Russia’s New Plan For Chemical Weapons Destruction

On June 8, more than 100 diplomats and dignitaries from the United States, Canada, eight European
countries, and the European Union gathered by a soggy field outside the western Siberian town of
Shchuch’ye, 975 miles southeast of Moscow. The purpose of this “International Day” celebration
was to reaffirm the Russian government’s intention to build a large facility at Shchuch’ye to destroy
thousands of tons of deadly nerve agents and to thank countries that have donated or pledged
assistance. Senior Russian government officials were in attendance, including Deputy Prime Minister
Ilya Klebanov.

After a traditional bread-and-salt ceremony with the governor of the Kurgan Region, each national
representative gave an upbeat speech, followed by the playing of the national anthems of donor-
countries and the raising of their flags. Sergei Kiriyenko, a former Russian prime minister who now
heads a commission overseeing chemical disarmament, argued that the task of eliminating the toxic
legacy of the Cold War is an international responsibility. “Common security cannot be created by one
country alone,” he said. “The chemical weapons stockpiled by the people of the world don’t belong
to one country; they are a common problem, and we bear responsibility for them.”

Instead of paying tribute to international donors, the June 8 event had originally been planned as a
groundbreaking ceremony for the nerve agent destruction facility at Shchuch’ye. The
groundbreaking has now been postponed indefinitely, a delay indicative of the numerous problems
Moscow has encountered with its chemical demilitarization program. Indeed, more than four years
after the entry into force of the Chemical Weapons Convention (CWC), to which Russia is a party,
Moscow’s failure to begin destruction of the vast chemical weapons stockpile it inherited from the
Soviet Union is a matter of growing international concern. Because a key objective of the convention
is to eliminate existing stocks of chemical weapons, the fact that Russia has already missed the first
destruction milestone specified in the treaty and is certain to miss the second threatens the
credibility of the chemical disarmament regime.

Although the Russian government has taken positive steps in recent months to get its chemical
demilitarization program back on track, including a major bureaucratic reorganization and the
development of a revised federal destruction plan, the success of these efforts will depend on the
willingness of the United States and the international community to provide generous financial
assistance. Equally important will be the political will of Russian leaders, from President Vladimir
Putin on down, to shoulder a substantial share of the burden.

Russia’s Chemical Weapons Stockpile

The size and relative insecurity of Russia’s chemical weapons stockpile pose major proliferation risks.
At approximately 40,000 metric tons, Russia’s declared chemical stockpile is the world’s largest. The
weapons are stored at seven depots, six west of the Ural Mountains and one east, at Shchuch’ye.
About 80 percent of the stockpile, located at five of the seven sites, consists of some 32,480 metric
tons of nerve agents. These supertoxic chemicals, only a few drops of which are sufficient to kill,
include sarin and both thickened and non-thickened forms of soman and Russian VX. (Russian VX is
similar to the U.S. variant but has some differences in chemical structure.) All of the nerve agents
are contained in various types of munitions: Shchuch’ye and Kizner store mainly missile and rocket
warheads and artillery shells, whereas Poche, Leonidovka, and Maradykovsky house large air-delivered bombs and spray tanks.

In addition to nerve agents, the Russian chemical weapons stockpile contains some 7,520 metric tons of blister agents (mustard, lewisite, and mustard-lewisite mixture), which are stored in massive 80-ton containers at Gorny and Kambarka. Finally, artillery shells containing 500 metric tons of phosgene, a World War I-era choking agent, are present at Shchuchye.

The depot associated with Shchuchye is situated close to the village of Panovoye. This site stores 1.9 million artillery shells and some 600 rocket and missile warheads containing 5,460 metric tons of nerve agents—13.6 percent of the total Russian chemical weapons stockpile and nearly half of the former Soviet ground-launched chemical arsenal. The weapons are housed in low, shed-like buildings made of wood and corrugated iron, surrounded by fences and barbed wire. As a safety precaution, the shells and most of the warheads are stored separately from their explosive burster charges. Nevertheless, an undisclosed number of 650-millimeter missile warheads are loaded with agent-filled bomblets containing small explosive charges, making them more hazardous to handle and destroy.

Until 1993, the 800 residents of Panovoye were unaware that they were living next to one of the world’s largest chemical weapons depots. Although Russian government officials have tried to reassure the inhabitants about safety concerns, the nerve agent stocks are poorly protected against fire and natural disaster. As a precaution, gas masks have been distributed to every household. Security and proliferation concerns also exist because the physical protection of the depot is limited, the guards are poorly paid, and many of the chemical weapons stored at the site are highly portable.

Senator Richard Lugar (R-IN), a strong supporter of the Shchuchye project, has warned that sarin-filled 85-millimeter chemical artillery shells are so small that three of them could be smuggled out in a briefcase. Although the shells are stored without their burster charges, terrorists could steal them and use plastic explosives to disperse the nerve-agent fill. No thefts of chemical munitions have been reported to date, but conventional weapons have been stolen from other Russian military bases with insider help. Unfortunately, the other chemical weapons storage locations in Russia are no more secure than the Shchuchye depot.

**Progress to Date**

Moscow’s efforts to rid itself of its large chemical weapons stockpile and its former production facilities, as required by the CWC, have suffered from numerous problems since Russia ratified the convention in November 1997. Ratification was followed by three years of inaction on chemical weapons destruction because of the August 1998 financial crisis that led to the devaluation of the ruble and bureaucratic infighting among the three government bodies responsible for the program: the Ministry of Defense, the Ministry of Finance, and the President’s Committee on Convention-Related Issues of Chemical and Biological Weapons. The cost of destroying the entire stockpile, estimated at roughly $7 billion, was unaffordable without extensive international assistance, yet donor countries were unwilling to contribute significant amounts in the absence of a clear political and financial commitment to the program by the Russian government.

As a result of these problems, Moscow missed the first intermediate deadline in the CWC to destroy 1 percent of its most dangerous weapons (dubbed “Category 1”) by April 29, 2000, and it had to request a two-year deadline extension from the treaty’s oversight body, the Organization for the Prohibition of Chemical Weapons (OPCW), located in The Hague. Russia is now certain to miss the second CWC milestone to destroy 20 percent of its Category 1 stocks by April 29, 2002, as well the rescheduled 1 percent deadline on the same date. Although the treaty requires that destruction of the entire chemical weapons stockpile be completed by 2007, Russian officials have already said they will ask for a five-year extension until 2012. The CWC allows such a one-time extension under exceptional circumstances with the authorization of the OPCW. Few analysts believe, however, that even the 2012 deadline is realistic.

Despite this discouraging picture, a number of positive developments in recent months have raised hopes that the Russian chemical weapons destruction program is finally turning a corner. Russia has begun to eliminate shells containing phosgene (a “Category 2” agent), a task that will be completed
by the end of this year. Because the Russian chemical industry uses large amounts of phosgene as an ingredient for manufacturing plastics, Moscow is considering recycling the 500 metric tons of phosgene extracted from chemical munitions for industrial purposes, thereby deriving some economic benefit from the demilitarization effort. The OPCW, however, has insisted on verifying the disposal of phosgene, and the Russians have objected, a dispute that has yet to be resolved. Meanwhile, Moscow has said that it will destroy all “Category 3” materials, such as unfilled munitions and devices designed for use with chemical weapons, by the end of 2002.

Another step forward has been the reorganization and streamlining of the Russian government bureaucracy responsible for the safe storage and disposal of the chemical weapons stockpile, consolidating all program management into a new civilian body known as the Russian Munitions Agency (RMA). Headed by Zinoviy Pak, a former engineer and senior official, the RMA was established in 1999. In order to defuse resistance to the new organization from the Ministry of Defense, Pak cleverly moved some senior military officers involved in the program into a chemical directorate within the RMA. According to U.S. Cooperative Threat Reduction (CTR) officials, transferring the program from military to civilian control has resulted in a “day-and-night change in attitude” on the Russian side. They give Pak high marks for his commitment to chemical demilitarization and his unusual degree of openness with Western donors.

A third positive change is that, after years of desultory support for chemical disarmament, the Russian government is finally allocating high-level political attention and significant financial resources to the issue. President Putin has stated in meetings of the Russian Security Council that the chemical weapons destruction program is a priority of his administration. In May 2001, he issued a decree establishing the State Commission on Chemical Disarmament, headed by Kiriyenko, currently the presidential envoy to the Volga Federal District, where four-fifths of Russia’s chemical weapons are stored. The Kiriyenko commission, which met for the first time on May 31, is made up of federal officials, representatives of the affected regions, and local residents. Its mandate is to coordinate the work of federal and regional executive bodies to resolve social, political, and legal problems associated with chemical weapons destruction. Accordingly, Pak does not view the Kiriyenko commission as a bureaucratic rival but rather as an ally in getting the job done.

The Revised Destruction Plan

On June 14, several Russian government agencies, including the RMA, the Ministry of Finance, and the Ministry of Economic Development, met to discuss a revised federal plan for chemical weapons destruction developed by the RMA. Prime Minister Mikhail Kasyanov told the assembled cabinet officials that Russia’s inability to begin destruction of its chemical weapons because of the high cost had created an intolerable political situation. “Today,” he declared, “we must clarify the program of destroying chemical weapons stockpiles and be certain the program will be fulfilled.” The officials discussed the RMA proposal and agreed to start a formal process of interagency deliberations, with the goal of preparing a draft resolution amending the 1996 federal plan for chemical weapons destruction. Once completed and adopted by the Russian government, the revised plan will be submitted to the OPCW for approval.

According to Pak, the RMA’s proposed plan includes “a number of radical steps” to make the chemical weapons destruction process more rapid and affordable, with the aim of completing it by 2012. In order to cut by 30-50 percent the estimated $7 billion price tag for destroying the Russian stockpile, the scheme calls for scaling back the number of planned destruction facilities from seven (one at each storage depot) to three: one full-scale facility at Shchuch’ye, one at Kambarka, and a pilot plant at Gorny. There are also plans to build three small neutralization facilities at Pochep, Maradykovsky, and Leonidovka to process nerve agents removed from aerial bombs and spray tanks, thereby rendering them less hazardous so they can be transported in sealed drums rather than in weapons to Shchuch’ye for final disposal.

The revised federal plan includes a modified destruction timetable whose milestones differ significantly from those in the CWC. This schedule calls for destroying 1 percent of the Russian Category 1 stockpile by the end of 2003, 20 percent by the end of 2007, 45 percent by the end of 2008, and 100 percent by the end of 2011. Finally, the modified federal plan calls for the destruction or conversion for peaceful uses of all former chemical weapons production facilities in Russia by the
Russia’s New Plan For Chemical Weapons Destruction
Published on Arms Control Association (https://www.armscontrol.org)

end of 2007.5

Whereas the United States is employing high-temperature incineration to eliminate most of its chemical weapons (with plans to use chemical neutralization at a few sites), Russia will rely exclusively on a two-step process known as “neutralization-bituminization.” First, agent-filled artillery shells and warheads will be drilled and drained of their contents, and the metal parts will be routed to a furnace for decontamination. Meanwhile, the agents will be mixed with neutralizing chemicals to convert them into less toxic substances, resulting in a three-fold increase in fluid volume. The neutralized solution will pass through a solvent recovery process to reduce its total volume. It will then be mixed with bitumen (a tar-like substance), yielding a slurry that will be heated to remove volatile chemicals, and then poured into steel drums and allowed to solidify like asphalt. Thousands of steel drums containing bituminized material will be stored at Shchuch’ye in a concrete hazardous-waste bunker that is sealed and isolated from the surrounding soil. Because the local residents rely on ground water for drinking, the hazardous-waste storage site will be monitored continually to prevent environmental contamination.

In an effort to make up for lost time and to meet the 2012 CWC deadline for eliminating Russia’s entire chemical weapons stockpile, Pak plans to expand the design capacity of the munitions destruction building (MDB) at Shchuch’ye from the initial target of 500 metric tons of nerve agent per year to 800 metric tons. In addition to the U.S.-financed plant, the Russians plan to build a second, identical MDB at the facility with financial support from European countries. The two MDBs would operate in parallel so that the facility as a whole would be capable of destroying 1,600 metric tons of nerve agent per year. Because the industrial complex financed by the United States will be capable of supporting two MDBs, the Russians should be able to construct the second building for an additional cost of only $175 million. According to a CTR official, if sufficient funds were made available, the two MDBs could be built concurrently over a period of four years so that destruction operations could begin in early 2006. Given current financial constraints, however, a more likely scenario is that the two plants will be built sequentially, with a completion date in 2008 or 2009.

In addition to the second MDB at Shchuch’ye, Russia will be responsible for building extensive socioeconomic infrastructure projects outside the fence line of the facility, at a total cost of $300-400 million. These projects will include housing developments and water, gas, and electricity supplies for the benefit of the local residents. After decades of Soviet secrecy and lies, people living near the planned destruction facility are fearful of its potential impact on their health and skeptical of official reassurances. For this reason, effective public outreach and socioeconomic infrastructure projects will be needed to win the hearts and minds of the local community, whose political support is necessary for the project to proceed.

Significantly, the revised federal plan drops the earlier concept of basing roughly 2,000-3,400 destruction plant workers permanently at Shchuch’ye with their families. Instead, the workers will travel to the site and work in temporary shifts, in a manner similar to that of oil riggers at offshore drilling platforms in the North Sea. This new approach will greatly reduce the amount of housing and other social infrastructure needed to support the destruction facility. Once the nerve agent stocks at Shchuch’ye have been destroyed, the outside workers will depart and all specialized destruction equipment will be removed from the destruction facility. At that time, the buildings and infrastructure may be converted for other types of industrial production, yielding permanent economic benefits for the region.

So far at Shchuch’ye, workers have installed a temporary access road, cleared 250 acres of birch forest for the future plant site, dug dewatering trenches because of the high water table, started building housing for plant officials, and begun to lay water and gas lines. CTR officials are now ready to begin construction of the first MDB, but to secure funding, they must await the outcome of Bush administration policy reviews and a congressional appropriation in the FY 2002 defense budget.

The RMA’s revised destruction plan also covers blister agents, which are stored in giant 80-ton holding tanks at Gorny and Kambarka. Because the bulk tanks are too dangerous to move and some have begun to leak, the agents must be destroyed in place. Gorny, 660 miles southeast of Moscow in the Volga River region, houses 1,160 metric tons of mustard, lewisite, and mustard-lewisite mixture. At this site, Germany has donated some $50 million for the construction of a pilot-scale blister agent
destruction facility. Pak has urged his experts to explore ways of deriving economic benefit from the byproducts of the destroyed munitions to help recoup the costs of destruction. One idea is to convert lewisite (a blister agent containing arsenic) into arsenite, which will be stored as a “state reserve of unique strategic material” for potential use in the commercial semiconductor industry.6

Although Pak contends that the destruction plant at Gorny will become operational in early April 2002, German advisers predict that the plant will not be up and running before 2003. According to Alexander Pikayev, a non-proliferation analyst at the Carnegie Moscow Center, “It’s a pity that, even with the considerable increase in funding for chemical demilitarization this year, Russia will not complete construction of the small pilot plant at Gorny in time to meet the first extended deadline for destroying 1 percent of the Category 1 stocks.” Construction of a full-scale blister agent destruction facility at Kambarka will probably not begin until 2004, drawing on lessons learned from the Gorny experience.

As part of the revised federal plan for chemical weapons destruction, Pak has proposed transporting some 5,700 metric tons of nerve agents contained in munitions from the depot at Kizner to the Shchuch’ye destruction facility, once the weapons stored at Shchuch’ye itself have been destroyed. Because the munitions stored at Kizner are in excellent physical condition, it may not be necessary from a technical standpoint to neutralize their contents prior to transport. Nevertheless, shipping the weapons by rail from one depot to the other, a distance of more than 500 miles, would pose significant logistical challenges. Because deteriorating rail beds in Russia have caused serious accidents, the rail infrastructure between the two sites may have to be refurbished before transportation of the weapons can occur. According to Stephan Robinson of Green Cross International in Switzerland, although a number of safety problems with the transport of munitions from Kizner to Shchuch’ye remain unresolved, “there are several years to prepare for this, as the Kizner stocks will not be transported until after those at Shchuch’ye have been destroyed.”

The RMA is also considering how best to destroy the 21,380 metric tons of nerve agents contained in aerial bombs and spray tanks stored at Pochepe, Leonidovka, and Maradykovsky. Transportation of these bulky munitions would be difficult, and in the event even a single bomb ruptures, a large amount of deadly agent would be released. One possibility would be to drill and drain the weapons on-site, neutralize the toxic fill in small-scale destruction facilities, and transport the neutralized material in sealed drums by rail for disposal by bituminisation at Shchuch’ye. The revised federal plan also suggests that, in some cases, the neutralized material might be transported to civil chemical plants and used as raw material for commercial production.

Technical details of the proposed transportation plan clearly remain to be worked out. A number of legal hurdles will also have to be overcome, such as laws passed by the Russian regions of Tartarstan and Bashkortostan barring the transport of chemical weapons across their territories. The Putin administration is currently engaged in a systematic effort to harmonize regional and local laws with federal legislation. Even so, the chemical weapons transportation plan will have to be explained to the affected communities if it is not to provoke strong grass-roots opposition. The Kiriyenko commission will attempt to resolve these various political problems.

Finally, issues of CWC compliance must be considered when refining the transportation plan. Although neutralized nerve agents would no longer meet the Russian legal definition of a chemical weapon, the neutralized material would still contain high levels of certain treaty-controlled chemicals that could potentially be used to reconstitute nerve agents. For this reason, the OPCW would need to monitor the transportation and destruction of the neutralized material to prevent diversion or theft.

Prospects for the Future

Although the RMA’s chemical weapons destruction plan is a step in the right direction, it still faces daunting financial, logistical, legal, and political hurdles. According to RMA officials, the proposal is now being revised and should be ready for resubmission to the Russian government this summer. Nevertheless, although the new approach is more realistic than the original federal plan introduced in 1996, the interagency process of drafting a formal government resolution may take a good deal of time. It is also unclear how Russia’s lower house of parliament, the State Duma, and regional governments will view the resolution.7
Whatever progress is made over the next several months, no one is under any illusion that Russia will meet next April’s CWC deadline to destroy 20 percent of its Category 1 chemical weapons—roughly 8,000 metric tons. Because the CWC requires a 180-day notification period if a member state anticipates being unable to meet a treaty deadline, Moscow will have to submit a formal request to the OPCW by this October to extend both the 20 percent deadline and, for a second time, the 1 percent deadline.

But even achieving the revised plan’s new proposed target of 2007 for destroying 20 percent of the Category 1 stocks could be problematic. In the best case, the first MDB at Shchuch‘ye will be operational in 2005 with a capacity of 800 metric tons per year, and the second one will be ready in 2006 with the same capacity, making it possible to destroy 4,000 metric tons by the end of 2007. Destruction of the entire Gorny stockpile would add only about 1,100 metric tons. Thus, to reach the target of 8,000 metric tons, Russia would need to destroy 2,900 metric tons at Kambarka, yet construction of that plant is unlikely to start before 2004 and will probably take four years to build.

At the end of the day, the success of the Russian effort will depend in large part on funding from international donors, especially the United States. Washington agreed in 1996 to finance Russian chemical demilitarization activities at Shchuch‘ye with $888 million in aid over a 10-year period. Although the United States has so far provided about $229 million for development activities related to the Shchuch‘ye facility, a freeze in U.S. support over the past two years has prevented construction from starting.

Opponents of the Shchuch‘ye project in the U.S. Congress deleted funding for it from the Pentagon’s Cooperative Threat Reduction program in the FY 2000 and 2001 budgets. Some critics argued that the chemical weapons at Shchuch‘ye pose more of an environmental threat to Russia than a security threat to the United States, while others called for Moscow and other countries to invest more of their own money in the project before U.S. funding could be restored. Nevertheless, the CTR program was authorized to spend up to $88.4 million left over from the FY 1999 appropriation to complete the initial phase of work at Shchuch‘ye, including site preparations related to the construction of the destruction facility.

At present, most of the conditions the U.S. Senate set in 2000 for unfreezing the funds for the Shchuch‘ye facility appear to have been met, including a substantial investment in the project by Russia and European countries. In 2001, Moscow increased its overall funding for chemical weapons destruction six-fold from the previous year to about $106 million, of which $25 million was earmarked for Shchuch‘ye. Moreover, the Council of the European Union, meeting in Luxembourg on June 25, decided to support both “infrastructure-building related to the destruction of nerve gases stored at the Shchuch‘ye site” and the RMA’s mandate “to fulfill the Russian Federation’s responsibilities under the Chemical Weapons Convention.”

Several European countries have also pledged significant amounts of money for Shchuch‘ye, including a British promise of $11-12 million over three years, an Italian offer of $7.15 million, and a Canadian contract for $250,000. The Swiss parliament is also seriously considering a major contribution. Some of the European offers, however, are contingent on the United States continuing to take the lead on the project.

Whether U.S. funding for the construction of the Shchuch‘ye facility will be restored in the fiscal year 2002 defense budget, and if so, at what level, remains uncertain. Although a majority of the Senate supports the project, the Republican-controlled House of Representatives may continue to oppose it unless the Bush administration weighs in with strong support. The administration’s position will probably depend on the outcome of two ongoing policy reviews that are expected to be completed soon: a National Security Council-led review of all assistance programs to Russia and a defense strategy review ordered by Secretary of Defense Donald Rumsfeld.

Russia will also have to demonstrate its willingness to shoulder a substantial part of the financial burden, including the $300-400 million needed to support the socioeconomic infrastructure at Shchuch‘ye. Kiriyenko has recommended that Russia allocate $310 million for chemical weapons destruction in the 2002 budget, but he acknowledges that $206.8 million would be more realistic in view of the nation’s economic straits. According to former U.S. Representative Glen Browder, an expert on chemical demilitarization who attended the June 8 event at Shchuch‘ye, “I think the destruction program is making progress; my questions relate to what Moscow will do when the
financial heavy lifting becomes Russia’s responsibility."

Meanwhile, OPCW officials are increasingly concerned about the political ramifications of the repeated delays in the Russian destruction effort. If the world’s largest possessor of chemical weapons cannot destroy its stockpile on schedule, other countries may begin to question the utility of the CWC regime. On May 14, at the OPCW’s sixth session of the Conference of the States Parties, OPCW Director-General José Bustani warned, “The fundamental issue here is that the primary objective of the convention—the complete elimination of chemical weapons arsenals—is not being achieved within the timelines required by the convention itself. This cannot but have a deleterious effect on the general political will to ensure full compliance with these obligations by other states-parties, and in other areas of implementation.”

Beyond building and operating the chemical weapons destruction facilities, the Russian chemical demilitarization effort will entail additional financial challenges. The OPCW currently faces a serious budgetary crisis that may force a major cutback in its verification activities. One cause of this shortfall has been Moscow’s failure to reimburse the organization for the costs of inspecting the chemical weapons depots and former production facilities on its territory, as required by the CWC. Russia has only recently identified funds for this purpose. When the destruction of chemical weapons gets under way in earnest, however, the verification costs associated with the continuous monitoring of destruction by OPCW inspection teams will start to balloon. Thus, unless Russia finds a way to cover these additional expenses, they will exacerbate the OPCW’s financial crisis.

Russia is not the only party to the CWC that will have trouble meeting the treaty deadlines for destroying chemical weapons. Although the United States is currently about a year ahead of schedule, having destroyed more than 20 percent of its Category 1 stocks, opposition from local communities near some of the chemical weapons destruction sites may delay the current schedule. Nevertheless, Russia is clearly the tall pole in the CWC tent. If Moscow fails to commit the necessary resources and political will, and if the United States and other members of the international community do not provide the financial assistance needed to eliminate the vast Russian stockpile in a timely manner, the credibility of the chemical disarmament regime will be at risk.

NOTES
1. The European countries represented at the International Day event were Finland, Germany, Italy, the Netherlands, Norway, Sweden, Switzerland, and the United Kingdom.

Jonathan B. Tucker directs the Chemical and Biological Weapons Nonproliferation Program in the Washington, D.C., office of the Monterey Institute of International Studies’ Center for Nonproliferation Studies.

Source URL: https://www.armscontrol.org/act/2001-07/features/russia%E2%80%99s-new-plan-chemical-weapons-destruction