss or theft of biological agents. The Conference Committee modified this measure, stating that CTR could not fund cooperative research at a facility until the Secretary of Defense determines that no prohibited research occurs at the facility and until the facility plans to implement appropriate security measures. It also permitted the use of up to 25% of the funds authorized for the project to be expended on making these determinations.

The Bush Administration has requested a similar amount — $55 million — for biological weapons proliferation prevention in FY2005. However, within this total, the Administration has shifted funding away from Cooperative Biodefense Research projects, reducing this area from $36.6 million in FY2004 to $13.1 million in FY2005, towards bio-security and bio-safety efforts. This shift reflects, in part, the Congressional concerns with possible U.S. support for ongoing Russian biological weapons programs. It also derives from the Administration's plans to expand U.S. bio-safety and bio-security assistance into facilities in Kazakhstan and Uzbekistan and Georgia.[55]

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[53] "The security of existing pathogen libraries, the past scope of work, the current whereabouts of BW and BW-related experts, and the future disposition of the FSU biological weapons capability are all critical concerns within the threat reduction agenda." *Reshaping U.S.-Russian Threat Reduction: New Approaches for the Second Decade. Carnegie Endowment for International Peace and Russian American Nuclear Security Advisory Council*. November 2002. p. 2.

[54] U.S. General Accounting Office. *Weapons of Mass Destruction: Additional Russian Cooperation Needed to Facilitate U.S. Efforts to Improve Security at Russian Sites*. GAO-02-482. March 2003. pp. 44-46.

[55] Hoehn, William. *Preliminary Analysis of U.S. Department of Defense's Fiscal Year 2005 Cooperative Threat Reduction Budget Request*. RANSAC. February 10, 2004.

Demilitarization Programs. *Demilitarization* programs include projects that are encouraging Russia, Ukraine, Belarus, and Kazakhstan to convert military efforts to peaceful purposes. The International Science and Technology Center, which provides grants to Russian weapons scientists and supports cooperative research with biological weapons scientists, began with funding in this category. Funds for demilitarization also support Defense and Military contacts between officers in the United States and those in the former Soviet republics. According to DOD, these contacts between the defense establishments help "promote counter-proliferation, demilitarization, and democratic reforms."[56] This program includes representatives from Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Ukraine, and Uzbekistan. DOD has appropriated just over $100 million for Defense and Military contacts over the life of the CTR program; the Bush Administration requested an additional $11 million for FY2004.

The Bush Administration added a new demilitarization program in FY2003. Through the WMD Proliferation Prevention Program, the United States is cooperating with the military establishments, internal security forces, border guards, and custom forces in Kazakhstan, Ukraine, Uzbekistan, and Azerbaijan to improve their border controls. This is intended to help them to deter, detect, and interrupt the unauthorized movement of weapons or related materials across their borders.[57] Congress appropriated $40 million for this program in FY2003; the Bush Administration requested $39.4 million in FY2004, but only received $29 million. It has requested an additional $40 million for FY2005.

State Department

The State Department has played an integral role in U.S. nonproliferation and threat reduction programs since their inception. It has taken the lead in negotiating the broad agreements needed before recipient nations can receive U.S. assistance and in providing for broad policy coordination among the U.S. agencies and between the United States and recipient nations. The State Department also manages the Nonproliferation and Disarmament Fund (NDF), which it can use to help nations address problems with proliferation-prone weapons located on their territories. Congress has appropriated approximately $15 million for this fund each year since 1993. The Bush Administration has requested $35 million for NDF in FY2004. It plans to expand U.S. efforts to help countries establish better accounting and control mechanisms for nuclear, chemical, and biological materials.[58] According to John Wolf, the Assistant Secretary of State for Nonproliferation, the State Department also plans to use these funds to "focus on unanticipated opportunities to eliminate missile systems, chemical agents, and to secure orphaned radiological sources."[59] The State

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[56] U.S. Department of Defense. Fiscal Year 2004/2005 Biennial Budget Estimates. Former Soviet Union Threat Reduction Appropriation. February 2003. p. 6.

[57] Ibid. p. 10.

[58] U.S. Senate. Committee on Foreign Relations. Testimony of John S. Wolf. Assistant Secretary of State for Nonproliferation. March 19, 2003.

[59] U.S. House. Committee on International Relations. Subcommittees on Europe and (continued...)

Department spent a total of around $38.5 million from this fund between FY1996 and FY2002 in the former Soviet Union.[60]

The State Department also manages and funds the International Science and Technology Center (ISTC) in Moscow, and its companion Science and Technology Center (STCU) in Kiev, Ukraine. In the FY2005 budget request, it has combined these centers and the biological weapons redirect program into a new category, called Nonproliferation of WMD expertise. The State Department also manages the Export Control and Related Border Security Assistance (EXBS) Program. The following discussion provides more detail about these two program areas.[61]

Nonproliferation of WMD Expertise (Science and Technology Centers)

After the collapse of the Soviet Union in 1991, many experts feared that scientists from Russia's nuclear weapons complex might sell their knowledge to other nations seeking nuclear weapons. Many of these scientists had worked in the Soviet Union's "closed" nuclear cities where they had enjoyed relatively high salaries and prestige, but their jobs evaporated during Russia's economic and political crises in the early 1990s. Even those scientists who retained their jobs saw their incomes decline sharply as Russia was unable to pay their salaries for months at a time.

In late 1992, the United States, Japan, the European Union, and Russia established the International Science and Technology Center (ISTC) in Moscow. Several other former Soviet states joined the center during the 1990s, and other nations, including Norway and South Korea, added their financial support. In late 1993, the United States, Canada, Sweden, and Ukraine established the Science and Technology Center in Ukraine (STCU). Several former Soviet states have also joined this center, and Japan has joined to provide financial support. In its review of U.S. threat reduction and nonproliferation assistance, the Bush Administration cited these centers for their achievements and indicated that it planned to expand them.

The State Department has stated that, between 1994 and late 2002, about 50,000 scientists and engineers participated in research funded by these centers. The Moscow Center funded nearly 1,700 projects that engaged about 41,000 scientists. In 2001, the ISTC in Moscow supported more than 22,000 scientists with more than $29 million in direct grants.[62] The centers fund scientists who have worked on nuclear, chemical, and biological weapons, but they have, historically, focused on

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[59] (...continued)
International Terrorism, Nonproliferation and Human Rights of the House Committee on International Relations Hearing on U.S. Cooperative Threat Reduction and Nonproliferation Programs. May 8, 2003.

[60] *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan*, by Matthew Bunn, et al. Project on Managing the Atom. March 2003

[61] For a more details see *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan*, by Matthew Bunn, et al. Project on Managing the Atom. March 2003.

[62] Ibid.

nuclear scientists, with many projects going to those who work at institutes in the closed nuclear cities. The State Department estimates that about half of the participants are senior scientists, which means the programs may have reached a significant portion of the estimated 30,000 to 70,000 senior scientists and engineers in the Soviet nuclear complex. However, most of these scientists spend fewer than 50 days per year on projects funded by the science centers. In the remainder of the time, most continue to work at their primary jobs. In addition, some of the grants go to research institutes in Russia, rather than directly to scientists, and some of these funds may be used for administrative or management purposes. Nevertheless, the income earned from even short-term research projects may undermine incentives these individuals might otherwise encounter to sell their knowledge to potential proliferant nations.

The Science Centers also sponsor a Partners Program, through which private industry, universities, and other government agencies can provide funding for and establish contacts with former Soviet scientists. The program started small, with about 30 partners and $5 million in projects in 1997; it had grown to 166 partners supporting over 100 projects worth $31 million in 2002. This represented one quarter of the grant funding provided by the science centers in 2002.[63]

As of early November, 2002, the ISTC in Moscow had received $481 million from its participating nations, with the United States providing about $171 million of this total. The STCU in Kiev had received about $60.5 million, with the United States providing about $45 million of this total. The United States has also provided around $70 million to the ISTC since FY1998 to support the Biological Weapons Redirection Program.[64] This program provides research grants to Russian biotechnology institutes to redirect scientists to commercial, agricultural, and public health projects. The State Department collaborates with several other U.S. agencies in this program.[65] In recent years, it has begun to shift grant funding away from Russia's nuclear scientists to biological and chemical weapons scientists, thus re-naming the program the Bio-Chem Redirection program, and to scientists from other former Soviet states. Further, it expects this decline in funding to force the ISTC to focus more on "graduating scientists" from U.S. assistance to projects with more commercial viability.[66] The State Department operates a third program within this category, known as the Bio Industry Initiative (BII). This initiative, which began in 2002, seeks to help Russia reconfigure its large-scale former BW-related facilities so that they can perform peaceful research issues such as infectious diseases.

For FY2004, the Bush Administration requested $59 million for the science centers and BW redirection programs, and received about 50.2 million. It did not

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[63] Ibid.

[64] Ibid.

[65] For more details see Congressional Research Service. *Preventing Proliferation of Biological Weapons: U.S. Assistance to the Former Soviet States.* CRS Report RL31368, by Michelle Stem Cook and Amy F. Woolf.

[66] U.S. Department of State. FY2004 Congressional Budget Justification for Foreign Operations. p. 370.

identify the precise funding for either of the two. In its FY2005 budget, it has requested $50.5 million, with about $30.5 million going to the science centers, $17 million going to the Bio-Chem Redirect program, and $3 million going to the BII.[67]

Analysts have raised numerous questions about the science center programs. One of the first critiques came from the General Accounting Office, in a study published in 1995. GAO found that some scientists who received grants from the ISTC "may also continue to be employed by institutes engaged in weapons work."[68] GAO interpreted this finding to mean that the centers had not succeeded in redirecting weapons scientists to peaceful endeavors. Other critics of the CTR program claimed that GAO's findings indicated that, by supporting Russian weapons scientists, U.S. funds were supporting Russian weapons programs. The State Department disputed both of these conclusions, noting that the grants from the ISTC were intended to supplement, not replace the scientists' income from work in other institutes. And, in the years since this report, the State Department has enhanced its auditing procedures to ensure that ISTC grants support the assigned projects and do not support work on Russian weapons.

Analysts have also noted that the ISTC and STCU do not have enough money to support full pay for a significant number of scientists. Consequently, some have questioned whether the centers achieve their objective of keeping these scientists away from nations or groups seeking weapons of mass destruction. Others, however, note that, even if the financial support is less than complete, the cooperation with Russian institutes, and the promise of a fairly steady stream of funding, helps build relationships and draw these institutes into the "western orbit."[69] To address this problem, some have suggested that, instead of providing short term grants, the centers should focus on projects that will lead to the long-term redirection of scientists out of weapons work. The State Department seems to agree with this approach with its growing reliance on the Partners Program and its acknowledged need to transition Russia's nuclear scientists to more commercially viable projects.

Export Control and Related Border Security Assistance

Many view the potential for smuggling or illegal exports of materials and technology from the former Soviet Union as a key proliferation concern. The collapse of political control along the Soviet borders, along with incentives created by the weakness in the economies of the newly independent states, contribute to this growing concern. The State Department's Export Control and Related Border Security Assistance (EXBS) program helps the former Soviet states and other nations improve their ability to interdict nuclear smuggling and their ability to stop the illicit

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[67] U.S. Department of State. FY2005 Congressional Budget Justification for Foreign Operations. p. 135.

[68] U.S. General Accounting Office. *Weapons of Mass Destruction, Reducing the Threat From the Former Soviet Union: An Update*. GAO/NSIAD-95-165, June 1995. Washington, D.C. p. 27.

[69] *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan*, by Matthew Bunn, et al. Project on Managing the Atom. March 2003.

trafficking of all materials for weapons of mass destruction, along with dual use goods and technologies. The EXBS program currently has projects underway in more than 30 nations, and is expanding its reach around the globe.[70]

When designing a nation-specific plan for border control assistance, the United States seeks to address four key areas. First, if needed, it helps the recipient nation establish the legal and regulatory basis for effective export controls. It then helps the nation develop appropriate export licensing procedures and practices. Third, the United States helps the recipient establish and enhance effective enforcement capabilities. When needed, it provides the recipient with detection and interdiction equipment and training. Finally, the United States helps establish procedures that promote effective interaction between government and industry so that business entities in the recipient nation will abide by the laws and regulations of the new export control regime.

The State Department also provides support to border control efforts in DOD's CTR program and the DOE's nonproliferation program. It seeks to coordinate these and other U.S. efforts to identify and stop the smuggling of nuclear, chemical, and biological weapons or materials. Analysts inside and outside the government have questioned, however, whether the coordination has been effective. Consequently, the National Security Council is leading an effort to develop a government-wide strategic plan for interdiction assistance, which includes but is not limited to export assistance, that might help stop the smuggling of weapons of mass destruction.

Between FY1998 and FY2002, the State Department allocated $146 million to the EXBS program for nations in and around the former Soviet Union. Approximately $100 million of this amount was allocated to Georgia for its border security program. Funding for border security in the rest of the former Soviet states was around $5-$7 million per year, until the State Department added $24.7 million from the FY2002 supplemental appropriations. In FY2003, the State Department requested around $17 million for the EXBS program, with an additional $15 million allocated to the Georgia Border Security Program. Funding may decline in FY2004; the Bush Administration requested $13.9 million for EXBS and an additional $15 million for the Georgia Border Security program. In FY2005, the Bush Administration requested a total of $38 million for EXBS, although only around $19 million is allocated to projects in nations in and around the former Soviet Union. An additional $11.5 million is allocated "global" efforts, with the remaining $7 million allocated to projects in other nations around the world.

Department of Energy

The Department of Energy has contributed to U.S. threat reduction and nonproliferation assistance to the former Soviet states from the start, when CTR included a small amount of funding for materials control and protection. Officials from DOE participated, along with their counterparts at DOD, in early efforts to

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[70] U.S. Senate. Committee on Foreign Relations. Testimony of John S. Wolf. Assistant Secretary of State for Nonproliferation. March 19, 2003.

outline projects and reach agreement with Russian officials on assistance to secure nuclear materials. But these government-to-government negotiations proceeded slowly, in part because Russia's nuclear energy ministry — Minatom — was less open to cooperation than the Ministry of Defense. Consequently, projects at facilities that housed nuclear materials did not begin until 1994. In a parallel effort that sought to reduce these delays, experts from the U.S. nuclear laboratories, which are a part of DOE, also began less formal contacts with their counterparts in Russia to identify and solve safety and security problems at Russian facilities. Together, these government-to-government and lab-to-lab projects evolved into an effort to apply Material Protection, Control and Accounting (MPC&A) techniques to Russian facilities.

The MPC&A program began with less than $3 million in FY1993. This amount grew to $73 million in FY1995. In FY1996, DOE assumed budgetary and management responsibility for the program. DOE also initiated a second program, the Initiatives for Proliferation Prevention, which sought to provide employment opportunities for scientists and engineers from Russia's nuclear weapons complex. In the latter half of the 1990s, DOE expanded these efforts and added several other programs to its nonproliferation assistance. These programs are now managed by DOE's National Nuclear Security Administration (NNSA). The discussion below summarizes the objectives and achievements of many of these efforts.[71]

International Nuclear Materials Protection and Cooperation

The International Nuclear Materials Protection and Cooperation program seeks to "secure nuclear weapons, weapons-usable nuclear materials, and radiological sources by upgrading security at nuclear sites, consolidating these materials to sites where installation of enhanced security systems have already been completed, and improving nuclear smuggling detection capabilities at international borders."[72] The MPC&A program and Radiological Dispersion Devices[73] program address the first of these three objectives; the Materials Consolidation and Conversion Program addresses the second; and the Second Line of Defense program addresses the third. Each of these is discussed below.

MPC&A Funding. The budget for MPC&A grew rapidly during the 1990s, reaching $169 million in FY2001, the last year of the Clinton Administration. The Bush Administration, in its budget request for FY2002, reduced funding for the

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[71] As was the case with the summaries of DOD and State Department programs, these descriptions do not cover all DOE programs. A complete description of the programs funded under DOE's Defense Nuclear Nonproliferation Budget can be found in DOE's budget documents. See U.S. Department of Energy. FY2004 Congressional Budget Request. Detailed Budget Justifications. February 2003. pp. 623-766.

[72] U.S. Department of Energy. FY2004 Congressional Budget Request. Detailed Budget Justifications. February 2003. p. 623.

[73] In the FY2005 budget request, this initiative is combined with two others in a single initiative known as "International Nuclear and Radiological Cleanout." See 2005 DOE Budget Rollout. Remarks by Secretary of Energy Spencer Abraham. February 2, 2004, Washington, D.C.

MPC&A program to $138.8 million, in part because it believed that the program had enough unexpended funds from prior years to carry on with less funding. Its first budget also shifted money from Defense Nuclear Nonproliferation Programs to U.S. nuclear weapons programs. Congress objected to this reduction, and both the Senate and House Appropriations Committees, in the Energy and Water Appropriations bills for FY2002, restored funding to the FY2001 level. Furthermore, Congress added $150 million in a supplemental appropriations bill passed at the end of 2001, after the September 11 attacks had raised new concerns about the potential threat that terrorists might seek to acquire nuclear materials from insecure facilities in Russia. The Bush Administration allocated much of this new funding to the Second Line of Defense and Radiological Dispersion Devices. But the Bush Administration did increase its budget request for MPC&A in FY2003, to $223 million, so that it could accelerate the installation of comprehensive upgrades and material consolidation and conversion efforts.[74] The Bush Administration requested $227 million for these efforts for FY2004; Congress approved $260 million, adding $5 million for "high priority" activities and $28 million for an initiative under the Second Line of Defense Program (described below). The Bush Administration has requested $238 million for MPC&A in FY2005. The reduction from FY2004 to FY2005 reflects, in part, the completion of physical security upgrades at Russian Navy warhead storage sites.[75]

Between FY1993 and FY2003, Congress appropriated nearly $1.35 billion for the MPC&A program. With the exception of $46 million in FY2002 and $24 million in FY2003 for the Second Line of Defense Program, all of these funds were allocated to efforts to improve security at nuclear warhead and nuclear material storage facilities in Russia. NNSA has identified 105 of these nuclear sites, with 243 buildings, that may need assistance in improving their security systems. According to NNSA, these sites contain approximately 600 metric tons of nuclear materials, enough for around 41,000 nuclear warheads. Within this total, 63 sites belong to the Ministry of Defense, (52 warhead storage site and 11 Navy fuel storage sites), 11 are a part of the Minatom weapons complex, and 31 are civilian sites. More than 80% of these materials are located at the Minatom sites.[76]

MPC&A Projects. DOE provides MPC&A assistance at Russian facilities in two phases. First, it installs rapid upgrades that are designed to delay unauthorized access to the storage facilities. These may include the installation of hardened doors and windows, locks and keys to control access, perimeter fences, and moveable barriers at entry points. The second phase provides comprehensive upgrades that are tailored to meet the security needs at each individual facility. These may include monitoring and detection systems, the relocation of guard forces, the consolidation of materials, central alarm systems, and electronic access control systems. DOE has helped improve security at sites that house about 46% of the former Soviet Union's

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[74] U.S. House. Committee on Appropriations. Statement of Spencer Abraham, Secretary of Energy. March 6, 2002.

[75] Hoehn, William. *Preliminary Analysis of U.S. Department of Energy's Fiscal Year 2005 Nonproliferation Budget Request*. RANSAC. February 4. 2004.

[76] Ibid. p. 625.

600 metric tons of weapons-usable nuclear materials.[77] By the end of 2004, DOE had completed rapid upgrades at facilities housing about 60% of this material and comprehensive upgrades at facilities that house about 26% of this material. It stated that continuing progress would allow it to complete comprehensive upgrades at sites housing 37% of this material by the end of 2005.[78] When the upgrades are complete, DOE plans to continue "sustainability efforts" to ensure that the upgrades remain effective in the long term. This program, titled National Programs and Sustainability, seeks to create regulations, reporting requirements, training and maintenance facilities, and other infrastructure components to ensure that Russia can continue to operate its new security systems.[79] However, in the FY2005 budget request, DOE has reduced funding for this initiative from $28 million to $27 million, continuing a trend of recent years. DOE noted, in its budget materials, funding in this area has declined because DOE has altered it priorities to support increased funding for MPC&A activities in countries outside the former Soviet Union.[80]

Navy Complex. DOE has provided assistance to Russia's Navy by improving security at 39 naval nuclear warhead storage sites and 11 nuclear fuel storage sites. These sites house approximately 60 metric tons of weapons-useable nuclear materials and 4,000 nuclear warheads. According to DOE, it had completed rapid upgrades at all naval nuclear fuel storage sites, and planned to complete the comprehensive upgrades in FY2003. It also plans to complete upgrades at 90% of the warhead sites by the end of FY2004. The FY2005 budget request includes $15 million for this program area.

Strategic Rocket Forces. DOE has recently initiated security upgrades at two warhead storage sites for Russia's strategic rocket forces. It estimates that this effort may eventually expand to include 10 sites, out of an estimated 25 sites that store nuclear warheads. This effort is in addition to DOD's work at more than 90 nuclear warhead storage sites under the control of Russia's 12th Main Directorate, the branch of Russia's Ministry of Defense that is responsible for warhead security and maintenance. DOE has requested $45 million to continue these activities in FY2005.

Minatom Weapons Complex. Russia's nuclear weapons complex, managed by Minatom, consists of seven sites and four "Enterprises of the Nuclear Weapons Complex" in Russia's closed nuclear cities. The buildings in this complex house

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[77] U.S. Senate. Committee on Foreign Relations. Statement of Ambassador Linton Brooks. Administrator, NNSA. June 15, 2004. See also, U.S. General Accounting Office. Weapons of Mass Destruction. Additional Russian Cooperation Needed to Facilitate U.S. Efforts to Improve Security at Russian Sites. GA)-03-482. Washington, March 2003. p. 4. See also, U.S. Senate, Committee on Armed Services. Statement of Paul M. Longsworth. Deputy Administrator for Defense Nuclear Nonproliferation. March 10, 2004. (Herein after referred to as Longsworth Testimony.)

[78] 2005 DOE Budget Rollout. Remarks by Secretary of Energy Spencer Abraham. February 2, 2004, Washington, D.C.

[79] For more details see U.S. Department of Energy. FY2004 Congressional Budget Request. Detailed Budget Justifications. February 2003. p. 655.

[80] Hoehn, William. *Preliminary Analysis of U.S. Department of Energy's Fiscal Year 2005 Nonproliferation Budget Request*. RANSAC. February 4. 2004

around 500 metric tons of "highly attractive" weapons-useable materials.[81] DOE has completed rapid upgrades on buildings that house 20-30% of these materials, and comprehensive upgrades on buildings that house less than 5% of these materials. It plans to secure about 37% of these materials by the end of 2005. NNSA has completed work at only 14 of 133 buildings in need of upgrades in the nuclear weapons complex.[82] It hopes to install security upgrades at all these facilities by 2008. The General Accounting Office, however, has questioned DOE's ability to meet this deadline, noting that Russia has not yet provided the United States with access to many of the Minatom sites. But DOE has stated that an access agreement signed in 2001 has "allowed significant access and acceleration of physical protection systems ... at these large facilities."[83] In addition, Secretary of Energy Spencer Abraham reports that, in numerous meetings with Russia's Minister of Atomic Energy, Alexander Rumyantsev, he worked "to accelerate and expand our programs" and to "clear away the bureaucratic obstacles."[84] The FY2005 budget request increases funding in this area from $32.5 million in FY2004 to $43 million in FY2005.

Civilian Nuclear Sites. DOE has also provided assistance with the installation of security upgrades at 31 civilian nuclear sites throughout the former Soviet Union. These are mainly research facilities that operate nuclear reactors. According to DOE, these sites contain around 40 metric tons of weapons-useable materials. DOE has already completed rapid upgrades at sites housing around 98% of these materials and comprehensive upgrades at sites housing around half of these materials. It hopes to complete this effort over the next couple of years.

Material Consolidation and Conversion. In addition to securing sites that house nuclear materials, the MPC&A program is providing Russia and the other former Soviet states with assistance in consolidating these materials in fewer facilities and converting them to forms that might be less attractive to nations seeking materials for nuclear weapons. By the end of FY2003, DOE plans to remove nuclear materials from about 40% of the 55 buildings that will eventually be cleared of this material. It also plans to convert about 15% of the 29 metric tons of highly enriched uranium and low enriched uranium covered by this effort. It hopes to complete the effort by 2009.

Radiological Dispersion Devices. In the wake of the September 11 attacks, many analysts have expressed growing concerns about the possibility that terrorists might acquire nuclear materials that could be used in a "dirty bomb."

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[81] Ibid. p. 639.

[82] U.S. General Accounting Office. *Weapons of Mass Destruction. Additional Russian Cooperation Needed to Facilitate U.S. Efforts to Improve Security at Russian Sites*. GAO-03-482. Washington, March 2003, p. 26.

[83] U.S. Department of Energy. FY2004 Congressional Budget Request. Detailed Budget Justifications. February 2003. p. 639.

[84] "The FY2004 Nonproliferation Budget: Supporting the Ten Principles for Nuclear and Radiological Materials Security." Remarks by Energy Secretary Spencer Abraham. Center for Strategic and International Studies. Washington, D.C. February 10, 2003.

Although such a device would not explode with a nuclear yield, it could, nonetheless spread radiological debris across a wide area. Many nations, around the world, have nuclear materials at research facilities, hospitals, or power plants that could be used in a dirty bomb. But most analysts agree that the states of the former Soviet Union pose a greater threat in this regard, particularly since the Soviet Union left devices with radioactive materials scattered across its territory. According to Spencer Abraham, the Secretary of Energy, "more attention is being paid to the risks associated with the misuse of radiological materials" because they are much "more abundant and much less secure" than weapons-grade materials.[85] Consequently, DOE has initiated a new program to identify these sites, set priorities, and begin security upgrades. This program received its initial funding in FY2002, with $20 million allocated from the $150 million Congress added to the MPC&A program in the Supplemental Appropriations (P.L. 107-206) passed after the September 11 attacks.

DOE identified 35 nuclear waste sites in Russia and the other former Soviet states that posed a threat for the theft or sale of nuclear materials. These states also have radiological sources at agricultural research institutes, research reactors, medical facilities, intelligence sites, and defense facilities.[86] DOE is also working with the International Atomic Energy Agency (IAEA) to identify and secure facilities that may house these materials in other nations. In the FY2005 budget, DOE has requested an increase in its funding, to $40 million for this effort , and to help it consolidate and, when possible, return to Russia, nuclear materials in nuclear reactors in other countries.

Second Line of Defense. Through its Second Line of Defense Program, DOE contributes to U.S. efforts to help the former Soviet states detect and intercept attempts to smuggle nuclear materials out of the country. DOE has begun to install radiation detection equipment systems at strategic "transit and border sites." By the end of FY2003, DOE had installed this equipment at 39 sites, out of an estimated 393 sites that may need the equipment. DOE also plans to provide training and communications equipment to border control agents to help them implement the plan. This program began in FY1998, and received less than $3 million per year for several years. However, the budget increased to $46 million and the effort expanded significantly with funding provided under the FY2002 supplemental appropriations (P.L. 107-206). Congress also added $28 million to this program area in FY2004, for a project known as the Megaports initiative. This project is developing and deploying radiation detectors for use at the largest foreign seaports that handle about 70% of the container traffic headed for the United States.[87]

DOE has also initiated a new project, known as Megaports, which is designed "to detect the trafficking of nuclear or radioactive materials in the world's busiest seaports." According to Secretary of Energy Abraham, DOE hopes to install

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[85] Remarks by Spencer Abraham, Secretary of Energy. Carnegie Endowment for International Peace. International Nonproliferation Conference. November 14 , 2002

[86] U.S. Department of Energy. FY2004 Congressional Budget Request. Detailed Budget Justifications. February 2003. p. 649.

[87] Hoehn, William. *Update on Legislation Affecting U.S-Former Soviet Union Nonproliferation and Threat Reduction*. RANSAC. November 17, 2003.

detection equipment at seaports around the globe. The Administration has requested $15 million for this program in FY2005. This funding included in International Nuclear Materials and Protection portion of the budget, even though it is not intended for use in the former Soviet Union. The Administration expects to complete work at ports in Greece and the Netherlands by the end of 2004.[88]

Table 5 displays the recent funding history for many of these International Nuclear Materials and Cooperation programs. It begins with the appropriation for FY2002, which includes the $150 million added in the supplemental appropriations bills. It then demonstrates how the budgets evolved through the appropriations for FY2003 and FY2004. The table demonstrates that, with the near completion of upgrades at Russia's naval nuclear facilities and civilian nuclear sites, MPC&A funding is shifting into efforts to secure Strategic Rocket Force warheads and Radiological Dispersion Devices. At the same time, although DOE has reached only a small portion of the nuclear materials at Minatom sites in the nuclear weapons complex, funding for these efforts has declined. This reflects, in part, the continuing problems that the United States has had in gaining access to these sites.

Table 5: Appropriations for MPC&A and Related Programs

(in $ thousands)

Program	FY2002	FY2003	FY2004
Navy Complex	$87,780	$55,800	$38,000
Strategic Rocket Forces	$0	$0	$24,000
Minatom Weapons Complex	$31,173	$48,000	$39,000
Civilian Nuclear Sites	$34,617	$21,707	$11,000
Material Consolidation and Conversion	$21,000	$27,000	$31,000
Radiological Dispersion Devices	$20,285	$16,293	$36,000
National Programs and Sustainability	$73,552	$34,227	$28,000
Second Line of Defense	$46,185	$24,000	$52,000
Total	$314,592	$227,077	$280,000

Source: U.S. Department of Energy. FY2004 Congressional Budget Request. Detailed Budget Justifications. February 2003.

Russian Transition Initiative

The Russian Transition Initiative combines two DOE programs that seek to stop the leakage of knowledge out of Russia's nuclear weapons complex to states or groups seeking their own nuclear weapons. According to DOE, these programs seek to help Russia reduce the size of its nuclear weapons complex, by removing functions

[88] Longsworth testimony. March 10, 2004.

and equipment, and to create "sustainable non-weapons-related work" for scientists through technology projects that have "commercially-viable market opportunities."[89] The Bush Administration has stated that it hopes to expand the program from engaging only nuclear scientists to also engaging biological and chemical weapons scientists. It has requested funding to expand the program to two chemical weapons institutes in FY2004.

Initiatives for Proliferation Prevention. The Initiatives for Proliferation Prevention (IPP) Program began in 1994. IPP has matched U.S. weapons labs and U.S. industry with Russian scientists and engineers in cooperative research projects with "high commercial potential." DOE claims that this focus on commercialization will help make the projects self-sustaining in the long-term. The IPP program received $35 million in the FY1994 Foreign Operations Appropriations Act, before its funding moved to the Department of Energy. This initial funding helped establish nearly 200 research projects by1995. Between FY1996 and FY2003, IPP received an additional $194 million. In FY2004, the Bush Administration requested around $23 million for projects funded through IPP, as a part of the overall request of $39.3 million for the Russian Transition Initiative. Congress approved this request.

The IPP program was the subject of review and criticism in a GAO study released in February 1999. The report noted that nearly half of the funds appropriated for the IPP program had been spent at the U.S. nuclear weapons labs and, after subtracting the taxes, fees and other charges removed by Russian officials, the Russian institutes had received only around one-third of the funds. The report also questioned DOE's oversight of the programs, noting that program officials did not always know how many scientists were receiving IPP funding. The report noted that the projects had not yet produced any commercial successes. DOE responded by stating that IPP had temporarily employed thousands of scientists in around 170 institutes. DOE also stated that the program did not subsidize scientists who were performing weapons-related work. Nevertheless, in FY2000, Congress reduced the Clinton Administration's request for funding for the IPP program from $30 million to $25 million and specified that no more than 35% of the funds be spent at the U.S. labs. It also mandated that the United States negotiate agreements with Russia to ensure that funds provided under this program are not subject to taxes in Russia. Furthermore, it requested that the Secretary of Energy review IPP programs for their commercialization potential.

DOE reports that the IPP program engaged 13,000 scientists, engineers, and technicians between FY1994 and FY2002, with 6,700 of them working on projects in 2002. At the end of 2002, IPP had 176 projects ongoing at 56 institutes in Russia, with 64 of these projects at facilities in the closed nuclear cities. IPP also had 14 projects at 6 institutes in Kazakhstan, and 13 projects at 9 institutes in Ukraine. It has also reported that 13 projects have become commercial ventures, and the program

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[89] U.S. Department of Energy. FY2004 Congressional Budget Request. Detailed Budget Justifications. February 2003. p. 663.

has created 850 high tech jobs in Russia. Furthermore, the IPP program has received around $125 million in private sector matching funds.[90]

Nuclear Cities Initiative (NCI). In August 1998, Vice President Gore and then-Prime Minister Kiriyenko signed an agreement establishing the Nuclear Cities Initiative. This program is designed to bring commercial enterprises to Russia's closed nuclear cities, so that Russia can reduce the size of its weapons complex and so that the scientists and engineers will not be tempted to sell their knowledge to nations seeking nuclear weapons. The United States and Russia signed an implementing agreement in September 1998 and the program received its first funding of $15 million in FY1999. The NCI program received a total of nearly $87 million between FY1999 and FY2003; the Bush Administration has requested, and received, an additional $17 million for it within the funding for the Russian Transition Initiative.

Some Members of Congress and others, including GAO, have also raised questions about the value and effectiveness of the NCI program. In its first budget for FY2002, the Bush Administration sought to reduce funding from $26 million in FY2001 to $6.6 million, limiting the program to 3 of Russia's ten closed nuclear cities. It also indicated that it might seek to eliminate the program, merging its functions with the IPP program. Congress accepted this latter proposal, creating the Russian Transition Initiative, and it initially accepted the reduction in funding for the program. However, in the supplemental appropriations bill passed after the September 11 attacks, Congress added $15 million to the NCI program. Nevertheless, with limited funding and uncertain political support, the NCI program has reportedly made limited progress in addressing the employment problems at Russia's closed nuclear cities. Some say that the merger with the IPP will bring stability and progress to the program's efforts.

However, in late July 2003, the Bush Administration announced that the NCI program would cease to operate by the end of 2003. The United States and Russia have been unable to agree on the liability provisions in an implementing agreement for the program. Ongoing projects will continue through the end of the year, but the program will not receive new funding or begin new projects. Congress has expressed its concern about this impasse, and has encouraged the Administration to "work aggressively" with Russia to resolve it. In its FY2005 budget request, the Administration has allocated $41 million to the Russian Transition Initiative. Some of this funding could support NCI projects if the liability issue is resolved.

Elimination of Weapons-Grade Plutonium Production

In the early 1990s, the United States and Russia both pledged to end the production of plutonium for nuclear weapons. Russia, however, balked at suggestions that it shut its three remaining plutonium production reactors because it used the same reactors to produce light and heat in the cities of Tomsk and Krasnoyarsk. In an agreement signed in 1994, under the auspices of the high level

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[90] *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan*, by Matthew Bunn, et al. Project on Managing the Atom. March 2003.

commission chaired by Vice President Gore and Russia's Prime Minister Chernomyrdin, the two sides agreed that they would work together to provide alternative energy sources for these Russian cities. This program began as a part of the DOD CTR program, and moved to DOE in FY2002.

In the original 1994 agreement, Russia stated that it would shut the reactors by 2000, if the alternative energy facilities were developed in the same time frame. Initially, the two nations planned to replace the reactors with fossil-fueled power plants, but early studies concluded that the construction of these plants could cost up to $1 billion. Consequently, the two sides began to explore the possibility of converting the plutonium production reactors to a type whose spent fuel did not require reprocessing. These new reactors would no longer produce weapons-grade plutonium. Each side planned to pay half of the expected $160 million for this conversion project. However, over the next few years the expected cost of the core conversion more than doubled. After its financial crisis in 1998, Russia concluded that it could not pay its half. If the project had continued, the United States might have had to pay more than $300 million. At the same time, questions about the reactors' safety raised the possibility that they might need to be closed shortly after the core conversion was complete.

In late 1999, Minatom proposed that the two sides again pursue the replacement of the nuclear reactors with fossil fuel plants. After reducing the estimate for the necessary size of the plants, it estimated that the new project would cost about the same as the core conversion project. In late 2000 and early 2001, the two nations agreed to replace the reactors with fossil fuel plants. However, in FY2000 and FY2001, Congress prohibited the expenditure of any CTR funds for the construction of fossil fuel plants. When it completed its review of U.S. nonproliferation and threat reduction assistance to Russia, the Bush Administration endorsed the reactor shut-down program and transferred the effort from DOD to DOE.

DOD, DOE, and the State Department have all contributed to this project. The State Department contributed nearly $4.5 million in FY1995 and FY1999 to feasibility studies. DOD's budget included $10 million in FY1995 and $16 million in FY1996. It also included $32 million in FY2000, but these funds were rescinded after Congress prohibited their expenditure on fossil fuel plants. Congress transferred $32 million in FY2001 funds and $56 million in FY2002 funds from DOD to DOE, and appropriated $49 million in the DOE budget for FY2003. The Bush Administration requested and received $50 million for this effort in FY2004.[91] It has requested a similar amount, $50.1 million, to continue this project in FY2005.

The United States and Russia concluded a new agreement to implement the reactor shut-down program in early 2003. According to NNSA, the new fossil fuel plants will be completed, and the old nuclear reactors shut down, in 2008 and 2011, assuming there are no further delays in the implementation of the agreement. The

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[91] *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan*, by Matthew Bunn, et al. Project on Managing the Atom. March 2003.

United States and Russia are also implementing efforts to improve safety at the reactors in the interim.[92]

Fissile Materials Disposition

In September 1998, the United States and Russia agreed to convert surplus weapons-grade plutonium to a form that could not be returned to nuclear weapons. In the Plutonium Management and Disposition Agreement, signed in September 2000, each side agreed to dispose of 34 metric tons of weapons-grade plutonium, and to do so at roughly the same time. This agreement was designed to ease concerns about the possible theft or diversion of weapons-grade plutonium by nations or others seeking to develop their own nuclear weapons.

According to the agreement, the parties could use two methods for disposing of the plutonium — they could either convert it to mixed oxide fuel (MOX) for nuclear power reactors or immobilize it and dispose of it in a way that would preclude its use in nuclear weapons. Some analysts have criticized the MOX option, on the principle of opposing any use of plutonium in power generation. From this point of view, nations that do not possess nuclear weapons could use a plutonium-base power fuel cycle as a cover for developing nuclear weapons. If weapons states such as Russia and the United States used plutonium for power generation, according to this argument, it would be more difficult to persuade non-weapons states not to do so. However, Russia has expressed little interest in the permanent disposal of plutonium, noting that the material could have great value for its civilian power program. The United States initially intended to pursue both options. However, after reviewing U.S. nonproliferation policies in 2001, the Bush Administration concluded that this approach would be too costly. The United States now plans to convert almost all its surplus plutonium to MOX fuel. Congress appropriated $152 million for FY2003 to begin construction of three facilities in Savannah River, SC, to pursue the MOX option, and the FY2004 request is $416 million for construction and $194 million for operation and maintenance for the U.S. surplus plutonium disposal program. The FY2005 budget request reduces funding for the U.S. program by about $50 million.

The United States and international community have agreed to pay a large portion of the cost for Russia's plutonium disposition program when it is undertaken. According to the State Department, U.S. allies, including Great Britain, France, and Japan, have already pledged to provide $700 million.[93] Congress appropriated $200 million for this program for FY1999, but most of these funds have not been spent. The Bush Administration's FY2004 budget justification requests $47 million for Russian Fissile Materials Disposition "Operations and Maintenance" and it and prior

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[92] For details on components of the reactor shut-down program see U.S. Department of Energy. *FY2004 Congressional Budget Request*. Detailed Budget Justifications. February 2003. p. 722-726.

[93] U.S. Department of State. *Fiscal Year 2002 Performance and Accountability Report*. p. 62.

balances totaling $151 million will be spent in the Russian Federation "in accordance with a new detailed program execution plan to be provided to Congress."[94]

However, in late July, 2003, the Bush Administration announced that the plutonium disposition program would not pursue additional contracts in 2004 because the United States and Russia have been unable to agree on the liability provisions for a new implementing agreement for the program. The FY2005 budget does include $64 million funding for U.S. assistance to Russia on plutonium disposition, under the assumption that the nations will resolve their differences and the program will resume. As a result of this dispute, however, the projected date for beginning construction on the plutonium disposition facilities has slipped by 10 months, from July 2004 to May 2005.

Issues for Congress

Congress has addressed a number of issues during the years since it passed the Nunn-Lugar amendment and DOD established the Cooperative Threat Reduction Program. Many of these are discussed in detail in CRS Report 97-1027F, Nunn-Lugar Cooperative Threat Reduction Programs: Issues for Congress. Some of these issues have grown out of concerns with specific projects, as has been the case with the dispute over the chemical weapons destruction facility at Shchuch'ye. Others have derived from broader concerns about whether threat reduction assistance to Russia and the other former Soviet states serves broader U.S. national security goals. The question of whether U.S. threat reduction and nonproliferation assistance represents "defense by other means" — as former Secretary of Defense William Perry used to argue — or foreign aid — as some in Congress often assert — continues to echo in debates about these programs. Some program critics and some Members of Congress also continue to question whether U.S. assistance allows Russia to divert its own resources to the development and production of new weapons that could threaten the United States. Secretary of Defense Rumsfeld raised this question during his nomination hearing in January 2001.

On the other hand, as U.S. threat reduction and nonproliferation assistance to Russia enters its second decade, many of the issues discussed during the debates over the programs reflect new concerns raised during assessments of how the programs performed in their first decade and how they might improve in the second. Many of these issues also reflect the growing focus of the programs on the potential link between weapons of mass destruction that might leak out of Russia and terrorist organizations that might seek these weapons to attack the United States and its allies. The discussion below reviews many of these issues, describing concerns raised by those who support and those who criticize the programs. The discussion draws heavily on the findings and proposals outlined by several recent reports on U.S. threat

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[94] U.S. Department of Energy. *FY2004 Congressional Budget Request*. Detailed Budget Justifications. DOE/ME-0016. February 2003. Vol. 1, p. 548.

reduction and nonproliferation assistance. These provide a more detailed description of the status of the programs and proposals for the future.[95]

Organization and Coordination

As was noted above, CTR implementation was slow during the program's early years. The need to negotiate umbrella agreements with Russia, and establish a "culture of cooperation" was a key reason for the early delays. But some analysts also cite the need to coordinate project planning among several U.S government agencies as a problem. Many analysts contend that coordination problems remain today, even though each of the three key agencies — DOD, DOE and State — funds and manages its own projects. These agencies still need to coordinate their efforts to avoid duplication and, in some cases to share resources and expertise. In addition, with the programs spread among three agencies, no one in the U.S. government takes the lead in setting policies and priorities for U.S. threat reduction and nonproliferation assistance, or in serving as an advocate for these programs in interagency debates. Some Members of Congress and analysts outside government have proposed two specific solutions that they believe will improve implementation of U.S. threat reduction and nonproliferation assistance — the creation of a strategic plan and the designation of an overall program coordinator.

Strategic Plan. Many analysts, both inside and outside the U.S. government, believe that U.S. threat reduction and nonproliferation programs would benefit from the development of a government-wide strategic plan. Some officials and analysts expected the Bush Administration to develop a more comprehensive strategic plan for these programs during its review of U.S. nonproliferation assistance to Russia in 2001.[96] That review just identified those programs that would receive greater resources and expanded mandates. But, according to Senator Pete Domenici, "these programs frequently are intertwined and interrelated in various complex and difficult

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[95] See, for example, *Reshaping U.S.-Russian Threat Reduction: New Approaches for the Second Decade*. Carnegie Endowment for International Peace and Russian American Nuclear Security Advisory Council. November 2002. [http://www.ceip.org/files /pdf/Reshaping.Threat.Reduction.pdf]; U.S. Department of Energy. The Secretary of Energy Advisory Board. *A Report Card on the Department of Energy's Nonproliferation Programs With Russia*. Howard Baker and Lloyd Cutler. Russia Task Force. January 10, 2001. [http://www.seab.energy.gov/publications/rusrpt.pdf]; *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan*, by Matthew Bunn, et al. Project on Managing the Atom. March 2003, [http://www.nti.org/e_research/cnwm/cnwm.pdf] and Einhorn, Robert J. and Michelle A. Flournoy, *Protecting Against the Spread of Nuclear, Biological, and Chemical Weapons. An Action Agenda for Global Partnership*. CSIS Report. January 2003. [http://www.csis.org/pubs/2003_protecting.htm].

[96] "I would hope that the real result of the review would lead to a more comprehensive approach, a more integrated approach, to nonproliferation and threat reduction, so that the individual program can be seen and measured in light of an overall approach and clear goals, and so the individual programs can support each other more synergistically." U.S. House. Committee on Armed Services. Hearing. Department of Energy Budget Request for FY2002. p. 9. Statement of Gen. John A. Gordon, Administrator, National Nuclear Security Administration. June 27, 2001.

ways."[97] According to one analyst who has participated in both DOD and DOE programs, the growth in U.S. programs "has been by and large, organic, with each agency pursuing its own contacts and relationships in recipient countries, assembling and justifying its own budget, implementing programs based on its own culture and approaches, and interacting with its own Congressional oversight committees."[98] Most analysts agree that a comprehensive strategic plan would allow for the development of an overall set of goals for U.S. assistance, better coordination among programs, a more consistent method to set priorities and measure progress, and a coordinated way to determine when and how the United States had achieved its goals and could complete a program.

Program Coordination. Many analysts have also called for the creation of a high-level program coordinator or a high level interagency committee chaired by a representative of the National Security Council. This program coordinator would set a consistent direction by setting priorities, resolving competing demands for budgetary resources, eliminating overlap and redundancy, and coordinating implementation across agencies. This individual would also raise the political profile of the programs, bringing consistent political leadership that many analysts believe is lacking. They argue that continued, coordinated success for the programs requires "active political engagement at the White House, cabinet, and sub-cabinet political appointee levels in the U.S. government."[99]

Neither the Clinton nor the Bush Administrations accepted proposals for a single, high-level program coordinator, arguing that interagency coordination already occurs. According to an official from the Bush Administration, "U.S. policy implementation and oversight of nonproliferation assistance to the states of the former Soviet Union is coordinated at senior levels by the Proliferation Strategy Policy Coordinating Committee, or PCC, chaired by a National Security Council senior director, with assistant secretary-level representatives from State, Defense, Energy and other concerned agencies."[100] Others have argued that a new interagency committee would complicate the existing interagency coordinating process.[101]

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[97] U.S. Senate. Committee on Governmental Affairs, Subcommittee on International Security, Proliferation and Federal Services. Hearing. *Combating Proliferation of Weapons of Mass Destruction (WMD) with Non-proliferation Programs: Non-proliferation Assistance Coordination Act of 2001*. November 14, 2001

[98] Ibid. Statement of Laura Holgate, Vice President of the Russian Newly Independent States Program, Nuclear Threat Initiative.

[99] *Options for Increased U.S. Russian Nuclear Nonproliferation Cooperation and Projected Costs*. RANSAC, October 2001.

[100] U.S. Senate. Committee on Governmental Affairs, Subcommittee on International Security, Proliferation and Federal Services. Hearing. *Combating Proliferation of Weapons of Mass Destruction (WMD) with Non-proliferation Programs: Non-proliferation Assistance Coordination Act of 2001*. Statement of Vann Van Diepen, Deputy Assistant Secretary of State for Nonproliferation. November 29, 2001.

[101] Ibid. Statement of Marshall Billingslea, Deputy Assistant Secretary of Defense for Negotiations.

A White House-based nonproliferation "czar" may be able to communicate high-level interest and political commitment to the programs. However, unless this individual could control the budgets of the programs involved, to ensure that funding levels matched stated priorities, and unless the individual could implement corrective actions to ensure that programs achieved their objectives, it seems unlikely that he or she would be able to establish priorities and enforce them across government agencies. A high level committee might have greater success creating a consensus about priorities, because each agency would have a representative at the table. But it might still find it difficult to match funding levels to these priorities because each agency's budget would still reflect the overall priorities and missions of the agency.

Access and Transparency

Many analysts and government officials note that the primary barrier to successful implementation remains the need to gain access and transparency from officials in the recipient nations, particularly Russia. As was noted above, Russia has not provided the United States with access to nuclear weapons storage areas, leaving security improvements incomplete at these facilities. It has not provided complete information about or access to facilities in its biological weapons complex, and, in spite of more than five years of negotiations, the United States and Russia still have not completed a transparency agreement for the facility in Mayak that will store fissile materials removed from weapons. Furthermore, Russia has not provided the United States with access to most of the facilities in Russia's nuclear weapons complex, leaving large holes in the U.S. ability to improve security for the nuclear materials at those facilities.

Although many analysts note that Russia's interest in protecting secret details about its nuclear weapons programs is understandable, most also argue that this secrecy, and the resulting delays in program implementation, serve to undermine support in the United States for threat reduction and nonproliferation programs. While most agree that Russia must step forward to solve this problem,[102] they also note that the United States does not have a "systematic approach to identifying and addressing these problems."[103] Each agency has developed its own solutions. For example, in some cases, DOE has used photographs and diagrams, instead of on-site visits, to identify security weaknesses and design security improvements at nuclear complex sites. Analysts have identified this "ad hoc" process as one further incentive for better coordination among threat reduction programs; a single program coordinator could help agencies identify problems and share solutions.

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[102] The Baker-Cutler report notes that Russian official point out that "transparency and access matters are far from routine in Russian bureaucracy." Russia does not have procedures for foreigners to have routine access to facilities in the nuclear weapons complex, so requests are treated on a case-by-case basis. They need a high-level government decision to lead to routine access, rather than having it treated on a case-by-case basis. U.S. Department of Energy. The Secretary of Energy Advisory Board. *A Report Card on the Department of Energy's Nonproliferation Programs With Russia*. Howard Baker and Lloyd Cutler. Russia Task Force. January 10, 2001. p. 22.

[103] *Reshaping U.S.-Russian Threat Reduction: New Approaches for the Second Decade*. Carnegie Endowment for International Peace and Russian American Nuclear Security Advisory Council. November 2002. p. 4.

Certifications and Waivers

The Nunn-Lugar amendment contained six "exclusions" that set out conditions the recipients had to meet before receiving U.S. threat reduction assistance. The United States could not provide assistance until the President certified to Congress that each recipient nation was "committed to:"

> (1) making a substantial investment of its resources for dismantling or destroying such weapons;
>
> (2) forgoing any military modernization program that exceeds legitimate defense requirements and forgoing the replacement of destroyed weapons of mass destruction;
>
> (3) forgoing any use of fissionable and other components of destroyed nuclear weapons in new nuclear weapons;
>
> (4) facilitating United States verification of weapons destruction carried out under section 212;
>
> (5) complying with all relevant arms control agreements; and
>
> (6) observing internationally recognized human rights, including the protection of minorities."[104]

Congress expected the President to exercise his judgement when deciding whether to issue the certifications. For example, the legislation states that the recipient nations must be "committed to" the policies listed in the six exclusions, a standard which can be less demanding than one that requires precise behavior. The Clinton Administration certified Russia for several years, even though the United States had questions about Russia's compliance with chemical and biological weapons agreements, because Russia's President Yeltsin had offered verbal assurances of his commitment to resolve the outstanding questions. Using the same information, the Bush Administration withheld Russia's certification. In addition, the exclusions do not define many of their terms. For example, they state that a recipient must make "a substantial investment" of its own resources, but it does not define a level of investment that would be necessary. They also state that the recipients must forgo military modernization programs that exceed legitimate defense requirements, but it does not ban all military modernization or indicate how much would be too much.

Congress has debated adding new or modified exclusions to the CTR legislation several times over the life of the CTR program. In some years, some Members have sought to provide more precise standards of behavior for the recipient nations; in others, they have sought to add new requirements linking receipt of assistance to a greater number of policy areas. Congress has rejected many of these efforts, particularly if they appeared certain to cut-off U.S. threat reduction assistance to

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[104] PL 102-228, Sec 211, paragraph (b).

Russia. Instead, it has usually crafted requirements with language that provides the President with the flexibility to balance U.S. concerns about the recipients' policies against the U.S. interest in continuing efforts to contain and eliminate weapons of mass destruction.[105]

Congress did add new certification requirements related to the construction of the chemical weapons destruction facility at Shchuch'ye in FY1998 and FY1999. These stated that "no funds authorized to be appropriated under this or any other Act for FY1998 for Cooperative Threat Reduction programs may be obligated or expended for chemical weapons destruction activities ... until the President submits to Congress a written certification" that:

> (A) Russia is making reasonable progress toward the implementation of the Bilateral Destruction Agreement;
>
> (B) the United States and Russia have made substantial progress toward the resolution, to the satisfaction of the United States, of outstanding compliance issues under the Wyoming Memorandum of Understanding and the Bilateral Destruction Agreement; and
>
> (C) Russia has fully and accurately declared all information regarding its unitary and binary chemical weapons, chemical weapons facilities, and other facilities associated with chemical weapons.

However, Congress permitted the President to submit an alternative certification, which stated that "the national security interests of the United States could be undermined by a United States policy not to carry out chemical weapons destruction activities under the Cooperative Threat Reduction programs." But, when Congress resumed funding for Shchuch'ye in FY2002, after a two year prohibition, it restored the certification requirements without the alternative provision. The United States could not provide funding for chemical weapons destruction activities in Russia until the Secretary of Defense certified that there has been:

> (1) information provided by Russia, that the United States assesses to be full and accurate, regarding the size of the chemical weapons stockpile of Russia;
>
> (2) a demonstrated annual commitment by Russia to allocate at least $25,000,000 to chemical weapons elimination;
>
> (3) development by Russia of a practical plan for destroying its stockpile of nerve agents;
>
> (4) enactment of a law by Russia that provides for the elimination of all nerve agents at a single site;

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[105] For a detailed review of the history of the CTR certification requirements, see CRS Memorandum for Congress. *Certification Requirements Affecting the Nunn-Lugar Cooperative Threat Reduction Program*. By Amy F. Woolf. December 23, 2002.

(5) an agreement by Russia to destroy or convert its chemical weapons production facilities at Volgograd and Novocheboksark; and

(6) a demonstrated commitment from the international community to fund and build infrastructure needed to support and operate the facility.'

The Bush Administration announced, in April 2002, that it could not certify that Russia was committed to its arms control obligations under the Chemical Weapons and Biological Weapons Conventions. This decision stalled many ongoing CTR projects by precluding the signing and implementation of new contracts. Furthermore, in an effort to balance its stated support for CTR with this decision, the Administration asked Congress to provide it with the authority to waive the certification requirements so that it could continue to fund CTR programs in Russia. Most Members of Congress agreed with the Administration's view that the CTR programs continued to serve U.S. national security interests and the House and Senate each included a waiver authority in its version of the Defense Authorization Bill. The Senate provided the President with permanent waiver authority; once passed, the authority would remain available to the President in all future fiscal years. The House sought a less generous provision, providing the President with the authority to waive the certification requirements only in FY2003. The Conference Committee, in Section 1306 (H.Rept. 107-436), provided the President with the authority to waive the certification requirements for three years. But this waiver only applied to the original six exclusions, not the separate certification for Shchuch'ye. Congress included one year of waiver authority for that project in the FY2003 Defense Appropriations Bill (P.L.107-248)

The Bush Administration has indicated that it believes that the combination of certification requirements and Presidential waivers is an essential part of its effort to use the CTR program to encourage greater openness in Russia and to transform Russian behavior. They allow the United States to signal to Russia that it will hold it to a high standard, and, although the President can waive the certifications, he does not have to if Russian behavior does not meet U.S. standards. Some in Congress support this approach. They agree that the CTR program should be afforded a high priority, but they note that it cannot proceed in a vacuum, without consideration for Russian behavior in other policy areas. Some, however, disagree with this approach. They believe that U.S. threat reduction assistance to Russia should be of the highest priority, and although Russian policies in other areas are important, they should not interfere with the elimination and containment of weapons of mass destruction. Some of these Members have proposed that Congress amend the CTR legislation to remove the certification requirements altogether. Others believe that Congress should provide the President with permanent waiver authority so that this debate does not stop the program, as it did in 2002, again in the future.

Some in Congress, however, believe that Russian policies in other areas — such as Russian nuclear cooperation with Iran, Russian military modernization, and the lack of Russian compliance with arms control — can create new threats to U.S. security, and therefore, are of higher priority than threat reduction assistance. They argue that the President should only have a limited ability to waive the certification requirements. This issue is likely to remain high on the Congressional agenda in debates over the CTR program for the next few years.

Funding and Focus of the Programs

Funding. The Bush Administration has indicated, through the U.S. commitment to the G-8 Global Partnership (described below), that it plans to request around $1 billion per year for U.S. threat reduction and nonproliferation programs in Russia and the other former Soviet states. These programs have expanded sharply since the middle of the 1990s, when the CTR program received less than half of that amount each year. Yet many analysts argue that the United States should commit a far greater sum to these efforts. The Baker-Cutler report, for example, released in January 2001, argued that the United States should spend up to $30 billion over the next 10 years on DOE's programs to secure nuclear materials.[106] This amount did not include funding for DOD or State Department programs, which could total another $5 billion over the next ten years if spending continues at the current level.

Most analysts agree that added funding will not necessarily accelerate all U.S. programs. They acknowledge that implementation problems, such as the absence of access to many facilities and the U.S. failure to certify Russia for receipt of CTR assistance for most of 2002, slowed progress and left significant amounts of money unspent. On the other hand, they have identified numerous programs that might achieve greater results with increased funding. These include the science centers in Moscow and Kiev, where the United States and its partners have had to limit the number of scientists who receive research grants because of limits on the available funds. This list also includes the program to dispose of plutonium in Russia, where added funding might speed construction of the MOX facility and hasten the elimination of weapons grade plutonium, and the program to eliminate Russia's plutonium producing reactors, where greater funding might lead to the earlier completion of replacement energy plants. Export and border control programs might also accelerate their progress with added funding, leading to the installation of improved equipment and procedures at a greater number of border crossing points.

The Bush Administration generally agrees with the need to add funding to some programs to accelerate their progress, and it has stated that it intends to pursue this goal with the science centers and the export and border control programs. It has also called for added international funding to help accelerate the shut-down of Russia's plutonium-producing reactors. However, analysts note that, with a fixed budget of around $1 billion per year, the United States will only be able to expand these programs and introduce new programs if it reduces funding for other programs. Some current programs may finish their missions in the coming years, allowing increased funding for other programs. But other programs, such as the effort to help Russia convert its weapons-grade plutonium to mixed-oxide reactor fuel, could consume rapidly increasing sums in the future. Consequently, the Administration's plans for a fixed budget could force trade-offs between projects. For example, in its budget request for FY2004, DOE has sought to add funding to accelerate the blend-down of highly enriched uranium and to fund the new program to identify and secure

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[106] U.S. Department of Energy. The Secretary of Energy Advisory Board. *A Report Card on the Department of Energy's Nonproliferation Programs With Russia*. Howard Baker and Lloyd Cutler. Russia Task Force. January 10, 2001. p. 20.

radiological sources. At the same time, it has reduced funding for MPC&A projects in Russia's nuclear weapons complex.

Focus. U.S. threat reduction and nonproliferation programs have pursued a number of different types of projects, trying different solutions to different problems. However, most have followed one theme — these projects have sought to consolidate, contain, and destroy weapons and materials, and to consolidate and contain weapons knowledge, so that they would not leak out of the former Soviet Union. In essence, the United States has sought to identify materials and knowledge that might leak out of Russia and to contain them at their source. Several of the new projects identified by the Bush Administration, such as the WMD Proliferation Prevention Project at DOD and DOE Second Line of Defense, take a different approach. Instead of improving security at the source, they seek set up barriers outside the nuclear weapons complex to prevent these resources from leaving the territory of the former Soviet Union.

These two approaches can be complementary and provide a "layered defense" against the leakage of weapons, materials, and knowhow. However, in an era of constrained budgets, they might also compete for funding and political support. Furthermore, many analysts believe that the most effective approach to keeping nuclear materials away from terrorists is to protect them at their source, at facilities in Russia's nuclear complex.[107] The Bush Administration's budget request reduces or holds steady funding for MPC&A programs, while increasing funding for other types of projects. Consequently, Congress may address the issue of focus and priorities in its debate over U.S. threat reduction and nonproliferation assistance.

Globalization and International Cooperation

There is near-universal agreement, both within the Bush Administration and among analysts outside the U.S. government, that the potential proliferation of weapons of mass destruction to rogue nations or terrorist groups presents a global problem that requires an international response. While the legacy of the Soviet Union's weapons programs may create the most immediate and largest threat, other nations also possess materials, weapons, or knowledge that could leak out beyond their borders to those seeking their own nuclear, chemical or biological weapons.[108] In addition, although the United States has spent more than a decade trying to help Russia and the other former Soviet states secure their weapons, materials, and

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[107] "The most effective approach to reducing the risk is a multi-layered defense designed to block each step on the terrorist pathway to the a bomb. But securing nuclear weapons and materials at their source is the single most critical layer of this defense, where actions that can be taken now will do the most to reduce the risk of terrorist acquiring nuclear weapons and materials, at least cost." *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan*, by Matthew Bunn, et al. Project on Managing the Atom. March 2003.

[108] According to former Senator Sam Nunn, "some 20 tons of civilian HEU (highly enriched uranium) exists at 345 civilian research facilities in 58 countries, yet there are no international standards for securing these nuclear materials within a country." Sam Nunn, Co-Chairman of the Nuclear Threat Initiative. *Reducing the Threats from Weapons of Mass Destruction and Building a Global Coalition Against Catastrophic Terrorism*. Moscow, Russia. May 27, 2002.

knowledge, other nations can contribute to this effort with funding and cooperative programs. The following section addresses three characteristics of the proposals for the "globalization" of threat reduction and nonproliferation assistance. The first, the G-8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction, is an initiative to expand the list of countries contributing to threat reduction and nonproliferation programs in Russia. The second is an initiative, supported by some in Congress and the Bush Administration, to extend U.S. threat reduction assistance to nations outside the former Soviet Union. The third is a more general approach to encourage all nations to better account for and secure their weapons of mass destruction and materials that might become attractive targets for terrorists seeking their own weapons of mass destruction.

The G-8 Global Partnership. During the G-8 summit in Kananaskis, Canada, in July 2002, the United States, Russia, and other G-8 leaders agreed to establish a long term program — the G-8 Global Partnership Against Weapons of Mass Destruction — to stop the spread of weapons of mass destruction and related materials and technology. Under this program, known as 10+10 over 10, the United States has pledged to provide $10 billion over 10 years to sustain ongoing threat reduction programs in Russia; this amount of $1 billion per year is equal to current U.S. spending on threat reduction and nonproliferation programs in Russia so the U.S. commitment would not necessarily signal an increase in the U.S. commitment. The other G-7 nations have also agreed that they will provide, together, up to $10 billion over 10 years. Russia has agreed to contribute $2 billion of its own money. It has also agreed to adopt a set of guidelines that will allow it to receive assistance. Specifically it has agreed that it will provide for "effective monitoring, auditing, and transparency measures" and that it will "provide for adequate access for donor representatives at work sites." It has also agreed that the assistance will be free from taxes and other charges and that it will ensure adequate liability protections for donor countries and their personnel.[109] Each of these issues continue to hinder nonproliferation assistance to Russia, and all potential donors have emphasized the need for their resolution before they provide additional assistance.

The G-8 leaders agreed that this new program would initially focus on threat reduction and nonproliferation programs in Russia, but could eventually extend to other nations if they adopt the Partnership's guidelines. The United States considers its assistance to the other former Soviet states to be a part of its commitment under the Global Partnership. Ukraine has also expressed an interest in receiving assistance under this program. The United States would also like the Global Partnership to contribute to programs designed to redirect scientists in Iraq and Libya. During their 2004 meeting at Sea Island, Georgia, the participants agreed to consider this proposal.

The G-8 leaders also invited other nations or organizations, such as the European Union, to contribute to the program. Norway, and others in Europe, have already outlined cooperative programs with Russia. At the G-8 summit in Evian, France, in 2003, six other nations in Europe (Sweden, Finland, Norway, Poland,

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[109] "The G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction." Statement by the Group of Eight Leaders. Kananaskis, Canada. June 27, 2002.

Switzerland, and the Netherlands) joined the partnership. Seven additional nations (Australia, New Zealand, South Korea, Belgium, Denmark, Ireland and the Czech Republic) joined during the 2004 summit in Sea Island, Georgia. President Bush, in a speech on February 11, specifically emphasized that the G-8 Global Partnership should expand its list of both donors and recipient nations.[110]

Some analysts have questioned how successful the Global Partnership will be in providing significant new funding for threat reduction and nonproliferation programs. The Partnership had received pledges for more nearly $17 billion (including the $10 billion from the United States) by May 2004. However, pledges of support received since Kananaskis may not necessarily extend into sustained funding over the next ten years. As Senator Richard Lugar has noted, "many of our international partners will find it difficult to establish nonproliferation programs during a period of stagnating domestic economic growth."[111]

Some have also questioned how the allies will set priorities and divide up responsibilities over different types of nonproliferation projects. In the statement released after the Kananaskis summit, they listed several projects, including the destruction of chemical weapons, dismantlement of decommissioned nuclear submarines, disposition of fissile materials, and employment of former weapons scientists as high priority projects.[112] Most analysts agree that added funding would help to expand and accelerate each of these project areas. At the same time though, the Global Partnership will not rely on a single coordinating body to either identify new projects or set priorities among competing projects. Each nation will allocate its own funds to those programs that it views as high priority endeavors. With no central authority, this process could leave some programs with too little funding and others with too much funding.

Debt Exchange. The G-8 Global Partnership allows for the possibility that funding for new nonproliferation projects could come from Russia's debt servicing budget if the United States and its allies agree to exchange Russia's debt for nonproliferation funding. Congress has provided the President with the authority to pursue this funding mechanism. However, since about 90% of Russia's Soviet-era Paris Club debt is held by U.S. allies in Europe, with about 50% held by Germany, this mechanism will only provide substantial additional funding if the allies participate, as well. At the present time, none of the participants has indicated that they intend to use debt exchange as a mechanism to raise added funds for nonproliferation assistance to Russia.

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[110] The White House. "President announces New Measures to Counter the Threat of WMD." Fort Lesley J. McNair. February 11, 2004.

[111] Senator Richard Lugar has noted that "The G-8 initiative is not assured. " See Lugar, Richard G. "The Next Steps in U.S. Nonproliferation Policy." *Arms Control Today*. December 2002.

[112] "The G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction." Statement by the Group of Eight Leaders. Kananaskis, Canada. June 27, 2002.

Extending CTR Beyond the former Soviet Union. In the debate over the FY2003 Defense Authorization Bill, the Senate approved an amendment, proposed by Senator Richard Lugar, that would have allowed DOD to use up to $50 million in FY2003 CTR funds "outside the states of the former Soviet Union" to resolve "critical emerging proliferation threats and to take advantage of opportunities to achieve long-standing United States nonproliferation goals."[113] Senator Lugar argued that this type of effort could provide assistance to nations "seeking help in securing or destroying weapons or dangerous materials" and could also "create international standards of accountability for protecting and handling nuclear material and deadly pathogens." This legislation would also allow the United States to "undertake missions to secure dangerous materials or weapons that were at risk of falling into the wrong hands."[114]

The Senate, and the Bush Administration, supported Senator Lugar's proposal. The House, however, objected to this expansion of CTR and the language was removed in Conference. The Bush Administration requested a similar authorization in its Emergency Supplemental Appropriations Bill for FY2003. The Senate again approved the request and the House again rejected it; it was removed from the final version of the Bill.

The Bush Administration again requested the authorization to spend up to $50 million in CTR funds outside the former Soviet Union in the FY2004 Defense Authorization Bill. The Senate again offered its unqualified support for this measure. The House, in contrast, argued that these types of programs would be better managed by the State Department than the Defense Department. It authorized the transfer of up to $78 million in CTR funds to the State Department Nonproliferation and Disarmament fund for use in threat reduction efforts outside the former Soviet Union. The Conference Committee, in its report on the FY2004 Defense Authorization Bill (H.R. 1588), approved the President's request and permits the use of up to $50 million in CTR funds outside the former Soviet Union. However, in deference to the House concerns, the committee language indicates that this funding should be used only for short-term projects; it also states that the President should determine whether DOD is the agency that is most capable of implementing the planned project. The conferees stated that they would expect the President to assign the project to the most appropriate agency.

Those who support the expansion of CTR beyond the former Soviet Union argue that the United States could apply the model of threat reduction assistance that it has developed during the past 12 years to help other nations secure and eliminate weapons or materials that might be attractive to terrorists. They point to nations such as Pakistan, where insecure nuclear materials might be at risk of theft or diversion by government officials or representatives of terrorist organizations.[115] Others,

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[113] S. 2026, H.R. 4546, Sec. 1203.

[114] Lugar, Richard G. "The Next Steps in U.S. Nonproliferation Policy." *Arms Control Today*. December 2002.

[115] See, for example, Gottemoeller, Rose and Rebecca Longsworth. *Enhancing Nuclear Security in the Counter-terrorism Struggle: India and Pakistan as a New Region for* (continued...)

however, question whether a program like CTR can be applied successfully to nations outside the former Soviet Union. They note that these nations might not be willing to allow the United States access to facilities that house nuclear materials or weapons, that they might prefer to enhance, rather than reduce the threat posed by their weapons of mass destruction, and that U.S. assistance in securing weapons might actually make it easier for the recipient nations to deploy and use the weapons. Some have also questioned whether the United States can legally provide assistance, under U.S. and international law, to nations that are not parties to the Nuclear Nonproliferation Treaty.[116]

Global Recognition of National Responsibility. One of the key themes in recent reviews of the proliferation threat and the potential link to terrorism is the recognition that nuclear, chemical, and biological materials reside in many nations around the world. Nations with research facilities for these materials often lack the basic accounting, security, export, and border control systems that the United States has spent more than 10 years trying to bring to Russia. Although few of these materials would be useful to those seeking to build nuclear weapons, they could be of use to those seeking a radiological dispersal device (dirty bomb) or a chemical or biological weapon. There is a growing consensus that the international community, and individual nations, should take steps to address problems with these materials, beyond those already in place under the International Atomic Energy Agency.[117]

The United States would not necessarily need to adopt new programs and appropriate new funds to address this problem. Some believe, as was noted above, that efforts to expand CTR programs beyond the former Soviet Union could help address the problem. But many believe that the IAEA, with the support of the United States, could take steps in this direction through its existing programs that help countries secure and account for radiological materials. The Chemical Weapons Convention also provides a mechanism that might help nations secure and account for chemical agents and materials. Consequently, at least initially, the effort to address this global problem could be more diplomatic and political than technical, with the United States and others using the "bully pulpit" to encourage other nations to recognize the problem and take steps within their own systems to address their own vulnerabilities.

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[115] (...continued)
Cooperation. Carnegie Endowment for International Peace. Working Papers. Number 29. August 2002.

[116] See U.S. Library of Congress, Congressional Research Service. *Nuclear Threat Reduction Measures for India and Pakistan*. CRS Report RL31589. By Sharon Squassoni. May 5, 2003.

[117] Senator Sam Nunn, in outlining his proposal for a Global Coalition Against Catastrophic Terrorism, has stated that "our goal must be to see that all nations come under a system of international standards and inspection for the protection of dangerous nuclear materials." Remarks by Former U.S. Senator Sam Nunn, Chairman, Nuclear Threat Initiative. Carnegie Endowment for International Peace. International Nonproliferation Conference. November 14 , 2002.

In essence, this new global focus may serve to shape the second decade of U.S. threat reduction and nonproliferation assistance. During the first decade the problem was dominated by concerns over the potential for the loss of control over nuclear materials and weapons in the former Soviet Union, and the solutions were dominated by U.S. programs to bring technical assistance to the former Soviet states. In the second decade, the problem is likely to be dominated by concerns about the potential acquisition of nuclear, chemical, and biological materials by terrorist organizations. The solutions may be dominated by a growing sense of global cooperation in identifying and addressing weaknesses in a greater number of countries. U.S. funding and technical assistance may still play a dominant role, but other nations may also step in to offer their experience, expertise, and financial resources.