

COMMENT

THE LINK BETWEEN RUSSIAN ORGANIZED CRIME AND NUCLEAR-WEAPONS PROLIFERATION: FIGHTING CRIME AND ENSURING INTERNATIONAL SECURITY

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1. INTRODUCTION

In December 1991, the Soviet Union, the nation that had opposed the United States in a monumental cold war lasting for more than fifty years, abruptly collapsed. The world looked on in astonishment as the Soviet empire, with its history of communist dictatorship and military production, disintegrated virtually overnight. Hope and optimism that the Cold War had finally ended accompanied the fall of the Soviet regime.¹ People everywhere believed that the risk of global nuclear annihilation existing throughout the Cold War had at last been eliminated.² Never before,

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¹ James E. Goodby, the U.S. Negotiator on Safe and Secure Dismantlement of Nuclear Weapons, noted that "[t]he independence of new states and the end of the confrontation between East and West were hopeful events. The end of the Cold War and the burden it placed on peoples everywhere could only be a welcome historical turning point." James E. Goodby, *Averting Nuclear Chaos: The Tasks Before Us*, 4 DEP'T ST. DISPATCH 704, 704 (1993) (publishing the Address Before the UN Symposium on Security Disarmament and Confidence-Building in the CIS Context given on September 28, 1993).

² To nations on both sides of the ideological divide, the end of the Cold War signalled the dawn of a new era in which cooperation and

however, had a government that possessed 30,000 nuclear warheads and bombs, spread across its vast territory, completely disappeared.³ The ultimate fate of these nuclear weapons is an issue of global concern, for the “end of the Cold War counts only if [the threat of] nuclear war — the almost unimaginable horror that made the Cold War what it was — also is ended.”⁴

In the wake of the Soviet empire's fall, Russia and the other newly independent states⁵ have experienced rapid social, political, and legal disintegration.⁶ To a great degree, Soviet citizens had grown accustomed to more than seventy years of authoritarian Soviet dictatorship. The sudden collapse of communism, therefore, created an enormous power vacuum in Russian society, left to be filled

partnership in peace would replace hostility and suspicion. *See id.*

³ *See* Igor Levin, *Where Have All the Weapons Gone? The Commonwealth of Independent States' Struggle to Stop the Proliferation of Nuclear Weapons and the New Role of the International Atomic Energy Agency*, 24 N.Y.U. J. INT'L L. & POL. 957, 957 (1992); *see also* Goodby, *supra* note 1, at 704 (arguing that an “enormously difficult and threatening challenge [is determining] the fate of some 30,000 nuclear weapons dispersed throughout the former Soviet Union”).

⁴ *The Weapon of Choice: Diplomacy is a Winner as U.S. Gets Kazakhstan's Military-Grade Uranium*, L.A. TIMES, Nov. 25, 1994, at B4 (arguing for continued diplomacy to counter global nuclear threats, the editorial notes that “the collapse of the Soviet Union and of the totalitarian control that Moscow had maintained over its citizens has greatly raised the potential for nuclear smuggling and nuclear blackmail”).

⁵ The Commonwealth of Independent States (“CIS”) consists of 11 of the 15 former Soviet republics: Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. The nations of Estonia, Georgia, Latvia, and Lithuania chose not to join. *See* R. Jeffrey Smith, *Russia to Be Sole Nuclear Republic: Other Ex-Soviet States Agree to Destruction of Strategic Missiles*, WASH. POST, Feb. 6, 1992, at A1.

⁶ The nuclear weapons and infrastructure left over from the Soviet empire

were scattered throughout several new states that were in a complete state of political, economic, and military flux. Hundreds of thousands of people working in this industry [were] affected and [faced] social, professional, and economic upheaval almost beyond comprehension. Such a situation had never before occurred, nor had been seriously contemplated.

Goodby, *supra* note 1, at 704.

by any group that could seize the opportunity.⁷ This void has provided organized criminal syndicates with a chance to achieve unprecedented strength and influence in the former Soviet republics. Organized crime has become one of the most dangerous forces arising from the collapse of the Soviet system.⁸

At the same time, fissile materials,⁹ the raw materials of nuclear weapons, recently have become available for sale on the European black market. In August 1994, German police seized the largest recovery to date of such material in a Munich train station.¹⁰ Although it has not been proven definitively, the materials discovered in Europe most likely originated in Russian nuclear facilities.¹¹

⁷ One such group is Russia's new upper class. Tremendously materialistic and far wealthier than most Russians, who earn an average monthly income of \$100, they have turned former socialist enterprises they managed into private companies. Alternatively, they have simply extended the criminal trading that they had been conducting under the Soviet system. See Dorinda Elliott, *Lifestyles of Russia's Filthy New Rich*, NEWSWEEK, Dec. 19, 1994, at 42, 42.

⁸ See *International Organized Crime and Its Impact on the United States: Hearings Before the Permanent Subcomm. on Investigations of the Senate Comm. on Government Affairs* (May 25, 1994) (statement of Sen. Nunn), available in LEXIS, News Library, Curnws File [hereinafter Nunn Statement]. Organized crime may ultimately pose a threat to peace not only in Russia, but in other regions of the world as well. Thus, it is becoming both a domestic law enforcement nightmare and a potential threat to international security. See *id.* For example, Russian President Boris Yeltsin noted in 1994 that "organized crime is trying to take [Russia] by the throat." *Id.*

⁹ This Comment uses the phrase "fissile material" to refer to weapons-grade plutonium or uranium (more specifically highly enriched uranium or "HEU"). These fissile materials are some of the materials necessary to build a nuclear weapon. See Seymour M. Hersh, *The Wild East*, ATLANTIC MONTHLY, June 1994, at 61, 68.

¹⁰ Twelve ounces of plutonium-239 were seized in Munich on August 10, 1994, which is almost enough to make a nuclear bomb. See Tom Masland, *For Sale*, NEWSWEEK, Aug. 29, 1994, at 30, 30. Moreover, that amount of fissile material could have been used for other harmful purposes. "The Munich seizure contained more than enough plutonium to poison all of a city's water supply, or to make a devastating 'dirty bomb' that would disperse radioactive particles in the air." See *id.*

¹¹ In August 1994, *Newsweek* reported that there "was little doubt that the deadliest substances known to man have leaked from cracks in the former Soviet Union's massive nuclear infrastructure." Russian officials, however, vehemently deny this assertion. *Id.*; see also *infra* notes 152-53 and accompanying text (noting the discovery of the first

There is strong evidence that organized crime in the former Soviet Union is seeking access to the nuclear stockpiles because of their potential for enormous profit.¹² This Comment analyzes the potential nuclear threat from organized criminal groups in Russia and the link between organized crime and Russian nuclear-weapons security.

Section 2 discusses the recent discoveries of fissile material on the European black market, widely believed to have come from former Soviet nuclear facilities. Section 3 investigates the exponential growth of organized crime in Russia since the collapse of the Soviet Union. Section 4 analyzes the link between the recent appearance of fissile material for sale in Europe and the massive rise in power of organized criminal groups in Russia. Section 5 discusses the obstacles in combatting the related problems of nuclear proliferation and Russian organized crime. This section also suggests possible cooperative actions that can be taken to help Russia control organized crime and stem its radioactive flow.

2. FISSILE MATERIAL APPEARS IN EUROPE

2.1. *Black Market Nuclear Dealings: A Very Real Threat*

There are two heavy metal elements suitable for making a nuclear fission explosive device. The first, uranium, occurs naturally in ore; the second, plutonium-239 ("plutonium"), does not occur in nature and must be created from uranium.¹³ Police in Europe recently have intercepted

hard evidence that Russian organized criminal groups have attempted to smuggle nuclear material from former Soviet facilities).

¹² See Hersh, *supra* note 9, at 68; see also *MacNeil/Lehrer News-Hour: Deadly Market; Breaking the Cycle* (PBS television broadcast, Aug. 17, 1994) (transcript #5034), available in LEXIS, News Library, Script File [hereinafter *MacNeil/Lehrer*] (noting that "the sheer proliferation of nuclear material remaining in the former Soviet Union and the seemingly increasing amounts of it appearing for sale is creating a new post-Cold War threat for Western governments, a problem of the modern age to which as yet there is no obvious solution").

¹³ See John M. Deutch, *The New Nuclear Threat*, FOREIGN AFF., Fall 1992, at 120, 121. A nation can obtain fissile nuclear material either by enriching uranium-235 by an isotope separation technique or by

both of these elements, uncovering ninety instances of nuclear smuggling in Germany in the first half of 1994 alone.¹⁴

Black market nuclear dealings in high-grade material may be the most significant security threat to the West in the post-Cold War era, but until August 1994, Western nations considered them a purely hypothetical risk.¹⁵ For several years prior to 1994, police in Europe reported a string of nuclear smuggling cases, some cases involving large amounts of low-level radioactive material. It was only the recent seizure in Germany, in which police intercepted high-grade material, however, that confirmed some Western predictions that fissile material sufficient to build a nuclear weapon could become available on the black market.¹⁶

Since the 1994 German seizure, the threat of global nuclear proliferation has displaced the fear of superpower nuclear conflict on the international agenda.¹⁷ There are numerous reasons why the risk of spreading nuclear capability poses a major, and relatively new, threat to world security.¹⁸

producing plutonium-239 in a nuclear reactor, followed by chemical separation. *Id.* at 122.

¹⁴ See *90 Instance of Nuke Smuggling in Germany in First Half of 1994*, AGENCE FRANCE PRESSE, Sept. 14, 1994, available in LEXIS, News Library, Wires File [hereinafter *Nuke Smuggling*]. In addition, since the middle of 1994, authorities have announced five major cases of nuclear smuggling from Russia. See Robert L. Hotz, *Cold War Foes Forge Warm Ties*, L.A. TIMES, June 23, 1995, at A1, A30.

¹⁵ See Masland, *supra* note 10, at 30.

¹⁶ Until the summer of 1994,

nearly all of a fast-growing number of nuclear smuggling cases involved low-grade materials passed off by con artists as the real thing. But a string of new cases has given credence to a nightmare scenario — that some of the hundreds of tons of plutonium in Russia could fall into the hands of mobsters, [or] terrorists.

Id. In July 1995, for example, a German judge convicted two Spaniards and a Colombian of smuggling from Moscow the plutonium discovered last August in Munich. See Mary W. Walsh, *German Court Convicts 3 for Smuggling Plutonium*, L.A. TIMES, July 18, 1995, at A2.

¹⁷ Deutch, *supra* note 13, at 120.

¹⁸ First, it is feared that as the number of nuclear powers increases, the chances that nuclear weapons may be used will grow concomitantly. See Adam Treiger, *Plugging the Russian Brain Drain: Criminalizing*

Iraq's covert nuclear build-up, which eventually led to the Persian Gulf War, provides a poignant example of the threat posed by nuclear proliferation. As the world now knows, Iraq mounted a massive covert program to acquire nuclear weapons and other tools of mass destruction.¹⁹ Leaders outside that country would have never known how close Iraq was to having a nuclear weapon had Saddam Hussein not attacked Kuwait.²⁰ Iraq had violated nuclear non-proliferation treaties with impunity and stood poised to threaten severely international security.²¹

The collapse of the Soviet Union adds a new element to the proliferation problem. The empire's fall removes the influence of a strong central government that was relatively responsible in its control of nuclear weapons and technology.²² The recent appearance of nuclear materials for sale in Europe, believed to have originated from Russian facilities, dramatically illustrates the dangerous consequences of this change.²³

Nuclear-Expertise Proliferation, 82 GEO. L.J. 237, 239, n.11 (1993) (quoting Leonard S. Spector, *A Historical and Technical Introduction to the Proliferation of Nuclear Weapons*, CARNEGIE ENDOWMENT FOR INT'L PEACE, June 1992, at 3-4). Second, the use of nuclear weapons by a regional power in a localized conflict could dramatically increase the human costs of such hostilities. See *id.* Third, the acquisition of nuclear arms by unstable regimes has raised the prospect that inadequate command and control systems might lead to the unauthorized use of nuclear weapons during a crisis, or that other "non-state actors," such as terrorist groups, might gain control of nuclear weapons, thereby opening new avenues for nuclear mayhem. *Id.*

¹⁹ See Deutch, *supra* note 13, at 120.

²⁰ Governments and international organizations for the most part were ignorant of Iraqi intentions and capabilities leading up to the Persian Gulf War. See *id.*

²¹ See Levin, *supra* note 3, at 977; see also Richard L. Williamson, Jr., *Law and the H-Bomb: Strengthening the Nonproliferation Regime to Impede Advanced Proliferation*, 28 CORNELL INT'L L.J. 71, 82-83 (1995) (noting that Iraq's covert acquisition of extensive nuclear weapons technology, while publicly appearing to be in compliance with the international non-proliferation treaties, revealed weaknesses in the current non-proliferation regime). For a discussion of international non-proliferation treaties, see *infra* section 5.2.

²² Deutch, *supra* note 13, at 120.

²³ For example, the recent arrest of three men in New York for attempting to sell several tons of zirconium, a metal used in nuclear processing, demonstrates how the collapse of the Soviet Union has made it easier to obtain nuclear material throughout the world. Federal

2.2. *The Origin of Black Market Fissile Material*

On August 18, 1994, William Potter, the Director of the Monterey Institute for International Studies, warned that “the West has been extraordinarily fortunate to date to have avoided a flood of nuclear contraband from the former Soviet Union, but I think that our luck has just run out.”²⁴ In 1994, from May through August, German police, on four separate occasions, seized radioactive samples that they believed originated in Russian nuclear facilities.²⁵ These major seizures were not the first of their kind. Early in 1993, for example, the Western media reported a fear that the “now steady flow of non-sensitive material is . . . greasing the wheels for the real thing — the hundreds of tons of weapons-grade uranium and plutonium stored around the former Soviet Union.”²⁶ The most recent seizures of fissile material lend a great degree of credence to the view, long-held by many Western observers, that the possibility of a black market for fissile material is frighten-

agents uncovered the black market operation by posing as representatives of the Iraqi government and offering to buy the material. The zirconium originated in a Ukrainian nuclear plant near Kiev and customs agents said that its transfer may have been aided by Russian organized crime. See John J. Goldman & William C. Rempel, *U.S. Seizes 7 Tons of Vital Reactor Metal*, L.A. TIMES, June 9, 1995, at A1, A33; Michael Blood, *Agents Posing as Iraqis Buy 8 Tons of Nuclear-Related Metal*, AP WORLDSTREAM, June 8, 1995, available in LEXIS, News Library, Curnws File. See *infra* notes 152-53 and accompanying text for other examples.

²⁴ Dan Charles, *Analysts Search for Origin of Smuggled Plutonium*, (National Public Radio, morning edition, Aug. 18, 1994) (transcript # 1414-13), available in LEXIS, News Library, Script File.

²⁵ See *Danger on the Black Market*, ROCKY MTN. NEWS, Aug. 28, 1994, at 87A, available in LEXIS, News Library, Papers File. “In one case, the bearer of the material was arrested in Munich after flying non-stop from Moscow.” *Id.*

²⁶ Claire Shipman, *Nuclear Entrepreneurs’ Proliferate in Former USSR* (CNN television broadcast, Feb. 18, 1993) (transcript # 280-5), available in LEXIS, News Library, Script File. There were 241 instances of nuclear trafficking recorded by the German police in 1993, as compared with 158 instances in 1992 and 41 occurrences in 1991. See *Nuke Smuggling*, *supra* note 14.

ingly real.²⁷

There is no conclusive evidence to date that the nuclear material seized in Europe has come from Russian stockpiles. Indeed, some Russian officials adamantly insist that "[n]ot a single gram of plutonium-239 has gone missing from storage in Russia."²⁸ Western experts, however, flatly refute this assertion.²⁹ They argue that the Russians have absolutely no accurate measure of the actual quantity of unaccounted for material.³⁰ Western analysts note that the Russian government has no way of knowing whether any of its nuclear material is missing, largely because of its ignorance regarding how much fissile material the former Soviet Union actually produced.³¹

In an attempt to ascertain more precisely the seriousness of the smuggling problem, Western nuclear laboratories have run analyses of fissile materials which help to identify the origins of those materials. These tests are useful because they narrow considerably the search for the

²⁷ There are, however, some skeptics who deny the existence of a nuclear black market altogether. For example, Andrew Duncan, a nuclear-weapons policy analyst at the International Institute for Strategic Studies in London, sees no indication of an underground network placing orders in Russia. On August 17, 1994, Duncan stated that "[t]he sellers seem pretty desperate, with samples of mostly unusable quantities," and thus "[t]here is no evidence of a black market for fissile material." See Thomas Lucey, *Nuke Experts Doubt Russian Plutonium Black Market Exists*, DEFENSE NEWS, Aug. 22, 1994, at 8, available in LEXIS, News Library, Papers File.

²⁸ See Masland, *supra* note 10, at 31. Some Russians have even suggested that "the West invented the leaks as part of a plot to take over Russia's nuclear program." *Id.*; but see *infra* notes 152-53 and accompanying text (indicating that U.S. journalists recently discovered the first hard evidence linking Russian mafia groups to the theft of nuclear material).

²⁹ See Masland, *supra* note 10, at 31-32 (warning that the Russians do not know how much nuclear material they currently possess); MacNeil/Lehrer, *supra* note 12 (noting that the Russians have no knowledge of how many nuclear weapons the former Soviet Union produced, thus accounting for nuclear material that might have been lost or stolen is practically impossible).

³⁰ See Masland, *supra* note 10, at 31; discussion *infra* section 5.3.

³¹ See Charles, *supra* note 24. William Potter notes that on a recent trip to Minsk he was told by a "senior person in the nuclear industry" that he could not "say precisely how much weapons-grade material they had [in Minsk] because of their shoddy accounting practices." *Id.*

type of facility from which the nuclear material could have originated.³² This process can be used to distinguish nuclear materials from one another by identifying each substance's unique "fingerprint."³³ All initial results of these analyses point to the former Soviet republics as the source of the smuggled fissile materials.³⁴

3. THE GROWTH OF RUSSIAN ORGANIZED CRIME SINCE THE FALL OF THE SOVIET UNION

3.1. *Organized Crime Replaces Communist Dictatorship*

In the midst of the growing nuclear black market, a rising criminal movement in the former Soviet Union adds a potent element of danger to the already volatile atmosphere in Eastern Europe. Since the collapse of the Soviet Union, Russian criminal groups have enjoyed an unparalleled rise in strength and power.³⁵ Entrepreneurial criminal groups have seized upon an unprecedented opportunity to command influence and have filled the void left by more than seventy years of communist dictatorship.³⁶ For

³² The German and U.S. nuclear weapons laboratories are conducting isotopic analyses of the fissile material, looking for "trace isotopes that would indicate . . . that the material came from a reactor that has been eradicated for a period of time, [or] that has been reprocessed." *MacNeil/Lehrer, supra* note 12. The material contains signatures that identify the type of application that produced the material, thus narrowing down considerably the search for the facility in which it was made. *See id.* These signatures are called "fingerprints" in the trade. *See id.*

³³ *Id.*

³⁴ *See id.*

³⁵ *See* Brian Duffy & Jeff Trimble, *The Wise Guys of Russia*, U.S. NEWS & WORLD REP., Mar. 7, 1994, at 41, 43 (indicating that more than 100 criminal syndicates now play a part in nearly every commercial activity in Russia); Michael Elliott et al., *Global Mafia*, NEWSWEEK, Dec. 13, 1993, at 22, 23 (noting that the collapse of communism has led to the rebirth of the profit motive and has created fertile ground for organized criminal syndicates); Hersh, *supra* note 9, at 66-86 (discussing the exponential growth of organized crime in Russia since 1991 and the threat that it poses to both personal safety and international security).

³⁶ *See* Nunn Statement, *supra* note 8 ("While crime, and even organized criminal activity, is nothing new in Russian history, the

several decades during the Cold War, Western nations feared the threat posed by the nations of the Warsaw Pact. Today, these Western nations are quick to argue that the world is an even more turbulent and uncertain place than during the Cold War.³⁷ Russian organized crime has taken over the dominant role formerly filled by the Soviet Communist Party, possibly posing the greatest current threat to international security.

In the wake of communism's demise, Russia and the other newly independent states have experienced rapid social, economic, and political disintegration. When communism collapsed and the borders of former communist countries opened, the criminals were the first to appreciate that in the new world they very quickly could become richer than they had ever imagined.³⁸ Organized crime has since become a problem of major significance in every aspect of Russian society.³⁹ In a report delivered to President

demise of [c]ommunism has created an opportunity for organized crime groups to achieve unprecedented strength and influence in Russian society. Unfortunately, it is an opportunity of which they appear to be taking full advantage.”); see also *Mob Rule in Russia*, BOSTON GLOBE, June 11, 1995, at 86 (“A civil society barely emancipated from the totalitarian past finds itself subjected to a new master.”).

³⁷ International organized crime now frightens many policymakers worldwide. Referring to such crime, Tim Wirth, the Undersecretary of State for Global Affairs remarked, “We have a problem that is accelerating far beyond the ability of our current institutions.” Elliott et al., *supra* note 35, at 22. Moreover, Senator John Kerry believes that “[o]rganized crime” is “the new communism, the new monolithic threat.” *Id.*

³⁸ See *id.* at 23-30.

³⁹ In November 1993, the Department of Energy's Office of Threat Assessment conducted an analysis of the so-called Russian mafia. The report cites “evidence showing that in 1991 about 4,000 organized-crime groups or gangs were operating inside Russia.” Hersh, *supra* note 9, at 66. The study included these findings:

- * One quarter of the organized-crime groups are believed to have ties to similar criminal groups abroad or in the former Soviet republics. . . .

- * Forty percent of private businesses and 60 percent of state-owned companies have been corrupted by organized crime.

- * The Russian mafia may own half the nation's commercial banks and 50 to 80 percent of the shops, hotels, warehouses, depots, and service industries in Moscow. A substantial portion of the commercial district in St. Petersburg is similarly in the control of criminal elements, with businessmen being forced to

Yeltsin in February 1994, Russia's Analytical Center for Social and Economic Policies concluded that the situation of organized crime in Russia differs from that in the West.⁴⁰ The report states that in Western Europe and the United States, "organized crime controls only 'criminal' activities like prostitution, drugs[,] and gambling. In [Russia], it controls *all* types of activities."⁴¹

A number of social and political trends have combined to form a new space for organized crime in Eastern Europe, the most significant of which has been the collapse of communism.⁴² By replacing communism as the most dangerous force emanating from the former Soviet Union,⁴³ organized criminal networks have filled the void left by the authoritarian government. To many Russians, the rise of the mafia⁴⁴ is simply "a logical outgrowth of the Soviet past."⁴⁵

pay 15 percent of their income for protection. . . .

* Organized crime now uses high-tech communications equipment, including fax machines, shortwave radios, and cellular phones, far more sophisticated than anything used by Russian law-enforcement officials.

Id. at 66-68.

⁴⁰ See Duffy & Trimble, *supra* note 35, at 45.

⁴¹ *Id.*

⁴² See Elliott et al., *supra* note 35, at 22-23 (noting that, in addition to the fall of communism, the development of computer and communications technology and the declining significance of national borders have combined to form an open space for organized crime).

⁴³ Richard Norton-Taylor, *Still All to Play for in the Spying Game*, GUARDIAN (Manchester), Nov. 23, 1994, at 8 ("For the Warsaw Pact and communism, now read the proliferation of weapons of mass destruction and organised crime."). For further analysis of the link between the proliferation of nuclear weapons and Russian organized crime, see discussion *infra* section 4.

⁴⁴ The *organizatsiya*, or Russian organized criminal groups, have been deemed the Russian "mafia." Russian police attribute most of their nation's murder and violence to the mafia. See Duffy & Trimble, *supra* note 35, at 43 (quoting Gennadi Chebotarev, the deputy head of the Russian Interior Ministry's organized-crime section as saying, "We have a large number of criminals, a massive number. . . . We can judge that the number is large by the number of shootings that take place, by the number of killings that take place.").

⁴⁵ *Id.* at 45. Soviet secret police used mafia-like methods, such as reporting to the *krestnii otet*, or "godfather." *Id.* In Soviet times, however, "the godfather . . . was the general secretary of the Commu-

3.2. Lack of Legal Infrastructure

An additional factor facilitating the growth of organized crime is the atmosphere of lawlessness that pervades post-communist Russian society.⁴⁶ When the Communists ruled the Soviet Union, “[l]aws’ were backed by a state that was willing to use terror to enforce them.”⁴⁷ The collapse of the communist regime undermined the power of such laws.⁴⁸ In Russia today, the absence of regulation in many areas of social conduct and the lack of force behind the laws that do exist means that much activity that is criminal in any real sense, including organized crime, is technically legal.⁴⁹ The weak Russian legal system thus greatly hinders the ability of the Russian government to apprehend and punish criminal offenders.⁵⁰

nist Party.” *Id.* In addition, the communist leaders used organizations such as the KGB, whose strongarm tactics resembled those of organized crime, “to help [them] move [their] massive wealth within the Soviet Union and abroad. In this respect . . . Russians and citizens of the former Soviet republics have been accustomed to mafia[-]like behavior and mafia[-]like groups for decades.” *Id.* at 45-46.

⁴⁶ See, e.g., Elliott et al., *supra* note 35, at 27-30 (discussing the lawless landscape of post-communist Russia).

⁴⁷ *Id.* at 28.

⁴⁸ See *id.*

⁴⁹ See Hersh, *supra* note 9, at 79 (“[A]ctivities that are considered unlawful according to Western norms, such as organized crime, are not specifically prohibited.”) (citation omitted); Sergei Komarov, the Deputy Chief of the anticorruption division of the St. Petersburg police noted, “I can call [the criminals] in and tell them to stop doing it . . . but all I can do is wag my finger.” *Id.*; see also Elliott et al., *supra*, note 35, at 27-30 (noting that there are no official laws against moneylaundering, fraud, or organized crime).

⁵⁰ Former Soviet Foreign Minister Edward Shevardnadze emphasized that Russia needs “to create as soon as possible a moral and legal environment in which anyone guilty of grave crimes against humanity . . . [, including] acts of terrorism or torture . . . [, cannot] escape punishment and [will] not be absolved from personal responsibility.” John N. Moore & Robert F. Turner, *The Principles of Cooperation and Good Faith Fulfillment of International Obligations*, in INTERNATIONAL LAW AND INTERNATIONAL SECURITY 275, 283 (Paul B. Stephan, III & Boris M. Klimentko eds., 1991).

4. THE LINK BETWEEN RUSSIAN ORGANIZED CRIME AND NUCLEAR-WEAPONS PROLIFERATION IN EUROPE

4.1. *Organized Crime Emerges from the Ruins of a Nuclear Superpower*

As noted above, Russian organized crime syndicates are playing an ever larger role in controlling all aspects of Russian society.⁵¹ While this situation leads to chaos and fear within Russia, the potentially devastating influence that these groups can exert over the entire global arena stands as perhaps the greatest threat.⁵² One feature distinguishes the danger of Russian organized crime from that of any other organized criminal syndicate — the fact that Russian organized crime is arising from the fertile soil of a nuclear superpower.⁵³ The economic and political bedlam in Russia, combined with the nation's inheritance of a nuclear arsenal, marks Russia as a paradise for so-called "nuclear entrepreneurs."⁵⁴

As predicted by some Western observers,⁵⁵ Russian

⁵¹ See discussion *supra* section 3.1.

⁵² The Russian mafia is "hijacking the state" and poses a serious threat to the government's control over its nuclear weapons. Hersh, *supra* note 9, at 62. As a result, the enormous rise of Russian organized crime is becoming a problem of international security, not just personal safety. See *id.*

⁵³ See Nunn Statement, *supra* note 8. Senator Nunn warned that no nuclear nation has ever come so close to internal chaos. See *id.* Yet the world today faces "the prospect of the government of a nuclear state fighting for its very survival against the forces of organized crime." *Id.* Another U.S. official stated the matter differently, declaring that the world now faces "a 1930s situation in Chicago, except that Al Capone has access to nuclear weapons." Hersh, *supra* note 9, at 79.

⁵⁴ Shipman, *supra* note 26. Even today, Russia faces a desperate situation in which the economy is "falling apart" and Russians are "under pressure to act for very crude economic interests." *Id.* This situation creates an environment in which anyone will sell anything for the right price. See *id.*

⁵⁵ One commentator warned as early as 1976 that too little attention had been given to the dramatic increase in organized criminal violence and the increased "potential for such violence to become nuclear." Jerry P. Coleman, *International Safeguards Against Non-Government Nuclear Theft: A Study of Legal Inadequacies*, 10 INT'L LAW 493, 494 (1976) (emphasis omitted). Coleman added that any "future nuclear thefts would increase the chances and motives for . . .

organized crime networks have begun establishing their presence in the black market for nuclear materials and technology. For an organized crime operative who functions without fear of apprehension,⁵⁶ it is easy to see how "the lucrative nature of a nuclear theft may well outweigh the [potential] risks and sanctions."⁵⁷ The "Russian atomic mafia"⁵⁸ thus is becoming increasingly visible and dangerous.

Russian organized criminal networks have targeted former Soviet nuclear materials for theft and sale abroad.⁵⁹ Nuclear entrepreneurs take advantage of newly opened and poorly policed borders, the possibility of tremendous profits, and Russia's lack of accurate accounting and inventory procedures.⁶⁰ This "link between organized crime and Russian nuclear-weapons security"⁶¹ quickly is becoming a problem of both national and international proportions. For this reason, any discussion of nuclear proliferation of necessity must include the risk of organized criminal proliferation.⁶²

a [nuclear black] market; once so formed, a black market would then further increase the potential for nuclear theft." *Id.* at 495 n.4.

⁵⁶ See discussion *supra* section 3.2.

⁵⁷ Coleman, *supra* note 55, at 495. It has been estimated that a kilogram of plutonium can sell for as much as \$500,000 on the open market. See *Another Nuclear Threat*, SALT LAKE TRIB., Aug. 22, 1994, at A8, available in LEXIS, News Library, Papers File. With such high market value, plutonium is quickly becoming a hot commodity in the international criminal underworld. See *id.*

⁵⁸ Bernard Gray et al., *From Russia with Love: Nuclear Smuggling Has Put the Security of Weapons Material Back in the Political Spotlight*, FIN. TIMES, Aug. 20-21, 1994, at 8.

⁵⁹ See Duffy & Trimble, *supra* note 35, at 46.

⁶⁰ See Shipman, *supra* note 26 (noting that smugglers do not face rigid customs controls as during Soviet times; both internal and external borders are now porous); see also Hersh, *supra* note 9, at 68 (discussing organized crime's potential for huge profit in the nuclear stockpiles and noting that the Russian government cannot account for all of its bombs and weapons-grade uranium and plutonium); Masland, *supra* note 10, at 32 (warning that managers at the Institute of Power Engineering Problems in Belarus privately acknowledge that they cannot measure the precise amount of highly enriched uranium in their facility, largely because of inaccurate accounting procedures).

⁶¹ Hersh, *supra* note 9, at 69.

⁶² See *id.* at 66.

4.2. *The U.S. Department of Energy Mafia Study*

Western officials and analysts have begun heeding the early warnings that organized crime may threaten nuclear security in the former Soviet republics.⁶³ The U.S. Department of Energy's ("DOE") November 1993 mafia study ("DOE Mafia Study") is a prominent illustration of Western nations' increasing concern with organized crime's access to nuclear weapons.⁶⁴ The DOE Mafia Study represents "the first step in what has become a large effort to collect intelligence on the potential nuclear threat from organized crime in Russia and the former Soviet republics."⁶⁵ The report notes that investigators of organized crime confirmed "the existence of a latent, potential nuclear smuggling infrastructure"⁶⁶ in the former Soviet Union.

In addition to the concerns raised in the DOE Mafia Study, uneasiness regarding the threat posed by Russian organized crime is evident at the U.S. government's top nuclear non-proliferation intelligence unit. Analysts in this unit, the DOE's Z Division at the Livermore Laboratory in California, are currently conducting an extensive review of the potential nuclear threat from organized crime groups in Russia.⁶⁷ Moreover, the press recently has published several accounts of attempted black market purchases by undercover reporters.⁶⁸ These reports, when viewed in

⁶³ See generally *id.* at 66-82 (indicating that concern over the threat of organized crime in Russia has spread to U.S. nuclear non-proliferation intelligence units, such as the Department of Energy's Z Division at the Lawrence Livermore Laboratory).

⁶⁴ See *supra* note 39 and accompanying text.

⁶⁵ Hersh, *supra* note 9, at 66.

⁶⁶ *Id.* at 75 (quoting the DOE Mafia Study). The DOE Mafia Study quotes an Eastern European expert on terrorism who stated that, in addition to dealing in narcotics, the leaders of the Russian and Italian mafia have agreed to create "plans to smuggle nuclear weapons-grade material out of Russia along routes used in [the] drug trade." *Id.* (quoting the DOE Mafia Study). The report warns that "[g]iven a high enough profit motive, the Russian mafia may conclude . . . that the health and law enforcement risks are worth running." *Id.*

⁶⁷ See *id.* at 74.

⁶⁸ In 1993, for example, Kirill Belyaninov, an "investigative reporter for *Literaturnaya Gazeta*, Moscow's most respected weekly newsmagazine, went underground with two colleagues inside Russia." *Id.*

conjunction with the Z Division's on-going investigations, lend credence to the DOE's concerns that Russian criminal networks already possess fissile material.

4.3. *The Brain Drain Aspect*

Russian "brain drain"⁶⁹ further complicates the dangers posed by Russian organized crime and nuclear proliferation. Before the Soviet Union collapsed, the Soviet empire's "scientists, engineers, and technicians developed and maintained the largest nuclear weapons arsenal in the world."⁷⁰ Since communism's fall, however, these once pampered and privileged intellectuals have experienced a substantial loss of economic and social status.⁷¹ Positions which were previously some of the most highly valued jobs in the Soviet Union now either offer minimal compensation or do not exist at all. Furthermore, the intellectual challenges that also made these jobs appealing are no longer

Months of dealings paid off when he and his colleagues were offered the warhead from a Soviet SS-20 nuclear missile for \$70,000. *Id.*

Additionally, in the book *Critical Mass*, authors William Burrows and Robert Windrem write about "an incident in 1991 in which . . . a nuclear weapons analyst affiliated with Greenpeace, nearly obtained a tactical nuclear warhead from a Soviet senior lieutenant stationed in Germany." Nunn Statement, *supra* note 8. The asking price for the warhead was \$320,000. *Id.* If Greenpeace can come so close to obtaining a nuclear warhead, organized crime, which controls much of the Russian economy, is likely to be able to do the same. *See id.*

⁶⁹ "Brain drain' describes the potential problem of Russian nuclear scientists emigrating to certain non-nuclear nations for the purpose of aiding in the development of a nuclear weapons program." Treiger, *supra* note 18, at 238-39 (citations omitted). In this Comment, the term also describes the situation in which Russian nuclear scientists sell their knowledge or expertise in the nuclear field to any bidder, including organized criminal syndicates.

⁷⁰ *Id.* at 237 (citation omitted).

⁷¹ At Minatom, a giant Russian military installation, the approximately one million employees were "[o]nce pampered with comfortable housing and abundant food" and thus were known as the "chocolate eaters." Masland, *supra* note 10, at 31-32. In the last four years, Minatom employees lost "their perks and most of their pay. [Russia's] 3,000 top atomic scientists are paid less than Moscow bus drivers — when they're paid at all." *Id.* at 32. Technicians and service workers also experienced declining standards of living. *Id.*

present.⁷²

Organized crime is linked closely to the brain drain aspect of nuclear proliferation.⁷³ "Mass unemployment" is now rampant "among a highly educated and technically proficient part of the population" in Russia.⁷⁴ Soviet nuclear scientists who had grown accustomed to their favored lifestyle have become disillusioned and angered by their sudden fall. This disenchantment provides an attractive opportunity for criminal syndicates that seek to smuggle fissile materials. Nuclear "[s]mugglers obviously need connections inside the nuclear industry, and workers disgruntled by a loss of prestige and pay are prime targets."⁷⁵ In light of the sense of frustration and deprivation that pervades Russia's nuclear community, organized crime enjoys an enormous economic influence over these poorly paid workers. The syndicates have the potential to attract desperate scientists and technicians with the lure of renewed prosperity in exchange for nuclear expertise and materials.

⁷² See Treiger, *supra* note 18, at 238. Many scientists have lost their jobs altogether. "Over the last two years the program[] for the development of new-generation weapons [largely] has been axed, . . . testing grounds have been closed down[,] and production in four of the 10 'nuclear' cities has been suspended." *Id.* Currently, these once high-level physicists are designing "new kinds of iceboxes and producing baby buggies 'under [the Russian] conversion program[].'" *Id.* (quoting *Worries Expressed Over Export of Nuclear Expertise*, (BBC Summary of World Broadcasts, Jan. 15, 1992), available in LEXIS, News Library, Arcnws File) (citations omitted).

⁷³ Some in the Russian scientific community, however, refute the link between the brain drain problem and organized crime, finding such fear to be based on "irrational assumptions and stereotypes." Sergei Kapitza, *Debunking the Latest Red Scare*, HARPER'S, July 1992, at 15. Sergei Kapitza, a physics professor at the Academy of Sciences in Moscow, argues that despite the current situation, singling out Russian nuclear scientists from their Western counterparts as potential sources of nuclear proliferation is "an expression of distrust if not a direct insult." *Id.* at 15-16. Kapitza is doubtful that "people of creativity and imagination [would] . . . find satisfaction in serving an outlaw." *Id.* at 16. He insists that the issue turns on personal responsibility and morality. See *id.* Kapitza concludes that "[p]erhaps morals do recede when arms and money are in the forefront. Somehow, though, I have greater trust in my colleagues, and in humankind." *Id.*

⁷⁴ See Goodby, *supra* note 1, at 704.

⁷⁵ Shipman, *supra* note 26.

The Congressional Office of Technology Assessment ("OTA") currently is studying Russian nuclear security and brain drain under a 1993 mandate to investigate problems of nuclear proliferation in the former Soviet Union.⁷⁶ The OTA's initial findings have caused great concern among Western analysts. The findings confirm suggestions that the dispersal of Russian nuclear scientists is no longer speculation⁷⁷ and has become a genuine and tangible threat to international security.

5. OBSTACLES IN COMBATting NUCLEAR PROLIFERATION BY ORGANIZED CRIME AND POSSIBLE SOLUTIONS

At first glance, the quickly growing problem of Russian organized crime appears to be a domestic issue. Upon closer examination, however, it is evident that this alarming Russian criminal movement poses an enormous threat to the security of all nations. The United States recognized the possibility for such global interdependence over twenty years ago when the U.S. State Department warned that "[t]he increasing complexity of modern society and interdependence among nations require international solutions to problems which once could be dealt with at the national level."⁷⁸ Western nations and the former Soviet republics must work together to promote widespread cooperative action in order to control this new and deadly threat.

5.1. *Weak Russian Legal System*

One significant problem relating to Russian organized

⁷⁶ See Hersh, *supra* note 9, at 76.

⁷⁷ For example, scientists at the Federal Nuclear Research Center Arzamas-16, a Russian nuclear-weapons laboratory, nearly rebelled "over the lack of such basic amenities as housing, health care, and regular paychecks." *Id.* The competence and knowledge of these scientists, who publicly demonstrated during the summer of 1993 in order to get paid, is equivalent to that of their U.S. counterparts at Los Alamos. *See id.* Additionally, in June 1995, the Russian scientists protested for several days "when they abruptly were reduced to a poverty allowance, in lieu of salaries that had gone unpaid for months." Hotz, *supra* note 14, at A30.

⁷⁸ U.S. DEP'T OF STATE, PUB. NO. 8699, UNITED STATES FOREIGN POLICY 1972: A REPORT OF THE SECRETARY OF STATE 129 (1973).

crime and nuclear proliferation is the lack of a Russian legal system.⁷⁹ Given the weakness of Russia's legal infrastructure, the Russian government does not have the ability to punish offenders who participate in black market smuggling schemes arranged by organized criminal syndicates.

The dissolution of legal authority in the former Soviet republics is an issue of primary concern. The Soviet Union's rapid disintegration "imperils the system that safeguarded the Soviet nuclear arsenal for more than forty years without major incident."⁸⁰ Legal and political fragmentation strain the former Soviet nuclear custodial system, which, although outdated, is still largely in place today.⁸¹ "No nuclear custodial system is designed to protect against revolution, [and] the disappearance of the political actor [or entity] that created it. . . . Yet these are exactly the conditions challenging the continued security of . . . [the nuclear weapons] deployed across the former Soviet Union."⁸²

One step that should be taken in the cooperative effort to attack the problem⁸³ of Russia's weak legal infrastructure is the institution of universal jurisdiction over perpetrators of international terrorism.⁸⁴ Almost all interna-

⁷⁹ See discussion *supra* section 3.2.

⁸⁰ Lee S. Wolosky et al., *START, START II, and Ownership of Nuclear Weapons: The Case for a "Primary" Successor State*, 34 HARV. INT'L L.J. 581, 581 (1993).

⁸¹ Nikolai N. Ponomaryov-Stepnoi, the Vice-President of the Russian Kurchatov Institute Scientific Center, discussed the problem at a press conference on August 23, 1994. See *Press Conference on Thefts of Nuclear Material* (Official Kremlin Int'l News Broadcast, Aug. 23, 1994) available in LEXIS, News Library, Script File. Ponomaryov-Stepnoi asserted that the old patterns of protection worked very well in the Soviet days of "iron discipline," but are no longer effective under current conditions. *Id.* Now that a market for such material exists, escaping punishment for theft is relatively simple. See *id.*

⁸² Wolosky et al., *supra* note 80, at 581.

⁸³ Of course, the problems created by the lack of legal infrastructure will, to a great extent, only be resolved when the new nations created out of the former Soviet empire have had time to develop their own set of persuasive and authoritative legal norms.

⁸⁴ See generally Jordan J. Paust, *A Survey of Possible Legal Responses to International Terrorism: Prevention, Punishment, and Cooperative Action*, 5 GA. J. INT'L & COMP. L. 431, 431-69 (1975)

tional instruments that prohibit terrorism have adopted this principle. For example, under the Geneva Convention, most intentional acts of terrorism are covered by provisions prescribing universal jurisdiction.⁸⁵ According to the principle of universal jurisdiction, once a country becomes aware of an offender within its borders, it must act quickly to arrest and to prosecute the person.⁸⁶ Nuclear smuggling by the "atomic mafia" should be considered terrorism which is subject to universal jurisdiction. This type of offense is harmful to all of humanity. Unilateral action on the part of one state cannot alter the universal nature of these crimes.⁸⁷

The U.S. government has displayed strong support for universal jurisdiction over international terrorists.⁸⁸ The United States views universal jurisdiction "as an 'important contribution to be made by international law . . . aimed at deterring terrorist acts by eliminating any safe haven for the perpetrators.'"⁸⁹ This position finds additional support in the widely recognized principle that "[e]very state has the duty to refrain from . . . acquiescing in organized activities within its territory directed towards the commission of such acts" of civil strife or terrorism.⁹⁰ Under a

(discussing the related problems of international terrorism and aircraft hijacking as examples where international law effectively promoted cooperative investigation and prosecution of transnational criminal acts).

⁸⁵ See *id.* at 452 n.84 and accompanying text (quoting Geneva Convention Relative to the Protection of Civilian Persons in Time of War, Aug. 12, 1949, art. 147, 3 U.S.T. 3516, 75 U.N.T.S. 287).

⁸⁶ See *id.* at 452 (citation omitted).

⁸⁷ See *id.* (citation omitted).

⁸⁸ *Id.* One example of U.S. support for this principle is found in An Act to Amend the Atomic Energy Act of 1954, as amended, and the Atomic Weapons Rewards Act of 1955, and for Other Purposes, Pub. L. No. 93-377, 88 Stat. 472, 13 I.L.M. 1217 (1974), cited in Coleman, *supra* note 55, at 510. In this Act, passed in 1974, a reward of up to \$500,000 is offered to anyone who furnishes original information to the United States concerning the discovery of nuclear sabotage and theft before the theft or sabotage occurs. See *id.*

⁸⁹ Paust, *supra* note 84, at 452-53 (quoting U.S. DEPT OF STATE, PUB. NO. 8689, THE ROLE OF INTERNATIONAL LAW IN COMBATING TERRORISM 5 (1973)).

⁹⁰ Paust, *supra* note 84, at 459 (citing *Declaration on Principles of International Law Concerning Friendly Relations and Co-operation*

system of universal jurisdiction, the country in which the criminal syndicate originates may itself lack the legal infrastructure to apprehend nuclear smugglers. This condition, however, will not prevent any other nation in whose territory the criminal networks operate from arresting and prosecuting the nuclear smugglers.

Another means of minimizing the effect of Russia's weak legal system is to monitor former Soviet nuclear material by means of international non-proliferation agreements. The nuclear Non-Proliferation Treaty ("NPT" or "Treaty"), which has been signed by the CIS nations and the United States,⁹¹ provides one of the most promising international means of monitoring nuclear proliferation within the CIS. To fill this role, however, signatories must increase greatly the Treaty's punishments for violators. This point was made poignantly during the Persian Gulf War, when the world realized that Iraq had secretly built a nuclear arsenal, violating the NPT with impunity for many years.⁹² To prevent this type of situation from recurring, NPT violations must be deterred by a form of international punishment.⁹³

Several types of punishment have been proposed. One alternative is "international isolation" of countries that violate the NPT, which would be carried out through United Nations sanctions.⁹⁴ While sanctions against a violating country are a possibility, enforcement would be extremely difficult, if not impossible.⁹⁵ A narrowly defined system of

Among States in Accordance with the Charter of the United Nations, G.A. Res. 2625, U.N. GAOR, 25th Sess., Supp. No. 28, at 123, U.N. Doc. A/8028 (1970). A similar proscription prohibits related attempts to "organize, assist, . . . finance, . . . or tolerate subversive, terrorist[,] or armed activities." *Id.*

⁹¹ For a discussion of the NPT and its main provisions, see *infra* notes 101-08 and accompanying text.

⁹² See *supra* notes 19-21 and accompanying text.

⁹³ See Levin, *supra* note 3, at 977.

⁹⁴ *Id.* at 978. Hans Dietrich Genscher, the German Foreign Minister, suggested that United Nations sanctions should be imposed against NPT violators. See *id.*

⁹⁵ See *id.* (noting that goods were still able to reach Iraq during the Persian Gulf War, even though the general consensus of United Nations members favored sanctions against Iraq).

sanctions, however, may prove to be a viable option.⁹⁶ Whatever form of international punishment is chosen, the crucial element of enforcement is the awareness on the part of potential violators that no acceptable excuse exists for violating a voluntarily signed international treaty.

Western nations thus can use international mechanisms to help bolster Russia's weak internal legal system. U.S. policies which impose universal jurisdiction over perpetrators of international terrorism provide support for instituting a policy of universal jurisdiction over acts of nuclear smuggling. In addition, Western nations can monitor nuclear proliferation within former Soviet territory through the use of international non-proliferation agreements.

5.2. Porous Borders and Export Controls

The weak export controls and extremely porous borders of the former Soviet republics further complicate the effort to combat nuclear proliferation by Russian organized crime.⁹⁷ The collapse of the Soviet empire presents entirely new difficulties in the area of export control. Many of the former Soviet republics have significant nuclear arsenals and facilities within their borders.⁹⁸ Except for Russia, however, these new nations possess "limited political or technical capacity to formulate or enforce" the kinds of nuclear non-proliferation policies that are currently embodied in the non-proliferation treaties.⁹⁹

⁹⁶ See *id.* A form of limited sanctions where countries agreed not to do business with the violating country, such as those imposed upon South Africa, might be an effective deterrent in preventing states from violating the NPT. See *id.*

⁹⁷ See Shipman, *supra* note 26 (noting that smugglers do not face the rigid customs controls of the past because both internal and external borders are now more porous).

⁹⁸ For example, upon the dissolution of the Soviet Union, "Ukraine immediately became the world's third-largest nuclear power, with more weapons than Britain, France, and China combined." Wolosky et al., *supra* note 80, at 581.

⁹⁹ Deutch, *supra* note 13, at 129. In addition, Deutch notes that "desperate economic conditions in these countries provide considerable incentive for individuals, laboratories, or factories to profit by exporting nuclear materials and technology." *Id.* For a discussion of non-proliferation treaties currently in force, see *infra* notes 101-08 and accompanying text.

The United States and several of the CIS nations have signed many bilateral and multilateral nuclear non-proliferation treaties during the last few years. Some of these treaties, if strictly followed by the signatories, could be used as a means of strengthening border and export controls in the CIS. The first and most important of these agreements is the NPT.¹⁰⁰ Signed in 1968, the Treaty is the cornerstone of international nuclear non-proliferation efforts.¹⁰¹ Although adherence to the NPT is only voluntary, more than 170 countries have signed the Treaty, making it one of the most widely acceded to treaties on any subject.¹⁰² Moreover, in May 1995, by agreeing to renew indefinitely the Treaty, the signatories made the NPT and its provisions permanent.¹⁰³

Despite great international pressure, Ukraine had refused to sign the NPT for quite some time. Following a period of uncertainty,¹⁰⁴ Ukraine finally agreed to become a party to the Treaty in 1994.¹⁰⁵ In so doing, Ukraine

¹⁰⁰ Treaty on the Non-Proliferation of Nuclear Weapons, *opened for signature* July 1, 1968, 21 U.S.T. 283, 729 U.N.T.S. 161 [hereinafter NPT].

¹⁰¹ See Lynn E. Davis, Preventing the Proliferation of Dangerous Arms, Address before the Atlantic Council (Dec. 8, 1994) (transcript available in LEXIS, Intlaw Library, Dstate File). The following are the significant provisions of the NPT:

1. each non-nuclear-weapon state which is a Party to the Treaty agrees not to manufacture or acquire nuclear weapons or any nuclear explosive device (NPT, Article II);
2. each non-nuclear-weapon Party is required to submit to IAEA safeguards through negotiations with the Agency to be begun within specified time limits (NPT, Article III. § 1, § 4);
3. each nuclear-weapon Party agrees not to supply any non-nuclear-weapon state (whether a Party or not) with certain types of nuclear items for peaceful purposes, except subject to IAEA safeguards (NPT, Article III. § 2).

Coleman, *supra* note 55, at 502-03.

¹⁰² See Williamson, *supra* note 21, at 122.

¹⁰³ See Norman Kempster, *Nations Agree to Make Nuclear Pact Permanent*, L.A. TIMES, May 12, 1995, at A1.

¹⁰⁴ See generally Wolosky et al., *supra* note 80, at 583 (indicating that Ukraine's initial refusal to sign the NPT imposed great obstacles to achieving the denuclearization regime envisioned by the drafters of the NPT).

¹⁰⁵ See Davis, *supra* note 101 (noting that Ukraine's decision, along with those of Belarus and Kazakhstan, allowed "the START I treaty to

promised either to hand over the nuclear warheads within its territory to Russia or to dismantle and destroy the strategic missile systems under its control.¹⁰⁶ Ukraine's accession to the NPT paved the way for the 1994 ratification of the important START I treaty¹⁰⁷ between the United States, Russia, Belarus, Kazakhstan, and Ukraine.¹⁰⁸

The problems of poorly policed borders and minimal export controls require a cooperative effort by Western nations and the former Soviet republics.¹⁰⁹ The newly independent states must create completely new domestic laws regulating the materials that can cross their borders. In this effort, they will be aided greatly by Western assistance "in designing, establishing, or improving export control systems to prevent the proliferation of weapons of mass destruction and related technologies."¹¹⁰ Ukraine's signing of the NPT and the implementation of START I provide hope for the success of legal and technological

enter into force").

¹⁰⁶ See *id.*

¹⁰⁷ Treaty on the Reduction and Limitation of Strategic Offensive Arms, July 31, 1991, U.S.-Russia, S. TREATY DOC. NO. 20, 102d Cong., 1st Sess. (1991) [hereinafter START I].

¹⁰⁸ Together with START II, which had been set for ratification in the first half of 1995, see Davis, *supra* note 101, implementation of START I commits the United States and the CIS signatories to a denuclearization program that would "reduce aggregate strategic warhead levels from approximately 10,000-12,000 to 3000-3500 per side; eliminate completely the most dangerous and destabilizing weapons manufactured during the Cold War; . . . and . . . help assure a centralized, Moscow-based command and control over remaining nuclear weapons to guard against accidental loss or unauthorized use." Wolosky et al., *supra* note 80, at 582 (citations omitted). As of early September 1995, however, the U.S. Senate was not prepared to ratify START II. See Barbara Crossette, *Chemical Treaty Appears on Hold in the Senate*, N.Y. TIMES, Sept. 10, 1995, at 12.

¹⁰⁹ Of course, international measures cannot replace a nuclear nation's domestic efforts. According to a senior official at the U.N.'s International Atomic Energy Agency, to counter the threat of smuggling fissile materials, "there is no substitute for the work of the police forces, border patrols, and customs services of individual nations and their intelligence resources." Thom Shanker, *Nuclear Smuggling: Global Peril, Local Problem*, CHI. TRIB., Oct. 30, 1994, at 5C.

¹¹⁰ Goodby, *supra* note 1, at 705 (noting that the United States has begun discussions on cooperation in this matter with some of the former Soviet republics, including Russia, Belarus, Kazakhstan, and Ukraine).

structures which control nuclear weapons transfer. Providing support and monitoring compliance will be essential to the success of these efforts. Cooperation with the West is critical because the United States and Western European nations have experience in designing export control regimes and can assist the new nations in monitoring exports and policing borders.

5.3. *Material Control and Accountability*

Perhaps the biggest and most urgent problem is accounting for and protecting nuclear material currently in Russia and the other former Soviet republics. Many Westerners believe that the CIS is the source of the fissile material diverted to Europe.¹¹¹ To be successful, nuclear non-proliferation policies require “a strict and secure system to protect nuclear materials against theft, diversion, loss, or unauthorized use.”¹¹² It is precisely this physical protection system that the newly independent states lack.¹¹³

Security has completely broken down at the former Soviet nuclear research institutes and laboratories, where the governments of the newly independent states trust employees to account for the nuclear material on their own.¹¹⁴ This problem is related intricately to the social and political turmoil that the newly independent nations have experienced since the empire’s collapse.¹¹⁵ Maintain-

¹¹¹ See State Department Regular Briefing (Aug. 17, 1994) (statement of Mike McCurry), available in LEXIS, News Library, Script File [hereinafter McCurry Statement].

¹¹² Goodby, *supra* note 1, at 705.

¹¹³ One Russian official commented facetiously that the Soviet Union’s nuclear sites “used to be guarded by stern KGB agents with machine guns,” but now, security is only “a *babushka* in a hut with a key. And she’s gone home.” Masland, *supra* note 10, at 31.

¹¹⁴ At his February 1995 trial in Murmansk, Russian Navy Lieutenant Colonel Alexei Tikhomirov admitted stealing four kilograms of uranium with the intent to sell it for \$50,000. See *Russian Uranium Simple to Steal, Court is Told*, REUTERS WORLD SERVICE, Feb. 15, 1995, available in LEXIS, News Library, Wires File. Tikhomirov told the court that “[t]he importance of this [theft] is not the crime itself. . . . It’s how this extremely radioactive material is guarded — how . . . easy it is for people to get hold of it.” *Id.*

¹¹⁵ See discussion *supra* section 3.1.

ing tight security over valuable material for any length of time is extremely difficult when accountability systems no longer exist.¹¹⁶

Creating an inventory control system basically is impossible because the Russians themselves do not know how much nuclear material the former Soviet Union produced.¹¹⁷ Until an initial inventory is made, however, accounting for any movements of nuclear material, either within Russia or across its borders, will not be feasible.¹¹⁸

The United States and Russia currently are engaged in a cooperative effort to improve the control, accounting, and physical protection of fissile material. U.S. and Russian weapons scientists are working together on dozens of non-military research projects in Russia and the United States.¹¹⁹ These scientists also have joined efforts to control nuclear technology scattered across Russia. Specialists at the U.S. national laboratory in Los Alamos, for example, have introduced their Russian colleagues to computerized inventory controls and electronic security measures in order to help secure Russia's nuclear arsenal.¹²⁰

Moreover, Congress has enacted the Cooperative Threat Reduction Act, or Nunn-Lugar Program,¹²¹ to help the former Soviet republics downsize their nuclear programs.¹²² This Act includes financial assistance intended

¹¹⁶ See *MacNeil/Lehrer, supra* note 12. One U.S. official monitoring Russian laboratories said nuclear material was as available as "a book in the library. . . . [and] [n]o one will tell you the book is overdue." Masland, *supra* note 10, at 32. Some Russian laboratories have not verified their inventories within the past decade. See *id.*

¹¹⁷ See *MacNeil/Lehrer, supra* note 12.

¹¹⁸ See *id.*

¹¹⁹ See Hotz, *supra* note 14, at A1.

¹²⁰ See *id.* at A30.

¹²¹ See Richard Lugar, *Nuclear Smuggling Poses Terrorist Threat*, ST. LOUIS POST-DISPATCH, Sept. 12, 1995, available in LEXIS, News Library, Curnws File.

¹²² See *MacNeil/Lehrer, supra* note 12 (noting that the United States and Russia are negotiating a \$30 million agreement to address, among other issues, the security of, and accountability for, fissile materials); see also McCurry Statement, *supra* note 111 (indicating that the United States has offered to provide Russia up to \$30 million for immediate improvements in security and accounting of nuclear

to help secure stockpiles of plutonium and highly enriched uranium against theft. For example, some of the aid is earmarked for the installation of detectors in laboratories to ensure that no one leaves with fissile material on his or her person.¹²³

While the Nunn-Lugar Program has had moderate success in helping the Russians eliminate some of their nuclear inventories, the legislation "was not created to deal with the immense size and scope of the nuclear leakage problem."¹²⁴ To a great extent, therefore, neither Russia nor the United States has benefitted from this assistance.¹²⁵ Furthermore, problems of implementation have played a large role in preventing the Nunn-Lugar Program from achieving its goals.¹²⁶ Security concerns and Cold War-era laws have prevented the expenditure of millions of dollars that Congress approved to help curtail nuclear smuggling.¹²⁷

5.3.1. "Project Sapphire"

In the areas of material control and accounting, one successful cooperative effort between the East and the West suggests an effective model for the future. The successful

materials in Russia).

¹²³ See Charles, *supra* note 24.

¹²⁴ Lugar, *supra* note 121.

¹²⁵ See Charles, *supra* note 24. The projected assistance largely has not materialized as planned. See *id.* Political obstacles in the United States have blocked a great deal of the authorized money from reaching its intended targets in the CIS. See *id.*

¹²⁶ Russia's domestic political problems have prevented its government from fully implementing the small amount of aid that Western nations have delivered. In addition, many Russians still view Western aid with skepticism and remain gripped by the fear that an offer of help from the United States is a "hidden effort to keep Russia weak . . . to make sure Russia does not ever build up its power again." Hotz, *supra* note 14, at A30 (quoting Loren R. Graham, an authority on science in Russia at the Massachusetts Institute of Technology); see also Charles, *supra* note 24 (reporting that the funds which had been authorized for denuclearization, including funds for material control and accounting, had not been delivered to the intended targets).

¹²⁷ See *id.* U.S. laws during the Cold War prevented the U.S. government from paying Russians, and the Russians refused to allow U.S. citizens onto their nuclear sites without reciprocal visits. See *id.*

operation took place in November 1994, in the former Soviet republic of Kazakhstan.¹²⁸ The mission, code-named "Project Sapphire,"¹²⁹ involved the airlift to the United States of a half ton of enriched uranium, enough to build twenty nuclear bombs.¹³⁰ The material was discovered in a poorly guarded warehouse in southeastern Kazakhstan. Under the direction of U.S. nuclear engineers, the uranium was extracted from a cache of nuclear material and sent to Oak Ridge, Tennessee, for reprocessing into harmless commercial-grade uranium.¹³¹ In return for its agreement to ship the uranium out of Kazakhstan, the Kazakh government will receive an aid package consisting of compensation and technical assistance from the United States.¹³²

The successful cooperation between the United States and Kazakhstan in Project Sapphire led to the relocation of the largest cache of uranium from a former Soviet republic to the United States.¹³³ By putting the fissile material out of the reach of organized crime syndicates and potential black marketeers,¹³⁴ this type of mission presents a viable and successful solution to the enormous problem of protecting fissile material from the "atomic mafia."

A similar cooperative arrangement was reached with the Russian government in August 1992, when the Bush Administration announced a twenty-year accord to purchase

¹²⁸ Columnists praised the operation and emphasized its importance. *Mission Leaders Should Be on Call*, SUN-SENTINEL (Ft. Lauderdale), Nov. 26, 1994, at 20A, available in LEXIS, News Library, Papers File [hereinafter *Mission Leaders*]. The grim and real prospect of bomb-grade uranium being stolen and going to terrorists or rogue nations has kept Western political leaders and scientists on edge. *Id.* That worry became the driving force behind a secret mission in Kazakhstan, in which a half ton of nuclear material was flown to a safe refuge in Oak Ridge, Tennessee. *Id.*

¹²⁹ Art Pine, *U.S. Takes over Uranium Cache from Kazakhs*, L.A. TIMES, Nov. 23, 1994, at A1, A9.

¹³⁰ *See id.*

¹³¹ *See Mission Leaders*, *supra* note 128, at 20A.

¹³² *See Davis*, *supra* note 101.

¹³³ *See Pine*, *supra* note 129, at A9.

¹³⁴ *See David Osborne*, *US Airlifts Out Cache of Kazakh Uranium*, INDEPENDENT (London), Nov. 24, 1994, at 18, available in LEXIS, News Library, Papers File.

500 metric tons of bomb-grade uranium which were to be removed from Russia's discarded nuclear weapons, for use in U.S. civil reactors.¹³⁵ The Enrichment Corporation of Bethesda, Maryland, won the contract to effectuate the deal.¹³⁶ The Enrichment Corporation, however, subsequently has reached a deadlock with the Russian Ministry of Atomic Energy over pricing. Three years after it was announced, unfortunately, the accord appears lost in a "quagmire of incompetent implementation" and is "in danger of coming completely undone."¹³⁷

Expecting the former Soviet republics to give away all of their nuclear arms by shipping them to the United States is impractical. Large East-West transfers of nuclear material therefore only can be used to supplement other regulatory programs which would permit the CIS to retain some of its nuclear material within the territory of the former Soviet Union. Thus, the United States and the CIS nations must utilize nuclear non-proliferation treaties to eliminate the threat posed by the black market for nuclear materials.¹³⁸ For example, under the NPT, Ukraine, Belarus, and Kazakhstan have agreed to transfer many of their nuclear warheads to Russia.¹³⁹ By insuring compliance with the NPT, the United States can help Russia establish a centralized, Moscow-based system of control over the nuclear weapons remaining in former Soviet territory,¹⁴⁰ thereby decreasing the chance of theft. Programs like Project Sapphire will work best in conjunction with international monitoring through non-proliferation agreements.

¹³⁵ See William J. Broad, *Experts See Peril for U.S. Pact to Buy Up Russian Bomb Fuel*, N.Y. TIMES, June 12, 1995, at A1, A6.

¹³⁶ See *id.*

¹³⁷ *Id.* (quoting Richard A. Falkenrath, a fellow at the Center for Science and International Affairs at Harvard University). During their July 1995 meeting in Moscow, Vice President Gore and Russian Prime Minister Chernomyrdin set a November 1995 deadline to conclude the deal. See Josh Friedman, *The New Nuclear Threat*, NEWSDAY, Aug. 6, 1995, available in LEXIS, News Library, Curnws File.

¹³⁸ See discussion *supra* section 5.2.

¹³⁹ See Davis, *supra* note 101.

¹⁴⁰ See Wolosky et al., *supra* note 80, at 582.

5.4. *The Role of the International Atomic Energy Agency*

A final potential solution to the linked problems of Russian organized crime and nuclear proliferation is the establishment of an international agency to guard against the black market in fissile materials.¹⁴¹ The International Atomic Energy Agency ("IAEA" or "Agency"), the nuclear watchdog of the United Nations,¹⁴² is the obvious choice for such a role. Created in 1957 to insure the peaceful use of nuclear materials, the IAEA has experience in monitoring nuclear sources in its role as the U.N.'s chief guardian against violations of non-proliferation treaties.¹⁴³ The Agency plays a central role in enforcing the non-proliferation treaties because it has the power to inspect nuclear facilities and account for nuclear materials.¹⁴⁴

Although the IAEA traditionally has lacked police powers,¹⁴⁵ its present leadership has expressed willingness to assume a more aggressive role in monitoring and inspecting nuclear facilities.¹⁴⁶ For example, the Director General has announced that the Agency has authority to conduct special inspections anywhere in an NPT signatory

¹⁴¹ In September 1994, President Clinton and Russian President Yeltsin concluded their summit in Washington by calling for an international agency to protect Russian nuclear stockpiles from being stolen or illegally diverted. See Shanker, *supra* note 109, at 5.

¹⁴² See *id.*

¹⁴³ The traditional role of the IAEA has been to maintain the distinction between civilian and military applications of nuclear materials by inspection of civilian nuclear facilities. See Deutch, *supra* note 13, at 122. When the Agency conducts inspections, however, it limits the scope of inspection to accounting for the amount of nuclear material produced at and held by the particular nuclear facility. *Id.*

¹⁴⁴ See Williamson, *supra* note 21, at 120.

¹⁴⁵ See Shanker, *supra* note 109, at 5; see also Levin, *supra* note 3, at 973 (noting that the IAEA has been able to inspect a country's facility only after it receives permission to do so from the host government).

¹⁴⁶ See, e.g., Deutch, *supra* note 13, at 129. Notably, the IAEA General Conference passed a resolution in November 1994 to involve the Agency in the prevention of nuclear smuggling. See Mark Hibbs, *IAEA Role in Containing Smuggling Will be Limited, Blix Says*, NUCLEONICS WK., Oct. 6, 1994, at 1, available in LEXIS, News Library, Nwltrs File.

if such inspections are deemed to be “reasonably necessary to verify that all nuclear material is under safeguards.”¹⁴⁷ If the IAEA is given the power in the future to carry out its broadened mandate, the Agency likely will play a significant role in the prevention of smuggling and diversion from former Soviet nuclear facilities. Enlarging the scope of IAEA inspections and enabling the Agency to act on them will put the Agency in a better position to monitor compliance with non-proliferation treaties such as the NPT.¹⁴⁸ By broadening its power to inspect nuclear sites, the IAEA can become a highly effective mechanism by which to safeguard deadly fissile material against powerful organized criminal networks.¹⁴⁹

6. CONCLUSION

There is perhaps no aspect of international law that is more important to humanity today than the prevention of illicit proliferation of nuclear weapons from former Soviet arsenals.¹⁵⁰ The stress of the Soviet empire’s collapse weakened Russia’s ability to maintain control over its nuclear weapons and associated technologies. Russia’s economy has deteriorated while its political institutions have struggled to maintain a modicum of authority and leadership. At the same time, the nation’s weak legal system has hindered the government’s ability to apprehend and punish those who are tempted by the lure of large

¹⁴⁷ Williamson, *supra* note 21, at 127 n.222.

¹⁴⁸ See Levin, *supra* note 3, at 974 (arguing for a larger IAEA budget and more inspections as a means of making the agency more effective).

¹⁴⁹ Some argue that the IAEA cannot take on a police-like role in controlling nuclear proliferation. Hans Blix, the Agency’s Director General, asserts that the Agency is “not a police organization” and that, while the Agency may have an auxiliary role to play, it will not be given new responsibilities in the area of physical protection of nuclear materials. Hibbs, *supra* note 146, at 10.

¹⁵⁰ See B.S. Chimni, *Nuclear Weapons and International Law: Some Reflections*, in INTERNATIONAL LAW IN TRANSITION 137, 141 (R.S. Pathak & R.P. Dhokalia eds., 1992) (quoting H.L.A. Hart, THE CONCEPT OF LAW 188 (1961) (warning that the world’s “concern is with social arrangements for continued existence, not with those of a suicide club”)).

profits for stolen nuclear materials.

Journalists in the United States have highlighted dramatically the enormous danger posed by the turmoil in Russia. In a recently published investigative report, two U.S. news agencies uncovered the first hard evidence that Russian crime syndicates already have attempted to smuggle nuclear-related materials from the former Soviet Union.¹⁵¹ By tracing the path of a shipment of a nuclear-related material called beryllium, which police in Lithuania had seized in May 1993, the journalists found "irrefutable proof" that Russian organized crime was behind the shipment.¹⁵²

In light of the palpable threat that Russia's turbulent domestic situation poses to international security, Eastern and Western nations clearly need to work together to combat Russian organized crime and protect Russia's fissile material. The international system can no longer leave responsibility for protection of nuclear materials in the hands of each individual nation. Russia's system is too weak and thus is inadequate to safeguard its enormous inventory of nuclear weapons. Without assistance from the West, the possibility of successful nuclear diversion from Russian facilities by organized criminal networks is alarmingly real.

Post-communist Russia provides fertile ground for organized criminal syndicates to prosper. Western nations, working jointly with the former Soviet republics, can take a variety of actions to control this new and unprecedented global danger. Project Sapphire and similar operations in which the United States will buy fissile material from deactivated weapons are among the most promising. Such programs, if used to supplement international monitoring through non-proliferation treaties, will establish a strong first step in attacking the new global threat.

Despite early optimism, the end of the Cold War has not

¹⁵¹ See Tom Zimmerman & Alan Cooperman, *The Russian Connection*, U.S. NEWS & WORLD REP., Oct. 23, 1995, at 56, 58. This investigative report represents the culmination of a cooperative effort between CBS News' "60 Minutes" and reporters from *U.S. News & World Report*.

¹⁵² *Id.*

significantly decreased the risk of nuclear war. The joint investigation that traced the path of beryllium found in Lithuania leads to the frightening realization that “the impossible has happened”¹⁵³ — diversion from Russian nuclear facilities has already occurred. To assure that the incidence and magnitude of such smuggling do not escalate in the future, both the East and the West must work together to develop the domestic legal systems of the countries susceptible to the problem of nuclear smuggling, to improve export control regimes, and to strengthen material control and accounting systems. The future security of all nations depends upon this cooperative effort.

¹⁵³ *Id.*