The Demilitarization of Weapons of Mass Destruction In Russia: The Case of Chemical Weapons -- From Architecture to Implementation[1]

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Executive Summary and Introduction

Since the end of the Cold War some fourteen years ago, the risks of proliferation, terrorism, regional conflict, and potential use of weapons of mass destruction have overtaken prior global security threats of world war and massive nuclear exchange. The use of chemical weapons by Iraq against the Kurds and Iran in the 1980s was an early warning sign of future dangers and the deadly impact of unconventional weaponry and tactics. The many terrorist attacks of the last decade throughout the globe, including use of sarin gas by the Aum Shinrikyo in Tokyo in 1995, and the many suicide bombings in the Middle East, Europe, and Africa, all served to heighten concern over new security threats to both military and civilians alike.

Recognizing that the thousands of nuclear weapons, tons of fissile material, enormous stockpiles of chemical weapons, and remaining biological pathogens in the former Soviet Union presented dangerous proliferation risks, the United States initiated the Soviet Nuclear Threat Reduction Act in 1991. Both Russia and the U.S. began major drawdowns in nuclear weapons, signed and ratified the 1993 Chemical Weapons Convention, and engaged in a bilateral Cooperative Threat Reduction (CTR) program to both secure and demilitarize former Soviet stocks of nuclear, chemical, and biological weapons and related systems.

Over the past twelve years, the CTR and related weapons destruction programs have managed to eliminate 6,032 nuclear warheads, 111 strategic bombers, 559 air-launched cruise missiles and air-to-surface missiles, 507 intercontinental ballistic missiles (ICBMs), 382

submarine-launched ballistic missiles (SLBMs), 438 ICBM launchers, 408 SLBM launchers, 26 strategic ballistic missile submarines (SSBNs) in the former Soviet Union, and 194 nuclear testing tunnels.[3]

In addition, the former Soviet states of Belarus, Kazakhstan, and Ukraine have been denuclearized; the security of nuclear and chemical weapons facilities in Russia have been upgraded; chemical weapons research and production facilities in Russia and Uzbekistan have been demilitarized; tons of highly enriched uranium have been secured and removed from Kazakhstan and Georgia; dangerous biological pathogen collections in Russia and Kazakhstan have been secured; the world's largest anthrax production facility at Stepnogorsk, Kazakhstan has been demilitarized and anthrax burial sites on Vozrozhdeniye Island in Uzbekistan have been destroyed; and thousands of former Soviet weapons scientists have been transitioned to civilian projects.

These are impressive accomplishments and have no doubt helped prevent the spread of these weapons, technologies, and scientific expertise abroad to countries and subnational groups intent on developing and using weapons of mass destruction. But formidable challenges remain. Remaining goals for threat reduction in Russia over the coming decade still include 3,694 nuclear warheads, 26 strategic bombers, 149 air-launched cruise missiles and air-to-surface missiles, 757 ICBMs and 108 launchers, 337 SLBMs and 16 SSBNs, some 150 nuclear-powered attack submarines, 40,000 tons of chemical weapons at seven stockpile sites, chemical and biological research and production facilities, containment and reprocessing of tons of highly enriched uranium and plutonium, and the continued retraining of thousands of weapons scientists.

The September 11, 2001 attacks in New York, Washington, and Pennsylvania, and the subsequent "war on terrorism" in Afghanistan and elsewhere, have raised public and government attention to the importance of accelerating these nonproliferation and anti-terrorism programs. The United States, for example, has now improved stockpile security and accelerated its own chemical weapons destruction program in the U.S. And the G-8 pledges at Kananaskis, Canada a year ago of $20 billion over ten years for Russian weapons destruction broadens and accelerates aid from the international community to help Russia destroy its weapons of mass destruction in a safe and timely manner.

This paper examines the practicalities of and challenges to implementing weapons destruction programs in Russia, using chemical weapons destruction over the past decade as a case study. From a Green Cross/Global Green perspective, major issues raised, and subject to discussion at the "Forum on Chemical Weapons Destruction" in Geneva, Switzerland, June 26-27, 2003 include the following:

- National leadership with the G-8 countries and elsewhere is essential to overcome bureaucratic and political obstacles in international weapons destruction projects.
- U.S. leadership is likewise essential, as it has been under the Cooperative Threat Reduction program, as the "long pole in the Russian demilitarization tent."
- International coordination of donor countries and projects in the Former Soviet Union is a useful and important tool to maximize threat reduction.

- Strong financial support from the U.S., the G-8 nations, and other countries is key to timely success in the Russian weapons demilitarization program.
- Bureaucratic roadblocks must be avoided by Russia and international donor nations, either through ministry or parliamentary conditions, to guarantee safe and cost-efficient implementation of demilitarization programs. Project linkage with political conditions risks failure.
- A toolbox of technology options, internationally shared, is necessary to meet the local and regional requirements of unique stockpile and facility demilitarization projects. No single, "silver-bullet" technology is sufficient for successful programs.
- Stakeholder involvement, public outreach, and facilitation of all interested parties is essential at the local, regional, federal, and international levels in order to preclude unnecessary delays and produce a win-win situation for all. Past experience has shown that third-party, neutral facilitators have been key for this role.
- "Outside the fence" or "soft tools" must be integral parts of all demilitarization projects. Programs which limit themselves to "inside the fence" (of the destruction facility) or only "hard tools" run a high risk of failure.
- Development and demilitarization must be linked together by Russia and international donors in each project. Local communities, faced with major construction projects and potential risks to public health and environment, must be helped socio-economically to overcome "boom and bust" cycles and to build sustainable economies. This includes impact fees, emergency preparedness and evacuation planning, medical support, and sustainable economic investment.
- Deadline flexibility must be supported by the international community, including international organizations such as the Organization for Prohibition of Chemical Weapons (OPCW). Russia and the United States will miss several legally binding deadlines on chemical weapons stockpile destruction. As long as Russia, with strong international support, and the U.S. are working diligently to destroy their WMD stockpiles, the OPCW must be receptive to deadline extension requests in order not to create unnecessary treaty violations or tempt States Parties to violate environmental and public health requirements.
- The relationship of Russia and the international community, especially the G-8 major donors, must shift from one of patronage to one of partnership. This means that all parties must work cooperatively and transparently, not always the case in the past, in order to facilitate the nonproliferation and demilitarization of dangerous arsenals. In practice, this means that central issues of visa provision, site access, data availability, liability protection, and other related implementation issues must be resolved efficiently to the satisfaction of all parties. Visa "wars," political accusations, secrecy, closed sites, unnecessary taxation, and other bureaucratic tactics cannot be allowed to resurface on any side of bilateral and multilateral operations. Reciprocity is a must amongst all parties.

The purpose of the Forum is to help the international community, under the neutral auspices of the Government of Switzerland and Green Cross, to discuss past experiences, define issues and lessons learned, and move forward on resolving these challenges through open and frank dialogue. Only with closely coordinated teamwork will we all be successful in ridding the world of a major class of mass destruction weapons -- chemical weapons -- and, in the end, hopefully create a safer world for all.

Background

Both the United States and the Soviet Union unilaterally and reciprocally agreed some two decades ago to abolish their large and aging arsenals of chemical weapons. Both countries acknowledged several important liabilities associated with these dangerous stockpiles: the risk of proliferation, diversion, and terrorist theft; the obsolete nature of the weapons, many without modern launch systems; the high cost of maintaining security and safety of the stockpile sites; and the growing international pressure to establish an inclusive demilitarization and inspection regime.

In 1993, the international Chemical Weapons Convention (CWC), negotiated for over twelve years, was opened for signature. Both the United States and Russia signed, along with 128 other countries. Four years later, after much political debate in Moscow and Washington, both countries ratified the convention. The CWC entered into force April 29, 1997, obliging the four acknowledged signatories holding chemical weapons stockpiles at the time (United States, Russia, India, and South Korea) to abolish their arsenals by 2007, with a five-year extension option until 2012. All States Parties, now expanded to 153, commit to halt all research, development, production, use, and transfer of chemical weapons, and to destroy all stockpiles, abandoned chemical weapons, and all production facilities.[4]

Over the past decade, bilateral and multilateral on-site inspections of chemical weapon stockpile sites have illustrated well how vulnerable some, if not all, of these sites are to infiltration, theft, and possible diversion to national and subnational groups. The use of chemical weapons by Iraq against Iraqi Kurds in Halabja in March 1988, and by the Japanese terrorist group, Aum Shinrikyo, in the Tokyo subway on March 20, 1995, has also illustrated the gruesome, mass destruction potential of these deadly weapons. And the September 11, 2001 terrorist attacks in New York, Washington, DC, and Pennsylvania have heightened concern about the vulnerability of stockpiles to aircraft and weapons attack. Most past risk assessments have cited light aircraft and helicopter accidents, lightning strikes, and earthquakes in worst-case analyses; now the potential for intentional, suicidal attacks with heavy, jet-fuel-loaded aircraft and missiles must also be taken into account.

The 2002 meeting of the G-8 industrial countries in Kananaskis, Canada underlined the importance of securing and destroying Russian nuclear, chemical, and biological weapons and agents in order to preclude potential diversion and proliferation to national or subnational terrorist groups. In doing so, these nations pledged $20 billion over the coming decade to help Russia continue to implement its large and costly weapons destruction program. In the case of chemical weapons, the G-8 was following through on promises made to Russia in the mid-1990s when it signed and ratified the CWC but requested international assistance to meet the CWC deadlines for chemical weapons abolition.

The challenges for safe and environmentally sound destruction of chemical weapons stockpiles are many and formidable. Chemical weapons -- artillery shells, aerial bombs, rockets, landmines, submunitions, and bulk tanks -- were primarily designed to be used in battle, not to be disassembled, destroyed, and partially recycled. Thus the question of technology choice is a major first obstacle. Because of this technical complexity, the cost of destruction has also become a major factor, possibly escalating into the tens of billions of dollars for each country. Potential impacts on public health and the environment of local

communities, many unaware prior to the 1990s of the danger lurking in their backyards, is also of major importance. And, of course, the political process for deciding on destruction programs, emergency evacuation procedures, emergency preparedness plans, and socio-economic impacts of billion-dollar facilities employing thousands of workers is also key to a successful program.

This paper will raise these issues of implementation for discussion and hopefully partial, if not full, resolution at the June 26-27, 2003 Forum in Geneva. With over a decade of experience in post-Cold War weapons destruction in Russia, the U.S., and elsewhere, much can be learned in order to smooth future efforts and preclude mistakes of the past.

Chemical weapons demilitarization

Russia has declared approximately 40,000 tons of chemical weapons at seven stockpile sites. Two of these at Kambarka in the Udmurt Republic and Gorny in the Saratov region hold only lewisite, mustard, and lewisite-mustard mixtures -- older, blister agents. The other five sites -- Shchuch'ye in the Kurgan region, Kizner in the Udmurt Republic, Maradikova in the Kirov region, Pochep in the Briansk region, and Leonidovka in the Penza region -- all hold a variety of newer and more deadly Russian nerve agents (VX, sarin, and soman, plus small amounts of lewisite, lewisite-mustard, and phosgene) in varied weapons configurations.

The United States, in comparison, has declared approximately 31,500 tons of chemical weapons at nine sites -- eight in the continental United States (Aberdeen, Maryland; Anniston, Alabama; Blue Grass, Kentucky; Newport, Indiana; Pine Bluff, Arkansas; Pueblo, Colorado; Tooele, Utah; and Umatilla, Oregon) and one on Johnston Atoll in the Pacific Ocean. These contain varied amounts of mustard and nerve agents, with a small amount of older lewisite.

Both countries had first planned construction of regional destruction facilities over twenty years ago. These schemes were halted due to public concern over transportation of live agent through communities and the realization by military authorities that obtaining environmental and other permits for transportation would be complex and time-consuming. The U.S. Congress subsequently banned transportation of chemical weapons early in the U.S. Army's demilitarization program, forcing plans to shift to on-site destruction. In Russia, the Ministry of Defense secretly constructed a centralized destruction facility at Chapayevsk in the 1980s, but was forced to change plans when the local community in 1989 vehemently protested the transportation of chemical weapons into their region. This case remains an excellent, relevant example of the power of local communities to either support or oppose a controversial project.[5]

Thus, Russia and the United States began planning for seven and nine destruction facilities respectively. The United States committed itself in the mid-1980s to a program of incineration at each site, judging the high-temperature technology to be most mature and flexible at the time to handle agent, explosives, propellant, metal parts, and dunnage (wood, fiberglass, and other weapons parts and contaminants). This plan was also supported by the National Research Council.

The first prototype incinerator was constructed on Johnston Atoll in the Pacific Ocean, about 800 miles west of Hawaii, to destroy chemical weapons that had been secretly removed from Okinawa and Germany; it began operating in the early 1990s and finished destruction of its stockpile in 2001. A second incinerator, constructed at Tooele, Utah, began operating in the mid-1990s and continues to burn the diverse arsenal there of some 14,500 tons. Three additional incinerators have been constructed in Alabama, Arkansas, and Oregon and are scheduled to begin operations in the near future. Of the remaining four U.S. chemical weapons stockpile sites, construction has begun at Newport, Indiana and was recently finished at Aberdeen, Maryland on neutralization plants; the Aberdeen plant began operations for mustard neutralization on April 23, 2003. The decision for neutralization technology was made in March 2002 for Pueblo, Colorado, with construction beginning in late 2003; and a technology choice for neutralization in Blue Grass, Kentucky was made just recently, with construction planned for 2004. The United States has thus been successful in destroying some 8,000 tons of chemical weapons to date, about 25% of its declared stockpile.

For a number of reasons, Russia has had less success. To date only four hundred tons of mustard agent have been destroyed at Gorny since its December 2002 startup; also, a few tons of phosgene from the Shchuch'ye stockpile site have been converted to commercial use. Germany supported construction of the prototype lewisite and mustard destruction facility at the Gorny stockpile and has thereby afforded Russia the opportunity to meet the 1% CWC deadline three years late. And, with the release of $160 million in U.S. funding for Shchuch'ye construction in March 2003, major construction is underway for the primary Russian nerve agent destruction facility. Preconstruction activities, supported by the U.S., Italy, Norway, the EU, and Britain, had been ongoing for over a year, but construction had been delayed, along with many other CTR projects, because of U.S. congressional funding cuts and legislative conditions, and the refusal by the U.S. Department of Defense to certify these conditions to Congress.[6]

The reasons for this tardiness in Russian chemical weapons destruction are many, but a primary one has been lack of financial support. Russia, upon signature and ratification of the Chemical Weapons Convention in the mid-1990s, made it abundantly clear to the United States, Europe, and other CWC signatories that it lacked sufficient funds to support a full demilitarization program. Both Europe and the United States assured Russia of their support. Since that time, the United States agreed to provide support for one CW stockpile site, committed to an estimated facility construction cost of $888 million (cost estimated several years ago), and has spent some $260 million to date. Unfortunately, the U.S. Congress (primarily through the House Armed Services Committee) zeroed out requests by the Clinton Administration in fiscal years 2000 and 2001 for $130 million and $35 million respectively for initial construction at Shchuch'ye, and established six conditions on fiscal year 2002 funding of $50 million and on future years. The Bush Administration, through Secretary of Defense Donald Rumsfeld, had refused to certify these conditions until January 10, 2003 when President Bush waived all CTR conditions. On March 19, 2003, some $160 million in fiscal year 2002 and 2003 CTR monies was released for startup of major construction at Shchuch'ye.[7]

Twelve European countries, including the European Union, have also contributed or pledged over $100 million to date for Russian chemical weapons destruction (primarily at Gorny and Shchuch'ye). Russia itself committed $25 million in 2000, the first hard budget figure available; it expanded that to over $100 million for 2001 and 2002, and has reportedly

promised $161 million for 2003, primarily targeted toward infrastructure development at the stockpile sites. Overall costs for the Russian program are unofficially estimated in the $6-10 billion range for full Russian stockpile destruction, less than half the current $24 billion cost for U.S. chemical weapons demilitarization, but still a very large sum for the Russian federal budget today.

Another major issue in the Russian program has been technology selection and development. In July 1994, a U.S. congressional and executive branch delegation to Moscow and Shchuch'ye proposed building an incineration facility at Shchuch'ye. This was flatly rejected by Russian officials as too complex and dangerous, and a joint technology development project was initiated shortly thereafter to try to help the Russian program along.

The Russian-proposed technology for Shchuch'ye, selected in the mid-90s in a study comparing fifty different technologies, was a two-stage process -- neutralization of drained nerve agents with a caustic reagent, and subsequent solidification of the slightly toxic liquid product with asphalt ("bituminization"). A joint Russian-U.S. evaluation of this process concluded in July 1996 determined that it successfully met a destruction efficiency of 99.9999% ("six nines") for both U.S. and Russian nerve agents (Sarin [GB], Soman [GD], and VX) on a laboratory scale, produced no extremely toxic or hazardous waste, and would stand up to independent peer review.[8] This Russian technology is continuing to undergo expanded engineering and development, as well as additional testing of potential environmental and health impacts. Local and regional officials remain concerned that the waste generated may be hazardous and/or too expensive to store for the long term in the Kurgan region. This concern has been further heightened with more recent plans to ship over 25,000 tons of nerve agent from four additional sites to Shchuch'ye for final treatment, thus producing bituminous products that could surpass 150,000 tons for indefinite storage. The fate of these bituminous products is still under debate, causing additional roadblocks politically and serious concerns within the local and regional population. The question of who will fund long-term maintenance of the bitumen-storage sites remains open.

A third obstacle in Russia has been Russian bureaucracy. Under the presidency of Boris Yeltsin, the Russian Ministry of Defense was in charge of stockpile destruction. Although Russia approved the Federal Program for Chemical Weapons Destruction in the 1996-1997 timeframe, it was generally observed that little commitment and progress was made; this may have been due to the very limited annual military budget. President Vladimir Putin moved responsibility from the military to a newly created civilian agency, the Russian Munitions Agency (RMA), in the late 1990s and placed a respected minister from the military-industrial complex, Dr. Zinovy Pak, in charge. Dr. Pak has recently been replaced by Gen. Viktor Kholstov, a former deputy to General Petrov from the Ministry of Defense's chemical munitions department. While General Kholstov is new to the RMA position, his long experience and expertise in chemical weapons destruction provides optimism that he will continue to improve the efficiency and transparency of his demilitarization programs.

In September 2000, Dr. Pak tasked the RMA with elaborating a new overall concept for Russian chemical weapons destruction in order to try to lower costs by a third or more. This plan will now be designed around three primary destruction facilities at Gorny, Shchuch'ye, and Kambarka. The Shchuch'ye facility, partly at the urging of the U.S. Congress, will destroy all nerve agents (as noted above), while the Gorny and Kambarka facilities will manage the lewisite and lewisite-mustard agents. This raises the potentially difficult issue of transportation of weapons, agent, and/or neutralized agent from other nerve agent sites to the

Kurgan Oblast. While transportation was previously banned by Russian federal and state legislation, recent federal amendments have given life to this option again. Local and regional communities and officials, however, are questioning the potential risks. No outreach has yet been undertaken along potential transportation routes.

On May 4, 2001, Russian President Putin also created a new State Commission on Chemical Weapons Destruction, chaired by Sergei Kirienko, Putin's representative (or "super-governor") in the Volga Region, in order to improve collaboration between the federal government, ministries, and regional administrations.[9] At least seven major responsibilities are included in the commission's mandate: (1) development of proposals to the Russian President and government on federal policy and international coordination for destruction of chemical weapons and former production facilities; (2) coordination of activities and information with local populations in stockpile areas; (3) consideration of legal issues for demilitarization activities and for citizen protection; (4) monitoring of the Russian chemical weapons demilitarization program; (5) oversight of funding; (6) prioritization of budgets; and (7) facilitation of international funding and technical assistance.

Public statements of President Putin, Zinovy Pak, Sergei Kirienko, and others, including visits over the last two years of Pak and Kirienko to the United States, also lend credibility to a more serious Russian commitment to fulfilling Russia's legal obligations under the Chemical Weapons Convention and moving forward with the demilitarization program. The Russian government described the program in October 2000 as "one of Russia's most important international commitments." The May 2002 Moscow Summit of Presidents Bush and Putin also emphasized the need for greater cooperation in accelerating the destruction of Russian and U.S. chemical weapons stockpiles, especially in light of post-September 11, 2001 terrorist threats.[10] And the statement by Sergei Kirienko at the Five-Year Review CWC Conference in The Hague in May 2003 also underlined the enduring commitment of Russia to the abolition of its chemical weapons stockpile.

Lessons learned

The process of chemical weapons demilitarization has been shown in both Russia and the U.S. to be technically challenging, politically complicated and demanding, as well as unpredictable in both cost and time. However, a number of important lessons can be drawn from this process over the past decade, which should help expedite implementation in the future.

There is no "silver bullet" technology for destroying all stockpiles and all types of chemical weapons.

Both countries have sought to develop mature, cost-effective, and safe demilitarization technologies, which could be applied to all stockpiles. In the U.S. case, the Army and the National Research Council advocated incineration as the best solution for each of the nine

stockpile sites. However, political opposition from several states, including Kentucky, Indiana, Maryland, and Colorado, made it clear that incineration would have a very difficult time being permitted by state regulatory agencies and approved by local communities. Also, accidental releases of live agent from incinerator smokestacks at Johnston Atoll and Tooele, Utah alarmed state regulators, public health officials, environmentalists, and local citizens. The United States will now utilize four or more different technologies specifically suited to local stockpiles, weapons, politics, and local preferences.

The Russian military has similarly pursued a single, two-stage neutralization and bituminization process for nerve agent destruction, which has come under criticism from the Kurgan region for the amount of waste generated, the cost of long-term storage, and for its perceived, potential long-term impacts on public health and the environment. While a less contentious neutralization process has been developed for lewisite destruction, these are much smaller stockpiles with less significant local impacts, although the second stage processing, including the fate of the arsenic-containing effluents, has yet to be determined.

A toolbox of technology options is needed for weapons demilitarization in order to provide choices to authorities and communities.

It is clear from the past decade that different geographic regions have varied resource constraints; for example, dry regions are skeptical of water-based processes, while wet regions question any landfill options. And chemical agents, energetics, and related materials respond differently to different processes. Mustard agent, for example, neutralizes very well with hot water, while nerve agents require a more caustic process. All of these processes have impacts on natural resources utilized; gaseous, liquid, and solid effluents produced; and safe management of environmental and health impacts. While it can be argued that a single technology provides cost efficiencies, it is apparent that different sites, weapons, and agents require varied options for safe and acceptable destruction.

Demilitarization requires strong national leadership.

The destruction of weapons of mass destruction is obviously controversial in many ways. Local communities understandably perceive the process as potentially very dangerous. Although extremely important from a nonproliferation perspective, it sometimes is defined as more "environmental" than security-related and therefore can take lower priority on military funding ladders. When the U.S. House Armed Services Committee zeroed out Administration funding requests for support of Russian chemical weapons destruction in fiscal years 2000 and 2001, it stated that Shchuch'ye was more an environmental problem for Russia than a security problem for the United States and Europe.

After the tragedies of September 11th, some members of Congress and the Administration are beginning to realize that destruction of the Shchuch'ye stockpile of 5,400 tons of nerve agent, packaged in millions of man-portable artillery shells and hundreds of missile warheads, and located just north of Kazakhstan, is in fact a top nonproliferation and counterterrorism

priority. Similarly, some Russian Duma members who previously placed higher priority on other competing national needs now realize that chemical weapons destruction must be a top priority for Russia. But this will only happen with strong leadership from the highest levels in Washington, Moscow, and other national capitols. And it will only happen if the G-8 leaders commit to implementing their Kananaskis pledges soon.

International burden-sharing for Russian weapons destruction is crucial.

The United States faces a demilitarization price tag of some $24 billion for destruction of the 31,500 tons in its chemical weapons arsenal. It has also committed to funding at least $888 million for the Russian program at Shchuch'ye as part of its G-8 commitment of $10 billion over the coming decade. Yet destruction of the Shchuch'ye stockpile alone is estimated to cost at least $1.6 billion, while the total Russian chemical weapons destruction program will likely surpass $6 billion.

Russia is now committing well over $100 million annually to the program, but it is clear that another $5 billion or more will be necessary to complete destruction of Russia's 40,000 tons. The European Union, Canada, Finland, France, Germany, Great Britain, Italy, the Netherlands, Norway, Poland, Sweden, and Switzerland have all committed a total of some $100 million to Russia's efforts, but this is far from enough. The June 2002 announcement from the G-8 summit meeting in Canada that the G-8 members would commit "up to $10 billion over ten years," to be matched by the United States ("10 plus 10 over 10") to help Russia eliminate weapons of mass destruction is encouraging, but the international burden-sharing must improve in terms of dollar amounts and numbers of participants in order to totally abolish Russia's arsenal.[11]

Investment in local infrastructure and sustainable economies at demilitarization sites is crucial.

Early in the U.S. Cooperative Threat Reduction program Congress stated that all CTR monies should be spent only "inside the fence," that is, only on destruction facilities themselves. However, all Russian sites are so limited in basic infrastructure -- utilities, roads, housing, railroads, and services -- that no facility can operate without considerable development of a local support economy. Local communities in both the United States and Russia recognize their leverage in these projects and understandably are interested in establishing sustainable economies as they transition from secret stockpile sites and closed cities to more public and civilian entities.

Local Russian officials have stated often that they will not permit a "boom and bust" economy to be developed in which a destruction facility is built and operates for five years with a thousand workers, only to be shut down after the stockpile is destroyed. In the United States local officials have also argued for "impact fees" at chemical weapon stockpile sites in order to make long-term capital investments in the community, which will help sustain it far beyond the demilitarization program.

The recent case of Votkinsk, a CTR project to destroy over 800 strategic missiles filled with solid rocket propellant, is a good example of what can happen when little local investment takes place. The city and region of Votkinsk, located in the Udmurt Republic of Russia, requested that a medical clinic be constructed in the town. Neither the U.S. CTR program, nor the Russian government, would agree to fund this -- probably a $1 million investment. For this reason, amongst other related ones, this project was stopped this year after almost $100 million had been spent on its design and development.

While some observers argue that infrastructure investment is a Russian responsibility, it remains obvious that it is an integral part of the demilitarization program and one that Russia cannot fully afford today. What is needed is recognition that development, technical assistance, and demilitarization must go hand-in-hand; in practice, this means that government agencies, such as the U.S. Agency for International Development and the U.S. Cooperative Threat Reduction Program, must begin immediately to coordinate projects in the former Soviet Union. The G-8 members, in making their investments in weapons destruction regions, must also coordinate with their own foreign assistance and development agencies.

The United States must continue to play a leadership role in Russian weapons destruction.

The Cooperative Threat Reduction (CTR) program, established in 1992 with the leadership of Senators Sam Nunn and Richard Lugar and many other supporters, has spent about $260 million to date (plus $160 million just released in March 2003) for Russian chemical weapons destruction and over fifteen times that amount for nuclear and biological weapons destruction. No other country has the financial resources to play this leadership role. No other country has the post-Cold War responsibility to help abolish weapons of mass destruction. And after the tragedies of September 11, 2001, no other country has as much to lose should these weapons proliferate to potential enemies. Only with a continuation of the CTR and related demilitarization programs will other countries and allies feel confident that their relatively smaller efforts will contribute to a successful program.

A strong U.S. role, not only financially but also management-wise, also assures foreign investors and local communities that there will be quality control, good coordination, and accountability on the project. This is key throughout the lifetime of the project, not just in the construction phase.

Neutral facilitation of the demilitarization planning and implementation process is needed.

In a program of this magnitude, with potentially so much at risk, and with so little trust between local, regional, and national authorities and offices, a neutral facilitator becomes absolutely key for the process to move forward efficiently and to (proactively) preclude major roadblocks. The facilitation process managed by the Green Cross/Global Green Legacy Program in the Kurgan Oblast in Russia today includes local outreach offices, public hearings and educational forums, informational materials and media outreach, citizen

advisory commissions, training sessions in public involvement and emergency management, educational seminars for decision-makers and journalists, and independent risk and health assessments. Such a process -- what some call "soft tools" -- is a confidence-building model that promotes transparency, trust, consensus, rule of law, civil society, and in the end a successful program. Although government agencies and contractors can also play a strong role in public relations, a trusted, independent facilitator for public outreach and public involvement is in most cases absolutely essential for these projects to succeed.

Governments and parliaments can be both facilitators and roadblocks in Russian weapons destruction.

In seeking to promote and guide the destruction of Russian weapons of mass destruction, and in its constitutional role as appropriator of U.S. federal spending, the U.S. Congress has exerted much oversight of the Cooperative Threat Reduction program. As the program celebrates its eleventh anniversary in 2003, overall costs have surpassed $5 billion. Some legislators perceive this commitment as a wise investment in nonproliferation and disarmament of former Cold War enemies. Thousands of nuclear warheads and hundreds of launch systems, all formerly targeted at Western allies, have already been destroyed. Dangerous fissile materials have been secured. And former weapons scientists have been transitioned into civilian occupations. However, other legislators perceive the U.S. commitment as too unilateral, with little Russian and European reciprocation in major projects for international security enhancement; they also remain suspicious of Russian transparency and arms control implementation.

For these reasons the U.S. Congress has passed several CTR-wide conditions, mentioned earlier, as well as six conditions specific to Russian chemical weapons destruction. Also, some members and staff of the House Armed Services Committee have sought in the past three years to eliminate Department of Defense requests for the CW destruction program. In fiscal years 2000 and 2001, as noted above, they were successful in cutting the full requests -- $130 million and $35 million respectively, but in August 2001 their cut of $50 million for fiscal year 2002 was restored in full committee deliberations.

Congressional conditions can be a helpful facilitator at times in encouraging certain program directions. For example, two recent conditions have demanded that both Russia and the international community participate more actively in Russian weapons destruction; this has encouraged the Kremlin and Duma in Moscow to increase their annual funding, and has also helped leverage European and other governments to commit additional or new funds. The G-8 pledges at Kananaskis in 2002 were no doubt a result of some of this political pressure.

However, conditions can also present roadblocks. The Congress has requested that the Administration certify, for example, that Russia is fully abiding by both the Chemical Weapons Convention and the Biological Weapons Convention. Also requested is certification that Russia has fully declared the size of its chemical weapons stockpile. These issues are open to interpretation and political winds and have stalled critical funding for recent fiscal years. Governments and parliaments, while understandably fulfilling their oversight functions of federal spending, must be careful not to construct unnecessary roadblocks to important national and international policy goals.

The tasks ahead

It is clear that Russia is fully committed to destroying its 40,000 tons of chemical weapons and implementing its legal responsibilities under the international Chemical Weapons Convention. Also clear is that the United States, European allies, the G-8, and other countries are committed to helping make this and other weapons destruction programs happen. However, some of the challenges ahead are already clear today:

Anticipating changes in costs and schedules.

The U.S. experience in chemical weapons destruction provides some insight into how challenging, demanding, and costly this task will be for Russia (and other CW-possessors). The United States began its destruction program over two decades ago and first projected some $2 billion in program costs and completion by 1994. Program costs have grown to twelve times original estimates (not accounting for inflation), and schedules have slipped by twenty years. Most recent estimates project full destruction for the U.S. by 2012-2015, although this may still change in light of new assessments of destruction approaches after the September 11th attacks.

The new heightened awareness of terrorist threats globally, the stated desire of Al Qaeda and other terrorist organizations to obtain weapons of mass destruction, and recent intelligence reports predicting future terrorist strikes with WMD, have all intensified the importance of the safe and efficient elimination of chemical weapons stockpiles.

Meeting the funding needs of the Russian chemical weapons destruction program.

The United States spends over $1 billion annually for its own chemical weapons destruction program. Russia is now appropriating well over $100 million annually for its own program. As noted earlier, this is a more than six-fold increase from prior years for Russia, but still insufficient to cover demilitarization costs.

The Russian program, currently estimated unofficially at $6-10 billion, will be less expensive than the $24 billion program in the U.S. This is primarily for reasons of technology and national labor and capital costs, but nonetheless a daunting figure for the struggling Russian economy.

If one assumes that total programmatic costs will remain in the $6 billion range, that the U.S. will follow through on its commitment of almost $900 million for facility construction at Shchuch'ye, and that Russia will be able to fund at least $1 billion over the next decade, then the international community must provide $4 billion in support to Russia for chemical weapons destruction alone. Before the G-8 meeting in early June 2003 in Evian, France only $100-150 million has been spent and pledged. This leaves the demilitarization program desperately short of its goal.

It is readily apparent that more financial support is needed from more countries, and those countries already participating will need to increase and extend their support. A realistic goal would be for all European nations to participate in this task, along with most of the Mideast region and Japan. These countries all have much to lose should Russian chemical weapons be diverted to terrorist groups or regions in conflict today. The 2002 G-8 summit in Canada, noted earlier, pledged "up to $20 billion" for Russian weapons destruction and placed a high priority on chemical weapons abolition; if fully implemented over the next decade, this will be a major step forward in helping to assure international security.

Freeing up annual Cooperative Threat Reduction funds, leveraging European and other additional or new funds.

Russia must recognize that CTR funds (and possibly G-8 funds as well) are subject to the democratic appropriations process in Washington and, as such, will come with certain political demands and conditions. On the one hand, Russia needs to be responsive to these requests; but on the other, the United States must be sensitive to the fact that this is a Russian program and it is very much in U.S. security interests to destroy these weapons.

Facility construction at the Shchuch'ye chemical weapons stockpile is key to moving the Russian program forward. This effort, largely funded by the United States, had been stalled until recently for almost three years because of the elimination of fiscal year 2000 and 2001 funding from the CTR program for chemical weapons destruction. The FY2002 budget included $50 million for Russian chemical weapons destruction but these funds were held up because of the refusal of the Defense Department to certify that Russia has fully and accurately disclosed the size of its chemical weapons stockpile. It was not until the CTR program threatened to shut down the Shchuch'ye project on October 1, 2002 that the Congress provided waiver authority for the President, and the White House finally issued waivers in January 2003.[12]

In the meantime, some of prior year CTR funds ($20 million) allocated to improved site security at Shchuch'ye had also been held up around congressional conditions. President Bush has given high priority to enhancing security at Russian chemical weapons sites and to destroying the Russian stockpile. The Shchuch'ye project, and other weapons destruction programs critical to counterterrorism and nonproliferation programs, must not be stalled any longer. There must be a delinking of political conditions and weapons destruction. This point was emphasized by National Security Advisor Condoleeza Rice in a letter to Senator Richard Lugar and others on July 30, 2002: "…the Administration has urged the conferees to the FY2003 Defense Authorization bill to provide the President the authority to waive the conditions on CTR chemical weapons destruction assistance, if he determines that to do so is in the national interest." This policy was reiterated in congressional testimony by government representatives from the Departments of Defense, State, and Energy in May, 2003.[13]

Developing and implementing a practical demilitarization plan in Russia.

Another congressional condition for continued CTR funding of Russian chemical weapons destruction is the production of a "practical plan" for demilitarization. Just as the United States has modified transportation planning, facility siting, and technology choices for weapons destruction over the past twenty years, so too Russia is faced with continued challenges to develop an affordable yet safe program for destroying its seven large stockpiles.

More than a decade ago, both countries moved away from centralized and regional facilities to a program of on-site destruction. This reduced risks of transportation yet increased costs of facility construction. Russia, very concerned that it cannot meet the costs of building seven separate destruction plants, has most recently proposed building three major facilities at Gorny, Kambarka, and Shchuch'ye. Facilities at Gorny and Kambarka would handle lewisite and mustard stocks, while Shchuch'ye would destroy all nerve agents and their neutralized effluents.

While likely reducing overall program costs, this new plan provides many challenges from a transportation perspective. Neither roads nor rails in Russia are in good condition in the stockpile regions, so transportation presents risks of accident, theft, and terrorist attack. In "National Dialogue" meetings sponsored by the Global Green/Green Cross Legacy Program in Moscow in November 2001, 2002, and 2003, Russian regional officials responded very skeptically to a federal official's remarks about moving chemical weapons stockpiles to the Kurgan region.

The Russian Munitions Agency, along with other appropriate ministries and regional officials, must fully address these questions as planning moves forward. Also, the United States and other international supporters need to provide support and technical advice on risk and public health assessments for these regions, and must also recognize that such plans are never written in stone for such demanding, complex, and long-term projects. Over time, plans predictably evolve as political, economic, and technical requirements change.[14]

Providing international technical cooperation and exchange for nerve agent destruction.

Destroying dangerous and polluting weapons that were never designed to be disassembled and recycled is a challenging task. A large toolbox of applicable technologies has been found absolutely necessary to meet technical, environmental, public health, economic, and socio-political demands and constraints.

The United States and European allies have developed a wide range of destruction technologies using both low and high pressure, low and high temperature, and varied chemical and electrical processes. While Europe has focused its destruction technologies primarily on mustard agent, given the large amounts of old and abandoned mustard-filled weapons from World War I, the United States has spent a great deal of time and money on the demilitarization of nerve agents, the bulk of post-World War II chemical weapons arsenals. Some of these technologies will be applicable to Russian nerve agents, which vary

somewhat in composition from U.S. nerve agents, and will be helpful in finalizing a practical plan for Russia, noted above.

The Russian-proposed technology for Shchuch'ye is a two-stage process -- neutralization and bituminization. While solidification of waste products with asphalt or concrete is common in many countries, it presents challenges in terms of volume and potential leaching for toxic waste landfills. The current Shchuch'ye plan is to store this waste, some 5-10 times the initial volume of the nerve agent, in a sealed, retrievable storage facility in the Kurgan region, an area with very high water tables. Local officials are concerned over the long-term costs of land allocation and safe maintenance; this concern is now magnified by the possibility of shipping four additional stockpile sites to Shchuch'ye, thus raising the amount of nerve agent destroyed from 5,400 tons to over 32,500 tons. This could result in the storage of over 150,000-300,000 tons of toxic waste.

In order to finalize the nerve agent destruction process for Shchuch'ye, and build regional, national, and international consensus on best practices, the United States, Russia, and Europe should organize an international working group to consider alternatives for the second processing stage at Shchuch'ye and for first-stage, pre-shipment processes at the other four nerve agent sites.

Establishing local, regional, and national stakeholder involvement in decision-making and international coordination among nations.

It should come as no surprise that the dismantlement and destruction of weapons of mass destruction -- nuclear, chemical, and biological -- as well as the cleanup of conventional ordnance such as landmines and unexploded ordnance, can be a very controversial, slow, dangerous, and political process. Military authorities and contractors are tasked with specific timelines and budgets and grow impatient with public questions and complaints. Local and regional officials are most concerned about constituent interests. Citizens, public health officials, environmental activists, and non-governmental organizations raise key issues concerning impacts on living environments. And arms controllers and diplomats point to legally binding treaty deadlines.

It is important to empower all of these stakeholders in the demilitarization process in order to produce not only the best and safest technical practices but also the most efficient and practical program that is not stalled by state regulatory processes or citizen protests and legal challenges.

A Russian model developed by the Green Cross/Global Green Legacy Program and implemented at Shchuch'ye and in other Russian stockpile regions involves local outreach offices, local Citizens' Advisory Commissions (CACs), local public hearings and educational events, a proactive information campaign, U.S.-Russian training programs on public involvement and emergency preparedness, training for hospital personnel, promotion of local social and medical programs, promotion of small and medium sized enterprises, promotion of international support, and independent risk and health assessments. This model, designed for implementation by a neutral, third party facilitator, has been very successful in building consensus and trust in local and regional communities, which continue to mistrust contractors and authorities, be they Russian or American. As a side benefit, this model also encourages

development of civil society, rule of law, and democratic processes -- all important in today's socio-economic transitions in Russia.

As the Russian chemical weapons program expands to include all stockpile sites, it will be important that all stockpile regions and all regions included in a transportation plan be afforded full stakeholder involvement. The Legacy Program has also organized and promoted a national dialogue that meets annually in Moscow; this is where all sites and regions can meet with federal officials to better understand the national nature of the program and resolve outstanding issues.

Such an open decision-making process is critical to facilitating an efficient process that does not break down at critical moments. The 1989 Russian experience at Chapayevsk where local citizens stopped the opening of a central chemical weapons destruction facility has illustrated the high risks of a secretive, non-inclusive, and non-transparent process. Similarly, the U.S. congressional halt to facility construction at two stockpile sites in Kentucky and Colorado pending further development of non-incineration technologies has shown the importance of a strong public involvement process. Today, all U.S. chemical weapons stockpile sites have Citizens' Advisory Commissions, with varying degrees of success in full stakeholder involvement; there are also more than 300 Restoration Advisory Boards (RABs) for closing military bases, most with major weapons cleanup issues.

All authorities, in both Russia and the United States, must see public involvement in weapons destruction processes as an integral part of the effort from the start. Only by building consensus early in the process can agreement be reached for a successful program.[15]

Providing flexibility under international treaty deadlines.

The negotiators of the 1993 Chemical Weapons Convention agreed that ten years should provide sufficient time for stockpile destruction, yet there was little understanding of when the convention might actually enter into force or how technically challenging the destruction process would actually be.

The four years from the initial signing of the CWC to its entry into force in April 1997 provided additional time for the major chemical weapons powers to further their destruction programs, but schedules have continued to slip. While the United States has met the first two interim CWC deadlines (1 percent and 20 percent) for stockpile destruction, it is now clear that it will not meet the 45 and 100 percent destruction targets by 2004 and 2007 respectively. Russia missed the first two interim deadlines although it has just met the 1 percent deadline three years late; and in December 2001 Russia requested the convention-allowed, five-year extension to 2012 for full destruction.

Given the complexity and cost of weapons destruction, signatories to the CWC must be responsive to deadline extension requests from all declared chemical weapons powers. While all stakeholders are committed to efficient and timely destruction, especially in the post-September 11th world, arbitrary deadlines run the risk of unnecessarily threatening local public health and environmental standards. Russia, in particular, will certainly need several years beyond 2012 to finish its destruction campaign; and it's likely that the U.S. will too.

With sufficient international political and financial support, however, this large task can be accomplished successfully.

Moving from patronage to partnership in weapons destruction in Russia.

Over the past decade there has been residual suspicion in the U.S., Russia, and elsewhere over the true motives behind weapons destruction projects. U.S. critics and opponents have suspected, for example, that Russia was simply using Cooperative Threat Reduction funding as a substitute for additional spending elsewhere on its weapons procurement programs. Russians, on the other hand, suspected that it might not be in the interest of Russia to destroy its stockpiles, long the mainstay of Russian national security, nor to provide foreigners access to formerly secret and closed sites in a open-ended "fishing expedition" for information.

These mutual suspicions, driven partly by old Cold War ideologies, have been harmful and destructive to efficient weapons destruction processes. They have taken the practical form, at times, of refused access to nuclear, chemical, and biological sites; of delayed or denied visa requests; of expelled diplomats and workers; of taxes on importation of donated materials and equipment; of disagreements on liability protections; and of slowness in finalizing umbrella and implementation agreements.

These bureaucratic roadblocks, often based upon historical, ideological, and/or bureaucratic suspicions, must be overcome if weapons destruction programs are to be truly successful and timely. This will require moving from past perceptions of a patronage relationship and competing visions of "who's in charge" and "who's calling the shots" to a partnership in which all stakeholders maintain the same vision, work closely together in an atmosphere of transparency and access, and recognize that the goals of weapons destruction and nonproliferation are mutually advantageous.

This will require less political finger-pointing; improved access to sites; improved transparency of information; elimination of bureaucratic red-tape; streamlining of agreements and memoranda of understanding; close coordination on the operative level by participating nations; and the recognition by all of the greater importance of safely eliminating dangerous and deadly legacies of the Cold War.

Conclusion

More than 70,000 tons of chemical weapons have been accumulated in the United States and Russia over the past half century. Smaller arsenals have been stockpiled in India and South Korea; have been most recently discovered in Albania; and a dozen additional countries are suspected of non-declared chemical weapons stocks. Furthermore, hundreds of thousands of tons of old chemical weapons have been dumped at sea by all the major powers throughout the twentieth century, and Russia and the United States suspect hundreds of old burial sites on land as well. European nations continue to confront abandoned chemical weapons from World War I, and Japan is beginning an enormous cleanup of old chemical weapons in China.

Fortunately, 153 countries, including the five noted above, have signed the international Chemical Weapons Convention banning all development, production, and stockpiles of these deadly weapons. These signatories have agreed to destroy their stockpiles by 2007, ten years after entry into force of the CWC (with a possible extension to 2012). Exploration and excavation of sea and land dumps will take many more decades of effort.

As of mid-2003, the United States has successfully destroyed some 25 percent of its 31,500 tons of chemical weapons at two of nine stockpile sites. Russia has destroyed approximately one percent of its 40,000 tons at one of seven sites.

The enormous costs, the large technical and political challenges, the high risks of public health and environmental damage, and the potential threats of theft, terrorist attack, and proliferation all demand a multinational, cooperative effort to abolish these arsenals once and for all. Regional, national, and international security will be much improved and a global taboo will be established for the first time on a whole class of weapons of mass destruction.

But the actual implementation -- as opposed to the strategic architecture -- of safe and environmentally sound destruction programs requires political, technical, and financial support for Russia from the whole international community. To date a dozen countries from Europe and the United States have committed and pledged about $1 billion total to a projected $6 billion Russian chemical weapons destruction program. This must expand in both national participants and amounts by a factor of 4-5 for this abolition program to be fully successful. Full and swift implementation of the G-8's pledge of up to $20 billion to Russian weapons destruction would be a good place to start.

And lastly, a successful demilitarization program will take practical steps by all parties -- both donor and recipient nations, as well as contractors -- in transparency, access, and related policies of tax exemption, liability protections, stakeholder involvement, practical and tangible improvements for local communities, close coordination on the implementation level between participating nations, and other key issues -- to turn the past decade of patronage relationships into a new decade of partnership for nonproliferation, counterterrorism, and true global security.

[1] This policy paper, intended for discussion at the international "Forum for Chemical Weapons Destruction: Minimizing Risks to Implementation of the Global Partnership Initiative," June 26-27, 2003, in Geneva, Switzerland is an updated and revised version of the article, "Russian Chemical Weapons Destruction: Successes and Challenges," in R.J. Einhorn and M.A. Flournoy, eds., *Protecting Against the Spread of Nuclear, Biological, and Chemical Weapons*, Washington, DC: CSIS, January 2003. The author would like to thank Christina Bigler, Jessica Leas, Stephan Robinson, and Roland Wiederkehr for helpful comments on this version; all errors and omissions are solely the responsibility of the author.

[2] Paul F. Walker, Ph.D., is Legacy Program Director for Global Green USA, the U.S. affiliate of Green Cross International founded by Mikhail Gorbachev. The Legacy Program, otherwise known as the Environmental Consequences of Wars and Conflicts Program, is an international effort, in coordination with Green Cross Russia, Green Cross Switzerland, Green Cross Belarus, Green Cross Ukraine, Global Green USA, and Green Cross International, to promote and facilitate the safe and environmentally sound destruction of Cold War weapons stockpiles, the cleanup of military lands and post-conflict regions, and implementation of arms control agreements. Walker is a former Professional Staff Member of the Armed Services Committee, U.S. House of Representatives.

[3] CTR destruction figures as of May 6, 2003 from the "Nunn-Lugar Scorecard" on U.S. Senator Richard Lugar's website, http://lugar.senate.gov/nunn_lugar_scorecard.html. For additional information, see the Defense Threat Reduction Agency (DTRA) website at www.dtra.gov, and the May 8, 2003 testimony of Deputy Under Secretary of Defense for Technology Security Policy and Counterproliferation Lisa Bronson, Committee on International Relations, U.S. House of Representatives, Washington, DC.

[4] The number of countries that have ratified, or acceded to, the Chemical Weapons Convention, is 153 as of 6 June 2003. An additional 25 countries have signed but not ratified the CWC, and another 16 have neither signed nor ratified. In addition to the four originally declared stockpile countries, Albania declared a small chemical weapons stockpile earlier this year. See www.opcw.org for the latest list of member states and a fuller explanation of membership status.

[5] The construction of the Chapayevsk CW destruction facility had been kept secret until announced in Paris by Eduard Shevardnadze, the Soviet Foreign Minister. Citizens in the Chapeyevsk region, upon hearing of the federal plan to ship chemical weapons to their region, organized the simultaneous shutdown of all factories in the area and protests by thousands of local citizens before the facility's front gates. To this day the Chapayevsk demilitarization facility has not been able to operate as originally intended. It is used for training purposes only.

[6] There have been two sets of conditions established by the U.S. Congress, one for all Cooperative Threat Reduction (CTR) programs, and another set specifically directed at Russian chemical weapons destruction programs under CTR. The first set, general CTR conditions, requires the U.S. President to certify to Congress annually the following six conditions (Section 1203, National Defense Authorization Act for Fiscal Year 1994, H.R. 2401 -- Cooperative Threat Reduction Act of 1993): Assistance authorized by subsection (a) may not be provided to any independent state of the former Soviet Union for any year unless the President certifies to Congress for that year that the proposed recipient state is committed to each of the following:
(1) Making substantial investment of its resources for dismantling or destroying its weapons of mass destruction, if such state has an obligation under a treaty or other agreement to destroy or dismantle any such weapons.
(2) Foregoing any military modernization program that exceeds legitimate defense requirements and foregoing the replacement of destroyed weapons of mass destruction.
(3) Foregoing any use in new nuclear weapons of fissionable or other components of destroyed nuclear weapons.
(4) Facilitating United States verification of any weapons destruction carried out under this title, section 1412(b) of the Former Soviet Union Demilitarization Act of 1992 (title XIV of Public Law 102-484; 22 U.S.C. 590(b)), or section 212(b) of the Soviet Nuclear Threat Reduction Act of 1991 (title II of Public Law 102-228; 22 U.S.C. 2551 note).
(5) Complying with all relevant arms control agreements.
(6) Observing internationally recognized human rights, including the protection of minorities.

The second set of conditions, specific to chemical weapons, requires the U.S. Secretary of Defense to certify to Congress the following six conditions (National Defense Authorization Act for 2002, Conference Report to Accompany S. 1438, Report 107-333. Title XIII, Cooperative Threat Reduction, Section 1308, Chemical Weapons Destruction): Section 1305 of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106-65; 113 Stat. 794; 22 U.S.C. 5952 note) is amended by inserting before the period at the end the following: "until the Secretary of Defense submits to Congress a certification 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;
(5) an agreement by Russia to destroy or convert its chemical weapons production facilities at Volgograd and Novocheboksar[s]k; and
(6) a demonstrated commitment from the international community to fund and build infrastructure needed to support and operate the facility."

[7] Presidential Determination No. 2003-10 for chemical weapons conditions reads as follows:
For Immediate Release
Office of the Press Secretary
January 14, 2003
Presidential Determination No. 2003-10
Memorandum for the Secretary of State
Subject: Presidential Determination on Waiver Of Conditions on Obligation and Expenditure Of Funds for Planning, Design, and Construction of a Chemical Weapons Destruction Facility in Russia
Pursuant to the authority vested in me by section 8144 of the Department of Defense Appropriations Act for Fiscal Year 2003 (Public Law 107-248) (the "Act"), I hereby certify that waiving the conditions described in section 1305 of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106-65) is important to the national security interests of the United States, and include herein, for submission to the Congress, the statement, justification, and plan described in section 8144(a) of the Act. You are authorized and directed to transmit this certification, including the statement, justification, and plan to the Congress and to arrange for its publication in the Federal Register. GEORGE W. BUSH

Presidential Determination No. 2003-11 on CTR conditions reads as follows:
For Immediate Release
Office of the Press Secretary
January 14, 2003
Presidential Determination No. 2003-11
Memorandum for the Secretary of State
SUBJECT: Presidential Determination on Waiver Of Restrictions on Assistance to Russia Under the Cooperative Threat Reduction Act of 1993 and Title V of the Freedom Support Act
Pursuant to the authority vested in me by Section 1306 of the National Defense Authorization Act for Fiscal Year 2003 (public Law 107-314), I hereby certify that waiving the restrictions contained in subsection of section 1203 of the Cooperative Threat Reduction Act of 1993 (22 U.S.C. 5952), as amended, and the requirements contained in section 502 of the FREEDOM Support Act (22 U.S.C. 5852) during fiscal year 2003 with respect to the Russian Federation is important to the National Security interests of the United States. I have enclosed the unclassified report described in section 1306(b)(1) of the National Defense Authorization Act for Fiscal Year 2003, together with a classified annex. You are authorized and directed to transmit this certification and report with its classified annex to the Congress and to arrange for the publication of this certification in the Federal Register. GEORGE W. BUSH

[8] Joint Evaluation of the Russian Two-Stage Chemical Agent Destruction Process: Final Joint Evaluation Technical Report, July 1996, Bechtel National Inc.

[9] Other members initially of the State Commission in 2001 were Dr. Zinovy Pak, Deputy Chairman and Director of the Russian Munitions Agency; A. Antipin, Putin representative in the Urals Region; D. Ayatskov, Governor of the Saratov Oblast; Sergei Baranovsky, President of Green Cross Russia; N. Bezborodov, Deputy Chair of the

Duma Defense Committee; O. Bogomolov, Governor of the Kurgan Oblast; V. Botshkariov, Governor of the Penza Oblast; A. Volkov, President of the Udmurt Republic; V. Volkov, Putin representative in the Central Region; A. Kvashnin, Head of the Military General Staff; Yu. Lodkin, Governor of the Briansk Oblast; G. Mamedov, Deputy Minister of Foreign Affairs; V. Mosgaliov, Deputy Minister of Economic Development and Trade; G. Petrov, Deputy Minister of Health; N. Plate, First Scientific Secretary of the Russian Academy of Sciences; A. Poryadin, First Deputy Minister of Natural Resources; L. Safronov, Deputy Minister of Machine Industry, Sciences and Technology; V. Sergeyenkov, Governor of the Kirov Oblast; A. Ulyukayev, First Deputy Minister of Finance; M. Faleyev, Deputy Minister of Civil Defense, Emergencies, and Liquidation of Consequences of Natural Disasters; and N. Fyodorov, President of the Chuvash Republic.

[10] The arms reduction treaty signed by Presidents Bush and Putin on May 24, 2002 stated the following: "We also intend to intensify our cooperation concerning destruction of chemical weapons." See New York Times, Saturday, May 25, 2002, p. A7.

[11] Commitments and pledges under consideration through 2001 (in US dollars) included Canada, $224,000; European Union, $8.4 million; Finland, $893,000; Germany, $30.5 million; Great Britain, $17.1 million; Italy, $6.9 million; Norway, $878,000; Sweden, $1.7 million; Switzerland, $12 million; Netherlands, $10 million; and the U.S., $888 million. These figures will likely increase with the June 2002 commitment by the G-8 to contribute up to $10 billion (plus $10 billion from the U.S.) over the coming decade. For example, Canada has now stated that it will spend some 100 million Canadian dollars annually on Russian weapons destruction; Germany has committed to supporting CW destruction at Kambarka; and Norway has just agreed to dismantle two or more Russian attack submarines.

[12] The Bush Administration requested "waiver authority" in the fiscal year 2002 supplemental military appropriations bill and in the fiscal year 2003 authorization bill in Congress in order to waive the six general CTR conditions noted in footnote #2 above. The Administration in late July 2002 also requested waiver authority for the six chemical weapons related conditions and supported an amendment to the Senate FY03 Defense Appropriations bill by Senator Richard Lugar. Waiver authority was granted by Congress in the fall 2002 for three years, FY2003-2005, for the CTR general conditions and for one year, FY2003, for the chemical weapons related conditions. Both House and Senate Defense Authorization bills for FY2004 currently include a one-year extension of the chemical weapons related waiver.

[13] Deputy Under Secretary of Defense for Technology Security Policy and Counterproliferation Lisa Bronson testified before the Subcommittees on Europe, Terrorism, Non-Proliferation and Human Rights of the House International Relations Committee on May 8, 2003 that "the more significant threat to U.S. security stems from the possibility that WMD-related materials in the FSU might fall into the hands of terrorists or rogue states. The porous borders of the FSU states offer the potential for illicit transit of WMD and related materials to terrorist organizations and their sponsors…The Administration urges the Congress to make both waiver authorities permanent."

[14] For a recent update on the Russian chemical weapons destruction plan, see the statement submitted to the Executive Council, Organization for the Prohibition of Chemical Weapons (OPCW), "Information on the Implementation of the Plans related to Chemical Weapons Destruction in the Russian Federation," June 25, 2002, EC-29/NAT.3.

[15] For a Russian-American discussion on public involvement in chemical weapons destruction, see the Green Cross/Global Green panels, "Facilitating Chemical Weapons Destruction: Public Outreach, Involvement, and Decision-Making," in the proceedings of the CWD2002 conference, The Hague, May 21-23, 2002; and in the proceedings of the CWD2003 conference, Prague, May 20-22, 2003, sponsored by the Defence Science and Technology Laboratories (DSTL), ICF Consulting, and Science Applications International Corporation (SAIC).