

NONPROLIFERATION APPROACHES IN THE CAUCASUS

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Recent reports of the vast oil deposits in the Caspian Sea region have focused international attention on the importance of stability in the Caucasus. Yet the nuclear materials and expertise in these often overlooked newly independent states (Georgia, Armenia, and Azerbaijan) also pose a problem of international concern on three levels. At the ground level, maintaining control over these materials and watching over scientific expertise are imperative, yet measures are lacking as in most regions of the former Soviet Union, including Russia herself. At the domestic policy level, the political and economic instability of these states in transition hampers the strengthening of key institutions for the prevention of proliferation and provides an environment conducive to black market activities. At the regional level, the Caucasus represent both a geostrategically vital conduit and buffer between Russia and the Middle East and from the Caspian Sea to the West. Established smuggling routes are believed to exist. These factors combine to warrant a closer look at the approaches to nonproliferation in the Caucasus, which have the potential to deter, or foster, the leakage of nuclear materials and technology to potential proliferators.

This report analyzes nonproliferation approaches in Georgia, Armenia, and Azerbaijan by examining the following indicators: 1) the quantity of nuclear materials in the region; 2) the strength of domestic export controls; 3) the degree of participation in the international nonproliferation regime; and 4) the feasibility of creating a

Caucasian nuclear-weapon-free zone. It also evaluates U.S. policy responses to existing regional proliferation threats. While the desire to stem proliferation may exist in all three republics, economic conditions and problems with domestic policy implementation, as a result of weak statehood, may override this desire if the West does not offer additional assistance to support and strengthen nonproliferation efforts.

MATERIALS AND THEIR PROTECTION, CONTROL, AND ACCOUNTING

In order to understand proliferation problems on the ground level, it is imperative to take stock of the nuclear materials and control over them in each of the Caucasian republics and to assume that material protection, control, and accounting (MPC & A) will help guard against theft. While at first glance the quantity of fissile material may seem insignificant, the proliferation concern should also include such nuclear materials as spent fuel and radioactive waste, which subnational groups might attempt to use in terrorist acts. The discovery of previously unknown stocks of nuclear materials in the area, combined with lax MPC & A at some sites, also gives rise to concern.

Georgia

Of the three republics, Georgia presents the most worrisome case, both in terms of the type of nuclear mate-

rial present, and, in one instance, the lack of control over it. While Georgia has no nuclear power plants, the small Caucasian republic does house two nuclear research institutes, the Institute of Physics, located in Tbilisi, and the I. N. Vekua Physics and Technology Institute, located in Sukhumi.

The Institute of Physics has a pool IRT research reactor and an associated subcritical assembly located in Mtskheta (approximately 20 kilometers from Tbilisi). In 1988, memories of the Chernobyl accident spurred popular opposition and an interruption in reactor operation, which eventually resulted in permanent closure of the reactor in early 1990. At this point, the Georgian Academy of Sciences decided to dismantle the reactor. During operation, the research reactor used Uranium-235 enriched up to 90 percent.¹ The subcritical assembly used an unspecified amount of highly enriched uranium (HEU) as fuel. When the reactor closed in 1990, it contained 9.5 kilograms of fresh fuel. Some of the spent fuel went back to Russia in March 1991, but the dissolution of the Soviet Union in December of that year complicated matters. As a newly independent state, Georgia became a foreign country and, by Russian law, cannot send the fresh or spent fuel back to Russia without agreeing to take back the waste that results from reprocessing the materials. In August 1995, Georgia sold approximately five kilograms of the HEU to Uzbekistan, at a reported cost of \$6,000.² A Georgian Foreign Ministry official statement later noted that Georgia sold the shipment for \$20,000.³ The reactor site currently houses 4.3 kilograms of fresh HEU fuel and 800 grams (five assemblies) of spent nuclear fuel.⁴ In January 1996, the United States became involved in trying to help Georgia unburden herself from the fresh and spent fuel and started negotiating options with Georgia and Russia.⁵ In January 1997, Director of the Institute of Physics Giorgi Kharadze said that Georgia is "open to all proposals" except those involving "rogue regimes" or where the material would be used for military purposes.⁶ To date, the three sides have not reached a conclusion.

According to a Russian Foreign Ministry official, Russia has offered two alternatives to Georgia, neither of which would involve monetary compensation for the fuel. In the first option, Russia would take back and keep the fresh and spent fuel if Georgia acknowledges that the material is Russian. In the second, Russia would declare the material as Georgian, accept and reprocess all of the fuel, but demand that Georgia take back the

waste resulting from reprocessing.⁷ Since it lacks an appropriate facility for radioactive waste disposal, Georgia feels it cannot accept such a proposal.⁸ Georgia's main interests include: 1) ensuring that Russia takes both the fresh and spent fuel; and 2) retaining a nuclear research program. Georgian officials have already formulated plans to convert the IRT-M to run on low-enriched uranium (LEU). More recently, sources have indicated that the United Kingdom might also become involved in helping relieve Tbilisi of the material.⁹

In the meantime, MPC & A improvements at Mtskheta began in May 1996. A special blank-walled building, equipped with Advantox alarm systems, remote monitoring, and a brick barrier in front of the entrance, currently houses the fresh fuel. In addition, personnel from the Chief Police Board of the Ministry of Internal Affairs guard the entire facility.¹⁰ The United States aided with the installation of the monitoring system and the brick barrier, while a portion of 1996 International Atomic Energy Agency (IAEA) safety assistance also went toward improving MPC & A at the facility.¹¹ Although improvements in MPC & A should decrease the chances of diversion, permanent resolution of the ownership and fate of the HEU is imperative from a proliferation perspective.

The situation at the Vekua Physics and Technology Institute in Sukhumi presents a more ominous threat. Historically, nuclear research in the Sukhumi area included uranium enrichment through diffusion technologies and centrifuge research.¹² Although reports about the presence of nuclear reactors at the Vekua Institute conflict, sources indicate that two kilograms of HEU were present at the facility during the early 1990s.¹³ The last physical inventory occurred in 1992. Since Sukhumi is located in Abkhazia, the site of a civil war in which Abkhazians have declared independence from Georgia, no one has been allowed into the facility to take stock of the materials there. Russian troops currently occupy Abkhazia under a Commonwealth of Independent States mandate, yet access to the Vekua Institute is still problematic. While Georgia demands that any visit to the facility must recognize Georgia's sovereignty, the Abkhaz government does not concede to Georgia's right to allow inspection of a facility located in Abkhazia. The Abkhazians requested that a team from the Russian Ministry of Atomic Energy (Minatom) take an inventory, but the Russian troops turned the group away at the border because they did not have permission from Georgia.¹⁴

Russian sources note that this action was a bureaucratic mistake. With the permission of Tbilisi, a Russian team of nuclear specialists, mostly from Obninsk will likely visit the Vekua Institute in 1998 to perform an inventory and attempt to negotiate the return of the material to Russia.¹⁵

However, there is speculation as to whether the facility is still standing and whether the material has not already been diverted. The civil war in Abkhazia has left many areas shattered. Well-established smuggling routes, linked to a strong ethnic diaspora in Turkey and the Middle East, and the lack of MPC & A at the Sukhumi facility make the potential for diversion extremely high.¹⁶ In fact a recent smuggling case alleges that nuclear material found in Belarus may have originated from the Vekua Institute.¹⁷ In addition, scientists from Sukhumi are leaving the area because of the difficult situation and damage from the civil war there.

A more recent event raises concern also about the lack of control over non-weapons usable nuclear materials. Several soldiers at the Lilo military base suffered radiation poisoning and burns after exposure to Cesium-137 capsules that had been removed from their protective casings. Apparently, Soviet troops had left behind the capsules, used in radiation detection devices, after withdrawal. An investigation uncovered 15 capsules both on and beyond the base territory.¹⁸ Although this highly radioactive material is not weapons usable, it could be used in a radiological device or terrorist act with great consequence, as the sores on the soldiers' bodies demonstrate. This danger, coupled with the fact that the material was not accounted for, creates speculation that more such stocks of unprotected nuclear materials could exist. In fact, similar situations might exist at former Soviet bases in Anaklia, Meria, and another case of radiation poisoning recently surfaced at the Shatili base.¹⁹

While these incidents demonstrate primarily the lack of protection, control, and accounting over nuclear materials in Georgia, a number of additional cases suggest Georgian involvement in nuclear material smuggling also. For example, in late 1993, three Georgians were arrested in Bursa, Turkey, for attempting to sell 4.5 kilograms of a substance believed to be uranium for \$150,000 per kilogram.²⁰ Another report notes that a case occurred earlier in March 1993, in which six kilograms of uranium enriched to an unspecified level were taken from Tashkent to Grozny, to Georgia, to Nakhichevan, and finally to Turkey through the Aralik border gate in Kars

province.²¹

In January 1996, Georgia was allegedly involved in two additional cases. In the first, six Lithuanians and a Georgian were detained as they tried to sell 100 kilograms of radioactive material for \$50,000 in Visaginas, Lithuania.²² Ignalina Nuclear Power Plant (NPP) Director Viktor Shevaldin denied any involvement in the case on the part of the Ignalina NPP.²³ In Senate testimony, U.S. Central Intelligence Agency Director John Deutch noted that Lithuanian authorities had stated that the material was Uranium-238 and came from a company responsible for maintenance at Ignalina.²⁴ An Indian newspaper alleged that the material was headed for Pakistan via Georgia. This purchase by Pakistan would have complemented a recent procurement from China and the purchase of laser equipment used in the enrichment process.²⁵ The second case in early 1996 involved 1.2 kilograms of Uranium-235. The arrest of Haydar Akhan in Zurich on January 22, 1996 with a 12-gram sample of the Uranium-235 he was trying to sell led police to confiscate the rest of the material in a raid in Yalova, Turkey on January 26, 1996. Accomplices Osman Oruc and Mehmet Oztuerk revealed that Akhan intended to sell the material to Libyan buyers for \$1.5 million. Oruc and Oztuerk allegedly obtained the material in 1994 from Georgian President Shevardnadze's security chief (a man referred to as "Taraci") for \$100,000. Ahmet Dursun Yalcinkaya, another suspect in the case, testified that he met with Taraci in Kazuvri in early October 1995 to discuss the sale of three kilograms of Uranium-235 for \$200,000. Turkish police believe that these three kilograms remain hidden in the mountains in Turkey.²⁶

Another more recent smuggling case occurred in April 1997, when the Georgian Ministry of Security arrested Dzhumber Dzidziguri, David Otinashvili, and Mr. Kharatyan, chief specialist at the dosimetry laboratory of the Tbilisi Institute of Meteorology, for alleged nuclear smuggling. Mr. Kharatyan reportedly diverted 20 grams of a plutonium-beryllium substance from his lab. Dzidziguri and Otinashvili then traveled to Turkey a number of times in search of a buyer for the material they were offering at \$600,000. Authorities confiscated the material, which was emitting 2,000 times the permissible level of radioactivity.²⁷

While the veracity of these claims remains undetermined, they cannot be dismissed. Indeed, when combined with the presence of weapons-usable material, the incidents raise concerns about Georgia's role, intended

or not, in the potential proliferation of weapons of mass destruction (WMD).

Armenia

Reports indicate that two nuclear research facilities exist in Armenia: the Yerevan Institute of Physics (in Yerevan) and the Analitsark Research Facility (in Gyumri). As far as is known, neither houses any fissile material. The Yerevan Institute of Physics holds a six-giga-electronvolt electron ring accelerator and participates in research on accelerator physics.²⁸ The Analitsark Plant produces analytical and testing devices for nuclear power plants.²⁹

In addition, Armenia has one nuclear power station at Metsamor, located approximately 28 kilometers outside of Yerevan, which houses two VVER-440 reactors. Metsamor closed after the Spitak earthquake on December 7, 1988, even though the plant sustained no real damage as a result of the quake (Unit 1 went off line on February 25, 1989; Unit 2, a V-230 model, went off line on March 18, 1989). Popular opposition kept the plant closed until 1993, when Armenia decided to reopen Metsamor and began preparations to restart the reactors, given the energy crisis in the country at the time. Unit 2 went back on line on October 26, 1995, and uses Uranium-235 enriched to 3.3 percent. It produced 46 percent of energy output in Armenia in 1996.³⁰ Plans for restarting Unit 1 exist but seem very unlikely since it is a first generation VVER which would need considerable safety upgrades before coming back on line. A more likely alternative now consists of plans to construct two new reactors at Metsamor, each with a 1,000 megawatt electric generating capacity.³¹

Reports estimate that Metsamor houses anywhere from 75 to 160 tons of spent nuclear fuel.³² Current storage is nearing capacity, and construction of a new fuel depository should finish by the end of 1998. The French firm Framatome has developed the project, which has been funded by a FF 15.5 million grant and FF 24.5 million in long-term loans from France.³³ Germany will also aid in financing the construction of the depository.³⁴

Despite Azerbaijani claims to the contrary, Armenia maintains that it uses nuclear energy for strictly peaceful purposes. As an example, in return for Russian nuclear fuel, technical assistance, and safety monitoring, Armenia promised not to use nuclear fuel or the reactor for military purposes nor to transfer nuclear ma-

terial to a third country.³⁵ The Metsamor Nuclear Power Plant also participates in the standard IAEA MPC & A system. In addition to these safeguards, the Ministry of Defense provides special troops for guarding a wide boundary around the plant. The Ministry of Internal Affairs is responsible for protecting a more narrow perimeter and also trains personnel to safeguard areas inside the plant.³⁶

There are no known stocks of HEU or plutonium on Armenia's territory. MPC & A for the nuclear materials present in Armenia is somewhat encouraging. However, diversion of the nuclear materials present in Armenia for use in a terrorist act, rather than traditional nuclear weapons, is not implausible.

In fact, some parties suggest that Armenia's Metsamor serves as a drop-off or transit point for nuclear weapon materials and technology. For example, in May 1995, the Azerbaijani press printed an article claiming that "credible sources" in Moscow noted that Russia was planning to transport materials secretly via Armenia for reactors in Iran and use deliveries to Metsamor as a cover.³⁷ Later, in February 1996, the Azerbaijani press alleged that officials from the Atomic Energy Organization of Iran (AEOI) had conducted "unofficial consultations" with specialists from Metsamor. The Iranian Embassy in Armenia denied the accusations. The article also noted that Metsamor is run by Russian nuclear specialists, due to a lack of Armenian nuclear experts, and again accused Russia of using Metsamor as a "donor point" to provide Iran with nuclear technology.³⁸

Another reported case of Russian-Armenian illicit cooperation, possibly involving missile systems with a range of 300 kilometers (190 miles), further demonstrates the possibility that Armenia might serve as a drop-off point for Russian materials and technology. In February 1997, Russian sources (Aman Tuleyev, Russian Minister for CIS Cooperation) disclosed reports of military shipments to Armenia and ethnic Armenians in Nagorno Karabakh. Then Russian Minister of Defense Igor Rodionov confirmed these reports and acknowledged that the weapons, sent from Russian stockpiles from 1994 to 1996, were delivered free-of-charge. Arsen Gasparyan of the Armenian Foreign Ministry denied the statements made by Rodionov and Tuleyev.³⁹ In March 1997, the Azerbaijani Foreign Ministry released a statement that indicated its belief that the shipments included missiles with a range of 300 kilometers capable of carrying nuclear warheads. It also alleged that the Russian Min-

istry of Defense trained Armenian servicemen in the operation of these missile systems near Moscow and at Kasputin Yar. The Armenian Defense Ministry denied the accusations with the excuse that Armenia cannot afford to purchase such systems.⁴⁰ In speaking to the Azerbaijani Parliament, Foreign Minister Hasan Hasanov did not say what type of missiles he believed Armenia had procured. Deputy Security Minister Galip Haligov did note that Armenia had received 1,000 “Strela” shoulder-mounted anti-aircraft rockets.^{41, 42} Some sources say the weapons were shipped from Russia across the Caspian Sea and through Iran to Armenia.⁴³ While no nuclear materials appear to be involved, the case indicates the ease with which items can cross Armenia’s borders without apparent detection.

Later, in September 1997, Azerbaijan heightened the allegations against Armenia when Azerbaijani Foreign Minister Hasan Hasanov accused Armenia of obtaining nuclear warheads from Russia.⁴⁴ An Armenian Defense Ministry spokesman rejected the statement. Arsen Gasparyan, an Armenian Foreign Ministry spokesman, termed the statement a provocation and noted that Armenia fully complies with its Treaty on the Non-Proliferation of Nuclear Weapons (NPT) obligations.⁴⁵ Russian Foreign Ministry spokesman Valerii Nesterushkin denied the allegations on October 2, 1997, noting that Russia had destroyed its medium- and short-range nuclear missiles in May 1991 in accordance with the Intermediate Nuclear Forces (INF) Treaty.⁴⁶

While the Azerbaijani accusations tend to demonstrate the role that regional politics play in nonproliferation issues in the Caucasus, Armenia’s economic ties with Iran and Russia, combined with the accusations, raise concerns about Armenia’s position as a possible transshipper of materials. In this case, even the strongest MPC & A cannot prevent nuclear materials from falling into the wrong hands.

Azerbaijan

Azerbaijan does not have any known nuclear research centers, nuclear power plants, or fissile material on its territory, although an unconfirmed report suggests that some 350 organizations possessed a total of 950 radiation sources in Azerbaijan prior to 1988.⁴⁷ Azerbaijan does house one radioactive waste storage facility, the Izotop Industrial Complex, located on approximately six hectares of land 30 kilometers from Baku. It contains 510 tons of low-level radioactive waste (LLW) stored in

10 tanks, nine of which are completely full. In 1994, officials estimated reconstruction costs at 13 billion manat. Since then, the government has allocated only 400 million manat, which financed a fence and foundation pit.⁴⁸

Azerbaijani experts have expressed concern that a lack of centralized material control and accounting, coupled with weak border control, may lead to illegal imports of radioactive waste from abroad, specifically from the restarted Metsamor nuclear power plant in Armenia. The Ministry of Economy, Ministry of Health, and Goskomtekhnadzor drafted a law—“On Responsibilities/Duties of State Bodies in Enhancing Nuclear Safety in the Republic of Azerbaijan”—in response to the lack of a centralized system that left materials spread throughout the Baku region. As of February 1996, the Cabinet of Ministers had not adopted the law. Yet that same month, 173 containers of radioactive sources, including Cesium-137, were found in a forest near Baku. The source of the waste is unclear.⁴⁹ Prior to this incident, in May 1995, radioactive waste found its way into the Baku Bina airport as well. The Azerbaijan Transport Prosecutor’s Office discovered two containers of radioactive waste, one of which came through Amsterdam from the French company Flimberge, the other of which reportedly came from the U.S. firm Ponder International Service. The 763-kilogram container from France reportedly held a Cesium-137 gamma radiation source, two Americium-241 neutron sources, and beryllium.⁵⁰

On the surface level, the absence of fissile material in Azerbaijan might tend to relax proliferation fears. Yet there are no IAEA safeguards on existing nuclear material, and recent reports of previously unaccounted for nuclear materials appearing in the forest further demonstrate a strong need for a comprehensive MPC & A program in Azerbaijan. The possible existence of more such caches of nuclear material, no matter what kind, warrants greater concern with respect to nonproliferation in Azerbaijan.

In addition, a number of alleged smuggling cases involving Azerbaijan and/or Azerbaijani citizens have emerged over the last few years. For example, in April 1994, at the Istanbul Airport, Turkish police arrested an Azeri, a Turk, and another man for trying to smuggle a substance believed to be uranium onto a flight to Russia.⁵¹ Later that year, again in Turkey, police reportedly confiscated 750 grams of allegedly weapons-grade uranium from an Azerbaijani citizen, Ramiz Shakhgeldiyev,

who claimed that he had bought the uranium in Baku and was trying to sell it for \$60,000.⁵² In early 1996, a Senate Permanent Subcommittee on Investigations staff statement noted that Azerbaijani newspapers reported the official seizure of fissile material in containers marked "oil." The statement did not specify the type of material, its source, or destination.⁵³

August 1996 brought two additional, alleged smuggling cases to light. First, the Russian press reported that a group of scientists were arrested for attempting to smuggle four kilograms of uranium out of Azerbaijan. The Azerbaijani Ministries of Defense and Security both denied the allegations.⁵⁴ Later, in Lvov, Ukraine, a routine inspection of an airplane en route from the Dutch city Maastricht to Baku revealed 229 kilograms of radioactive materials, including cobalt and cesium, in its cargo. The plane was leased by a British company.⁵⁵ Reports conflict over whether the material was claimed at various customs checks or not. ITAR-TASS noted that the crew had a permit to transfer Radium-226, Cesium-137, and Americium-261 to Baku, where another plane would be waiting to take the material to Kyrgyzstan's Bishkek.⁵⁶ In the latter incident, Azerbaijan's role as a potential transshipper becomes apparent. In the other cases, however, the main concern remains an accurate record of what materials exist in Azerbaijan and methods to prevent them from slipping through Azerbaijan's porous borders.

In all three republics, safeguards are clearly a necessary measure to help guard against the threat of diversion of nuclear materials. Any material not under MPC & A should be brought under control immediately. However, safeguards and MPC & A might not be sufficient. In 1995, the Center for Strategic and International Studies Nuclear Black Market Task Force identified Azerbaijan, and possibly Armenia and Georgia, as routes through which smugglers could move material from Russia to Turkey.⁵⁷ Likewise, in March 1996, a U.S. Senate Subcommittee on Investigations report ("Illicit Trafficking of Nuclear Materials") released during Senate hearings, lists Central Asian states, as well as Georgia, Armenia, and Azerbaijan, as having transit routes for nuclear material from Russia. It also alleges that Iran, Iraq, and North Korea have attempted to recruit nuclear specialists from these countries for their programs.⁵⁸ The report notes that the "southern tier" should receive more attention from a counter-proliferation standpoint and that Armenian scientists commonly emigrate

to Iran.⁵⁹ While safeguards will most likely impede a national proliferation threat, the danger in the Caucasus stems more from subnational or "non-state" actors. Yet, safeguards and MPC & A do not provide complete security against motivated, "non-state" actors. Clearly the United States and the international community must continue to cooperate and provide assistance to help bring under and maintain control over all nuclear materials in the region.

EXPORT CONTROLS

One of the first steps to stemming proliferation at the domestic level includes the development of export controls. Adoption of domestic export control policies indicates a desire to curb proliferation, but the success of these policies depends greatly on the ability to implement the policies. At the regional level, all three Caucasian republics are signatory to the June 26, 1992 Minsk Accord on CIS Export Control Coordination. They have also made progress with respect to domestic export control legislation, although considerable work remains.

Georgia

Georgia has made great strides in terms of export controls in the last couple of years. Two 1995 Cabinet of Ministers resolutions and an amendment currently regulate export controls while the draft export control law undergoes parliamentary review. These resolutions determine requirements and the licensing process, carried out by the Ministry of Foreign Economic Relations. Parties must obtain an export contract before applying for a license in order to export controlled goods and services, such as industrial waste and explosive materials. In order to re-export nuclear materials, technology, or equipment, enterprises must procure an export license through the standard procedure, but the Cabinet of Ministers makes the decision regarding the granting of a license, based upon the recommendations of the Ministry of the Environment and the Ministry of Health. In addition, the Cabinet of Ministers and the Ministry of Defense decide whether or not to issue a license for re-exporting arms, military equipment, and raw materials or services related to arms production.⁶⁰

Armenia

After signing the Minsk Accord in 1992, Armenia's desire to create its own export control regime and to take part in regional agreements became evident on February

9, 1993. Armenia participated in an agreement between Belarus, Kazakhstan, Russia, Tajikistan, and Uzbekistan on cooperation in controlling the export of raw materials and dual-use equipment, technology, and services.⁶¹ Shortly thereafter in May 1993, Armenian President Levon Ter-Petrosyan issued a decree to accompany this agreement, which provided for the creation of the Commission on Export Control to work on fulfilling Armenia's international nonproliferation commitments. The Armenian vice premier heads the Commission, which also includes the head of the State Department on National Security and the first deputy head of the Military and Industrial Commission.⁶² Momentum from the February agreement continued into June when Russia drew up national lists of export restrictions to assist Armenia, Ukraine, Belarus, and Kazakhstan in establishing their own export control systems.⁶³ In September 1993, the Armenian government adopted this list. Since then, Armenian government officials have been grappling with the development of an export control action plan, after which they will draft the legislation to implement it.

Useful foreign assistance in this area has emerged. Early in 1997, Ter-Petrosyan met with representatives from the British firm Inchcape Testing Services, who expected to conclude an agreement with Armenia to implement a project to improve customs control.⁶⁴ In July 1997, Armenian Foreign Ministry Press Secretary Arsen Gasparyan announced that Armenia and the United States are implementing a WMD smuggling and proliferation prevention security and aid program that includes export and licensing controls. The dialogue between the two countries has focused on the creation of an effective system of control over WMD, the technologies for producing them, and the export of these technologies.⁶⁵ In addition, the U.S. Department of Commerce is involved in an extensive cooperative export control development and licensing training program with Armenia.

Azerbaijan

In Azerbaijan, export and border controls comprise one of the most important nonproliferation issues, as borders are admittedly fluid. Although Azerbaijan's first attempt to regulate exports appeared in a 1992 decree on customs regulations and border controls, progress beyond this first step has been slow.⁶⁶ Recent developments in Azerbaijan's export control system, however, are encouraging. On June 24, 1997, President Aliyev

issued a decree, "Rules for Regulating External Trade in Azerbaijan," which currently comprises the main piece of export control legislation there. Azerbaijan's parliament, the Milli Medzhlis, also passed a Customs Code, which determines the functions of various customs organizations regarding export controls. However, export controls are developing in an environment that is adapting to meet the demands of a market economy with the goal of trade liberalization. Many restrictions on exports have been lifted, but sensitive goods, including weapons, military technology, explosives, nuclear materials, nuclear technology, radioactive waste, narcotics, and certain chemicals, can be exported only by the order of the Cabinet of Ministers.⁶⁷ Yet, this situation can create a tension between opposing goals of trade liberalization and nonproliferation. Without strong enforcement mechanisms, the efficacy of the Azerbaijani export control system remains questionable.

As with MPC & A, export controls alone cannot provide a "quick fix." Even when combined with safeguards, export controls without proper implementation risk ineffectual outcomes. The success of policy implementation in general varies among the three Caucasian republics. Corruption still plagues government structures to a certain degree in each of the republics as evidenced by 1) the 1996 presidential elections in Armenia; 2) censorship in Azerbaijan; and 3) reports of corruption in the customs department itself in Georgia. The aforementioned U.S. assistance to Armenia, especially the export and licensing control training with the Department of Commerce, is imperative in order to strengthen the institutions responsible for export and border controls in these republics. The situation in all three republics presents a ripe opportunity to cooperate to ensure the success of these domestic policies before a questionable transaction takes place.

PARTICIPATION IN THE INTERNATIONAL NONPROLIFERATION REGIME

At the international level, participation in nonproliferation regimes generally represents a desire to comply with global norms. Figure 1 shows Caucasian participation in a variety of international nonproliferation agreements to date.

Figure 1: Caucasian Participation in Select International Nonproliferation Agreements⁷²

Republic	Treaty on the Non-Proliferation of Nuclear Weapons (NPT)	International Atomic Energy Agency (IAEA)	Comprehensive Test Ban Treaty (CTBT)	Convention on the Physical Protection of Nuclear Material	Chemical Weapons Convention (CWC)	Biological Weapons Convention (BTWC) ⁷³	Geneva Protocol
Armenia	Member since 8/15/93	Member since 9/27/93, safeguards agreement went into force 5/5/94	Member since 10/1/96, but has not ratified	Member since 8/24/93, agreement went into force 9/23/93 ⁷⁴	Signed 3/19/93, deposited ratification 1/27/95	Member since 6/7/94 ⁷⁵	No
Azerbaijan	Member since 9/22/92	No	Member since 7/28/97, but has not ratified ⁷⁶	No	Signed on 1/13/93, but has not ratified	No	No
Georgia	Member since 3/7/94	Member since 3/96	Member since 9/24/96, but has not ratified	No	Signed 1/14/93, deposited ratification on 11/27/95	Member since 3/6/96 ⁷⁷	No

Georgia

Georgia's participation in the international nonproliferation regime has recently improved. At the 1995 NPT Review and Extension Conference, Georgia supported indefinite extension of the NPT.⁶⁸ Although Georgia became a member of the IAEA in March 1996, a year later it had not concluded a safeguards agreement with the IAEA. Finally, at the 41st General Conference in September 1997, Georgia signed a safeguards agreement and the safeguards additional protocol on September 29, 1997.⁶⁹

Armenia

Armenia has demonstrated a commitment to the international community with high participation in many of the multilateral nonproliferation treaties to date. At the 1995 NPT Review and Extension Conference, Armenia supported indefinite and unconditional extension of the NPT.⁷⁰ In addition, Armenia just recently signed the IAEA safeguards additional protocol on September 29, 1997.⁷¹

Azerbaijan

Azerbaijan has not shown tremendous participation in the international nonproliferation regime. While Azerbaijan is party to the NPT, it has not signed a safeguards agreement with the IAEA as required by Article III of the NPT.⁷⁸ Due to constrained resources, the Azerbaijani government cannot afford to send representatives to the various agencies and meetings required for participation in the international nonproliferation regime.⁷⁹ This monetary problem might explain why Azerbaijan has not concluded an IAEA safeguards agreement, one of the first steps to compliance with the NPT.

While at the 1995 NPT Review and Extension Conference, Azerbaijan supported indefinite extension of the NPT, but in a private conversation, Deputy Foreign Minister Araz B. Azimov noted that he did not feel the concerns of Azerbaijan would be met by the conference. He further noted that Azerbaijan had previously proposed a nuclear-weapon-free zone in the Transcaucasus region and that Azerbaijan was seriously concerned about the upcoming restart of the Metsamor Nuclear Power Plant in Armenia.⁸⁰

As with MPC & A and export controls, international organization and treaty membership is necessary, but not sufficient, to combat proliferation effectively, as the Iraqi case demonstrates. However, it is difficult for the newly independent states of the Caucasus to comply with their international obligations without the economic wherewithal and strong domestic institutions necessary to participate in these organizations and implement the national policies that accompany participation. In addition, although joining the international nonproliferation regime imposes verification measures that act as obstacles to subnational actors, it does not preclude the threat of proliferation activities by these subnational actors. As such, foreign aid providers may need to focus greater attention on helping to strengthen domestic institutions, both those related to nonproliferation objectives and others. Another strategy might be to condition aid agreements on stronger participation in international nonproliferation organizations. This approach would apply in particular to agreements in oil sector development in Azerbaijan.

A CAUCASIAN NUCLEAR-WEAPON-FREE ZONE?

Generally, the assumption that participation represents a desire to combat proliferation applies to nuclear-weapon-free zones (NWFZs) as well. However, in the Caucasian case, the majority of initiatives to date have been characterized by regional politics rather than sincere wishes to join forces for nonproliferation objectives.

As noted above, Azerbaijan began suggesting a Caucasian NWFZ as early as 1995, in response to fears about the restart of Metsamor. The most recent Azerbaijani proposal arose in Tashkent in September 1997, during a conference devoted to the creation of a Central Asian NWFZ. At that meeting, Azerbaijan's Minister of Foreign Affairs Hasan Hasanov read a statement in which he accused Armenia of trying to procure a nuclear arsenal covertly under the guise of the Metsamor nuclear power station.⁸¹ Hasanov strongly recommended the creation of a "*zona, svobodnaya ot yadernoy razrabotky dlya kakogo-libo ispolzovaniya*" (a zone free of nuclear activities of any kind)⁸² rather than a nuclear-weapon-free zone. This statement implies that Armenia should give up nuclear power. Unfortunately, closing Metsamor, which produces more than 40 percent of Armenia's electricity, simply is not an option for Armenia at this point. Again, Vartan Oskanyan, First Deputy Foreign Minister

of Armenia, maintains that nuclear power will remain a necessity, even with the conclusion of Caspian oil agreements that benefit Armenia.⁸³ There was no Armenian presence at the conference, but from Yerevan, the Armenian Defense Ministry and Foreign Ministry spokesmen quickly denied and dismissed Hasanov's statement.

Although Georgia also had expressed interest in the creation of a Caucasian NWFZ in spring 1997, the Azerbaijani proposal took the Georgian contingent in Tashkent by surprise. The Georgian government is very concerned that the political element introduced by the nuclear-free language will ruin the chances for a legitimate NWFZ in the region. In addition, Georgia has recently indicated that it would like to resume a nuclear research program by converting the IRT-M research reactor at Mtskheta to run on LEU. If fulfilled, these plans would make the creation of a nuclear-free zone, as proposed by the Azerbaijani government, unacceptable from the Georgian perspective as well.

In the Caucasus, the concept of peaceful uses plays an important role in building consensus for the creation of a NWFZ. As it stands, the current Azerbaijani initiative will not likely materialize into a meaningful regional agreement. The Armenians are unable to give up nuclear power, and the region lacks the mutual confidence and transparency necessary for the creation of a viable NWFZ.

While a NWFZ does include a verification system aimed at providing further obstacles to both national and subnational actors who might be potential proliferators, it also must work in conjunction with other measures such as MPC & A, export controls, and compliance with the international nonproliferation regime. The various degrees of improvements necessary in these three areas, coupled with the dim prospects for a viable NWFZ in the Caucasus, indicate that proliferation remains a challenge in the region.

EVALUATING THE U.S. RESPONSE

With the transition from Communist rule to democracy and from a command to market economy in the three Caucasian republics, problems with domestic policy implementation and with financing nonproliferation activities can be expected. As such, the Caucasus have had to rely on international cooperation and assistance, primarily from the United States, to address some of the proliferation problems they currently face.

Current U.S. policy in the Caucasus deals primarily with conflict resolution, as Deputy Secretary of State Strobe Talbot stated in July 1997.⁸⁴ Indeed, a solution to the Abkhazian conflict would ease the difficulties in taking stock of and subsequently safeguarding the nuclear materials in Sukhumi. A settlement over the Nagorno-Karabakh conflict might increase Azerbaijan's perception of national security, which could result in more constructive regional nonproliferation agreements, such as the development of a NWFZ. The resolution of these conflicts would also free up funds that these countries could then redirect to export control implementation and greater participation in the international nonproliferation regime.

Yet while conflict resolution remains one of the keys to stability in the region and will further nonproliferation goals, U.S. cooperation with respect to MPC & A, export controls, and other nonproliferation objectives, is also necessary. Current work in this regard, such as the U.S. assistance for MPC & A at Mtskheta in Georgia, U.S. involvement in the fate of the HEU there, and the U.S. Department of Commerce export control cooperation in Armenia and Georgia, deserves applause. Additional accomplishments since 1992 include the creation of the International Science and Technology Center (ISTC)⁸⁵ and increased allocations to fund additional security measures to deter nuclear smuggling and theft in the former Soviet Union. In June 1997, funding went to 51 new projects at the ISTC, including four at Armenian institutions and two at Georgian.⁸⁶ The increased funding for nuclear smuggling consisted of \$330 million over the next six years, part of which will go towards increased efforts in Georgia, among other states. U.S. Deputy Secretary of Energy Charles B. Curtis noted that the United States is concerned about terrorists and rogue states becoming well positioned to obtain nuclear materials illegally from the NIS.⁸⁷ The geostrategic location of the Caucasus, coupled with the poor economic situation and proliferation concerns there, make this region especially vulnerable. A Senate Committee on Governmental Affairs Permanent Subcommittee on Investigations report around the same time in early 1996 also noted that U.S. efforts in the non-nuclear southern tier states of Central Asia and the Caucasus need greater attention. It outlines training, technical assistance, and increased surveillance of the criminal and smuggling organizations in the region as areas for improvement.⁸⁸ In response to the report, Senators Nunn, Lugar, and Roth

began to develop new, more comprehensive legislation to deal with the threat.

The United States has also concluded a bilateral agreement with Georgia. In July 1997, Georgian President Eduard Shevardnadze and U.S. Defense Secretary William Cohen signed an agreement on "Cooperation in the Area of Prevention of Proliferation of Weapons of Mass Destruction and Promotion of Defense and Military Relations." According to a Department of Defense News Briefing, the document allows for the extension of the cooperative threat reduction plan and program into Georgia.⁸⁹ Although very general, this agreement provides the basis on which to build a closer relationship to cooperate more effectively against specific proliferation threats in Georgia.

While it is encouraging to witness an increasing U.S. awareness about nonproliferation concerns in the Caucasus, some policies might benefit from reconfiguration. On January 26, 1996, President Clinton signed a "continuing resolution" that provides general funding assistance to the NIS on the condition that Russia cancel its reactor deal to Iran or that the Clinton administration state that the aid is important to U.S. national security.⁹⁰ Under this law, Armenia should receive no less than \$85 million and Georgia no less than \$30 million.⁹¹ While the Congress may see withholding aid to the NIS as a means to pressure Russia with respect to its nuclear and missile trade with Iran, assistance to non-Russian republics should not necessarily depend on Russian behavior. The pressure should fall upon Russia, not the other republics, unless they are involved in similar, questionable trade with Iran.

In addition, Section 907 of the Freedom Support Act hinders the ability of the U.S. government to provide assistance to the Azerbaijani government, although the United States does disperse humanitarian and educational aid to private voluntary organizations in Azerbaijan. In October 1997, a Senate-House panel voted to maintain Section 907 but to adopt non-binding language that states that Congress does not view Section 907 as prohibiting trade development agencies from becoming involved in Azerbaijan (softer language than the Senate originally proposed).⁹² Although the objectives of 907 are understandable, as Armenia and Azerbaijan come closer to an agreement, the United States might consider the possibility of further modifications to 907 to achieve nonproliferation goals.⁹³

CONCLUSIONS

While the three Caucasian republics have made great strides in indicating interest in combating proliferation, they remain relatively weak states in transition, and efforts to enhance MPC & A, strengthen export controls, increase international nonproliferation organization participation, and develop a viable NWFZ are still lacking for the most part. None of these factors can stand alone to address adequately the proliferation challenges in the region, which include unsafeguarded materials, subnational actors, and well-established smuggling routes. While the U.S. response thus far deserves recognition, future policy and assistance options include: 1) assisting the republics with bringing all nuclear materials under safeguards and proper protection; 2) continuing aid and training to help develop and strengthen domestic export controls; 3) encouraging participation in the international nonproliferation regime by linking other aid to participation; and 4) providing advice on the creation of a feasible NWFZ in the region. Without further support, previous U.S. nonproliferation assistance may not achieve the goals originally intended, and the Caucasus will remain a region where proliferation is a danger.

¹ Z. K. Saralidze, Sh. P. Abramidze, N. M. Katamadze, "Consideration on Long-Term Storage of Spent Fuel at the Research Nuclear Reactor of the Institute of Physics of the Georgian Academy of Sciences," March 1997; in Newly Independent States Nuclear Profiles Database, Center for Nonproliferation Studies, Monterey Institute of International Studies, Monterey, CA, 1997.

² Michael R. Gordon, "Russia Thwarting U.S. Bid To Secure A Nuclear Cache," *The New York Times*, January 5, 1997, pp. A1, A4.

³ Moscow-Interfax, January 12, 1997; in FBIS-SOV-97-008 (12 January 1997).

⁴ Saralidze, *et al.*, "Consideration on Long-Term Storage...."

⁵ Moscow NTV, January 20, 1997; in FBIS-TEN-97-002 (20 January 1997).

⁶ "U.S. Pressures Russia To Protect Nuclear Cache," *The Washington Post*, January 8, 1997, p. 21.

⁷ William C. Potter, discussions with author, Center for Nonproliferation Studies, Monterey Institute of International Studies, Monterey, CA, September 1997.

⁸ Saralidze, *et al.*, "Consideration on Long-Term Storage...." Please see the paper itself for a full discussion of spent fuel storage options in Georgia.

⁹ Potter, discussions with author.

¹⁰ Saralidze, *et al.*, "Consideration on Long-Term Storage...."

¹¹ Gordon, "Russia Thwarting U.S. Bid...," and Moscow-Interfax, January 12, 1997; in FBIS-SOV-97-008 (12 January 1997).

¹² A. K. Kruglov, *Kak sozdavalas atomnaya promyshlennost v SSSR*, (Moscow: TSNIITATOMINFORM, 1994), pp. 163-67, 175-76, 192-93; and David Holloway, *Stalin and the Bomb* (New Haven: Yale University Press, 1994), pp. 190-91.

¹³ William Potter, "Less Well-Known Cases of Nuclear Terrorism and Nuclear Diversion in the Former Soviet Union," August 1997; in Newly Independent States Nuclear Profiles Database, Center for Nonproliferation Studies, Monterey Institute of International Studies, Monterey, CA, 1997.

¹⁴ Potter, discussions with author.

¹⁵ *Ibid.*

¹⁶ Georgian government official (name withheld), interview with author, October 15, 1997.

¹⁷ Potter, "Less Well-Known Cases of Nuclear Terrorism and Nuclear Diversion in the Former Soviet Union."

¹⁸ Selina Williams, "Suspicious Fuel Radiation Fears Across Georgia: Soviet past haunts ex-republic after cesium capsules scattered on base sickened soldiers," *Los Angeles Times*, October 11, 1997 (<http://www.latimes.com>).

¹⁹ "One More Georgian Soldier Has Become a Victim of Radiation," *Shvidi Dge*, October 13-14, 1997, pp. 1-2.

²⁰ Reuter, "Suspected Georgian Uranium Hawkers Held in Turkey," November 27, 1993.

²¹ Phil Williams and Paul Woessner, "The Real Threat of Nuclear Smuggling," *Scientific American* 224 (January 1996), pp. 40-44.

²² Saulinius Girmius, "100 Kilos of Radioactive Material Seized in Lithuania," OMRI Daily Digest, February 13, 1996.

²³ Baltic News Service, "Ignalina Nuclear Plant Officials Deny Link Between Lost Fuel Assembly and Weekend's Radioactive Catch," February 12, 1996.

²⁴ John Deutch, "The Threat of Nuclear Diversion," Statement for the Record; in U.S. Congress, Senate, Permanent Subcommittee on Investigations of the Committee on Governmental Affairs, *Global Proliferation of Weapons of Mass Destruction: Hearings Before the Permanent Subcommittee on Investigations of the Committee on Governmental Affairs*, 104th Cong., 2nd sess., March 20, 1996, pp. 302-323.

²⁵ Alfred de Tavares and Sanjay Suri, "Big Radioactive Haul Seen as Pakistan Bound," *India Abroad*, February 23, 1996, p. 27.

²⁶ Josef Hufelschulte, "The Amigos of the Nuclear Mafia," *Focus*, April 6, 1996, pp. 39-42; in FBIS-TAC-96-007 (6 April 1997). Also Boris Lysenko, "Novy sled sovetskogo urana v Germanii: Na etot raz on tyanetsya iz Batumi," *Izvestiya*, April 17, 1996, p. 3.

²⁷ Mikhail Vignanskii, "Yaderniy chemodanchik v Turtsii sprosya ne nashel," *Segodnya*, Online Edition, no. 75, April 12, 1997 (<http://www.eastview.com>).

²⁸ Yerevan Institute of Physics Homepage (<http://www.yerphi.am>)

²⁹ "Armenia: Nuclear Research Facilities," Newly Independent States Nuclear Profiles Database, Center for Nonproliferation Studies, Monterey Institute of International Studies, Monterey, CA, 1997.

³⁰ Interfax, January 8, 1997; in FBIS-TEN-97-001 (8 January 1997).

³¹ In fact, First Deputy Foreign Minister Vartan Oskanyan indicated that construction of a new nuclear power plant in Armenia is inevitable, even if Armenia benefits from Azerbaijani oil. Presentation by First Deputy Foreign Minister of Armenia Vartan Oskanyan, "Oil in the Caucasus: A Stabilizing or Destabilizing Factor?" Berkeley, CA, November 13, 1997.

³² Sergey Bablunyan, "Rossiya perestaet byt yadernoy svalkoy," *Izvestiya*, August 14, 1996, p. 2; "Na Armyanskoy AES nachat profilakticheskiy remont," *Segodnya*, August 15, 1996, p. 7; Interfax, April 12, 1996; and Aragit Electronic News Bulletin, May 5, 1996; in FBIS-TEN-96-006 (5 May 1996).

³³ Noyan Topan (Armenian news service), July 17, 1997; in FBIS-SOV-97-199 (18 July 1997).

³⁴ "Armenia: French and German Aid," *Nucleonics Week*, January 11, 1996, p. 9.

³⁵ Ara Tatevosyan, "Living Dangerously with Nuclear Power in Armenia," *Transition*, May 3, 1996, pp. 23-25, 63.

³⁶ Teresa Sabonis-Chafee, "Preliminary Report on Armenia," prepared for Center for Nonproliferation Studies, Monterey Institute of International Studies.

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³⁸ T. Salakhly, *Zerkalo*, February 10, 1996, p. 18; in FBIS-TAC-96-004 (10 February 1996). In March 1996, the Senate Permanent Subcommittee on Investigations of the Committee on Governmental Affairs released a statement that concluded that republics of the southern tier of the NIS are the most vulnerable to nuclear scientific "braindrain." The statement cites Armenian press reports that scientists are leaving for work in Iran, and that Iranian officials sponsored exchanges with nuclear specialists in Georgia and Kazakhstan on a regular basis. Staff Statement, U.S. Congress, Senate, Permanent Subcommittee on Investigations of the Committee on Governmental Affairs, *Global Proliferation of Weapons of Mass Destruction: Hearings Before the Permanent Subcommittee on Investigations of the Committee on Governmental Affairs*, 104th Cong., 2nd sess., March 22, 1996, pp.125-130.

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⁴³ Lowell Bezains, "Russian Weapons to Armenia via Iran?" OMRI Daily Digest, March 6, 1997.

⁴⁴ Vystupleniye Ministr inostrannykh del Azerbaidzhanskoy Respubliki Ego Prevoskhoditelstva g-na Gasana Gasanova na Mezhdunarodnoi Konferentsii "Tsentralnaya Aziya-zona, svobodnaya ot yadernogo oruzhiya," (speech by Azerbaijani Foreign Minister Hasan Hasanov at the international conference "Central Asia: a Nuclear-Weapon-Free Zone"), Tashkent, September 15-16, 1997.

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⁵² "V Tursii arestovana partiya urana," *Segodnya*, October 21, 1994, p. 1.

⁵³ U.S. Congress, Senate, Permanent Subcommittee on Investigations of the Committee on Governmental Affairs, *Global Proliferation of Weapons of Mass Destruction: Hearings Before the Permanent Subcommittee on Investigations of the Committee on Governmental Affairs*, 104th Cong., 2nd sess., March 22, 1996, pp. 125-130.

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⁵⁶ ITAR-TASS, August 30, 1996; in FBIS-SOV-96-171 (30 August 1996).

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⁵⁸ Evan S. Medeiros, "Senate Hearings Focus Spotlight on 'Real' Threat of Nuclear Smuggling," *Arms Control Today* 26 (March 1996), p. 24.

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⁷⁴ International Atomic Energy Agency Information Circular (Unofficial electronic edition), INF/CIRC/274/Rev.1/Add.6, February 23, 1997, International Atomic Energy Agency Homepage (<http://www.iaea.or.at/worldatom/inf/circs/inf274r1a6.html>).

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⁸² The Treaty of Rarotonga sets a precedent for the creation of a nuclear-free

zone, rather than a nuclear-weapon-free zone. While there are no nuclear power plants in the zone, the language of the treaty nonetheless does not encourage, nor does it prohibit, peaceful uses of nuclear energy. In effect, members can participate in peaceful, non-explosive nuclear activities as long as any parties involved are in compliance with their respective safeguards agreements. *South Pacific Nuclear Free Zone Treaty*, Arms Control and Disarmament Agency Homepage (<http://www.acda.gov/treaties/spnfz.htm>).

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⁸⁴ For more details, please see Deputy Secretary of State Strobe Talbott, "A Farewell to Flashman: American Policy in the Caucasus and Central Asia," presentation at the Johns Hopkins School of Advanced International Studies, Baltimore, MD, July 21, 1997; on U.S. Department of State Homepage (<http://www.state.gov/>).

⁸⁵ The ISTC was established in 1992 in order to avoid the "braindrain" of weapons scientists. The United States, European Union, and Japan fund the ISTC, which provides research grants to weapons scientists for non-weapons work. ISTC employs 12,000 scientists on 236 projects in Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, and Russia. It has received some \$140 million thus far, and a November 1996 U.S. National Research Council report notes that the ISTC is working successfully. "Program to Aid Former Soviet Scientists Said To Be Working," OMRI Daily Digest, November 21, 1996.

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⁹² "Conference Approves \$12.5 Million in Direct Aid to Karabakh, \$87.5 Million to Armenia, Maintains 907," Asbarez Online, October 29, 1997 (<http://www.asbarez.com/aol/news.htm>).

⁹³ Also, the current situation appears ripe for nongovernmental organization (NGO) and international community participation. Among other alternatives, NGOs might provide training and education to help develop a nonproliferation culture among relevant government, nongovernmental, business, and military players in the region. In addition, they might facilitate information sharing. Options for international actors include forging bilateral agreements with individual republics in the Caucasus or facilitating regional agreements. International organizations, like the IAEA, have already contributed useful assistance. The Organization for Security and Cooperation in Europe (OSCE) is doing its part to encourage regional conflict resolution. Yet, in general, greater activity on the part of the global community might result in more positive outcomes.