

THE FORGOTTEN CHALLENGE? NUCLEAR NONPROLIFERATION EFFORTS AND THE FORMER SOVIET UNION¹

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Headline-grabbing international crises understandably tend to gain public attention. Conflicts in Bosnia and Kosovo, Sierra Leone and East Timor, and now Chechnya are held in the spotlight of international news and are quickly relegated to the background when they are resolved or have gone on for too long to be newsworthy. Likewise the open testing of nuclear warheads by India and Pakistan initially garnered much international discussion, and some sanctions. Since then the matter appears to have been put to rest and forgotten by the public, and has been only barely mentioned in the context of the recent turmoil and military coup in Pakistan.

The threat of nuclear proliferation is not a topic prone to reach the headlines of international newspapers or the lead stories of television news programs. It is a quiet crisis, incremental in nature and without the horror of pictures of starving children, mass murder gravesites, or miserably filthy refugee camps. Iraq's invasion of Kuwait mobilised international action and received

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virtually unanimous condemnation, while the post Gulf War effort to investigate and dismantle Iraq's program for developing weapons of mass destruction proved politically controversial and has disintegrated in practice.

In the case of the Former Soviet Union, monitoring and managing the threat of nuclear proliferation involves legal and political institution-building, long term economic development support, and technical cooperation projects. None of these efforts are likely to garner a high public profile, but their success is essential to avoid a worst case outcome that might achieve such a profile. This would be the attaining of nuclear weapons capability by a revolutionary rogue state (not India and Pakistan) or non state group with an agenda and a willingness to use that capability.

A second nuclear scenario - local human and environmental disaster associated with the decay and collapse of facilities for the storage of nuclear warheads and nuclear waste also could occur, but even if it is avoided the decay and fragmentation of infrastructure (physical, legal and administrative) can offer avenues for proliferation. In either case the key for success is prior preventive action, not measures taken after the fact. Without the grim international headlines however - without a crisis or imminent disaster the sustained political, financial and legal attention needed to put programs in place and especially then to sustain them over time is hard to generate or to justify in the face of competing demands.

This is the unfortunate reality of dealing with the topic of nuclear proliferation. The threat posed by proliferation is none the less real for being incremental and potential rather than dramatic and immediately obvious. In some senses it may resemble the threat of global warming and ecological change, or that posed by uncontrolled population growth. As with these ongoing global problems, the warning signs of future implications exist but can be relegated to the background in favour of more immediate crises new wars, major floods and natural disasters, or droughts and famines.

The analysis offered here considers the threat, or the potential threat, of nuclear proliferation in the states of the Former Soviet Union. We examine this subject set against the legal and

political framework of the Nonproliferation Treaty and the broader nonproliferation regime. One argument being advanced is that the while certainly valuable, the Treaty by itself is inadequate to deal with the multiple potential sources of proliferation. These may be separated into three main categories: direct government policy; indirect neglect of controlling infrastructure; and deliberate illicit acts by individuals, criminal organisations and terrorist groups. Around the Treaty several additional bilateral and international nonproliferation initiatives have been undertaken, the effectiveness of which appears to be uneven. The possible transfer of nuclear weapons, weapons-grade nuclear materials, technology and knowledge from Russia, Belarus, Ukraine and Kazakhstan continues to pose a real challenge to international security, and one that will require constant and consistent attention. Otherwise, a crisis that will involve nuclear materials or even worse, nuclear weapons, awaits the international community.

This is not, however, simply a study in doom and gloom. We look systematically at the three forms of possible nuclear proliferation noted above, and examine what political and legal/institutional or other responses have been adopted. Such an analysis allows us the opportunity to weigh realistically the relative importance of potential proliferation sources and threats; and hence, to judge the practical effectiveness of present and ongoing activities intended to manage such sources and threats. Finally, we suggest what issues we still need to consider, and what actions still need to be taken, in the hope of preventing what we believe is an undesirable outcome further and possibly widespread nuclear proliferation.

1. The Nonproliferation Treaty and the Nonproliferation Regime

Nuclear proliferation refers to both the unauthorised diversion of nuclear arms from existing nuclear states and the increase in the number of nuclear states resulting from political fragmentation and the creation of new states.² Proliferation includes more than just warheads; it encompasses a wide range of

²L. S. Wolosky et al., 'START, START II, and Ownership of Nuclear Weapons: The Case for a "Primary" Successor State', *Harvard International Law Journal*, Vol. 34, 1993, p. 581 fn1.

materials and associated technology such as weapons-grade uranium, plutonium, nuclear processing technology, ballistic missile technology, nuclear experts and some dual use chemicals.³ Fissile materials are a critical component in the development of nuclear weapons and nuclear capabilities, and thus are included in the list of forms of potential nuclear proliferation.⁴ In addition, proliferation can occur along two general axes, horizontal and vertical. Horizontal proliferation refers to the spreading of nuclear capabilities to states which previously did not have possess them, while vertical proliferation is considered to be the qualitative improvement, or quantitative increase, in nuclear weapons by the recognised existing nuclear weapons states.⁵

1.1. Development and Structure of the NPT Regime

The Nonproliferation Treaty⁶ (NPT) came into force in 1970 and is recognised widely as the cornerstone of the nonproliferation regime. The Treaty emerged from a series of United Nations debates and involved compromises between Nuclear Weapons States (NWS) and Non-Nuclear Weapons States (NNWS). Most governments taking part in the discussions agreed that an international legal framework was an essential component of efforts to control and eliminate nuclear proliferation. However, the motives behind their support for these efforts varied among the governments that did or did not possess nuclear weapons.

In the 1950s and 1960s the five major victorious post-war powers - Britain, China, France, the Soviet Union and the United

³North Atlantic Assembly, *Scientific and Technical Committee: NAA Report*, online: <<http://www.funet.fi/pub/doc/world/NAA/science-techcomm>> p. 5; W. C. Potter, 'The Post-Soviet States and the Nuclear Nonproliferation Regime' in G. Quester (ed.), *The Nuclear Challenge in Russia and the New States of Eurasia*, New York, M.E. Sharpe, 1995, p. 15.

⁴O. Bukharin, 'Technical Aspects of Proliferation and Nonproliferation' in Quester, *ibid.*, p. 35.

⁵W. Epstein and P. C. Szasz, 'Extension of the Nuclear Proliferation Treaty: A Means of Strengthening the Treaty', *Virginia Journal of International Law*, Vol. 33, 1993, p. 743.

⁶*Treaty on the Nonproliferation of Nuclear Weapons (1968)*, open for signature 1 July 1968, *United Nations Treaty Series*, Vol. 729, p. 169: <<gopher://wealaka.okgeosurvey1.gov:70/00/nuke.treaties/NPT>>.

States all had or were developing nuclear capabilities. They saw a nonproliferation agreement as a means to maintain their advantage by reducing the possibility of smaller states legitimately or otherwise obtaining nuclear capabilities and the political leverage that this provided.⁷ The governments of the non-nuclear states, on the other hand, generally disliked what they argued was the discriminatory nature of the proposals for the treaty, namely that the NWS would not allow the NNWS to obtain nuclear weapons. These governments, therefore, sought to have several principles and legal mechanisms included in the treaty to control both vertical and horizontal proliferation, and to have the NWS formally commit to the elimination of their own nuclear arsenals.⁸ The main obligations of the treaty thus came to revolve around a bargain. Nuclear weapons states accepted obligations not to transfer nuclear weapons or control over them to anyone and not to assist any non-nuclear weapons states to manufacture or otherwise acquire them, while non-nuclear states have the converse obligation.⁹ As well, the nuclear weapons states made a commitment to pursue the goal of eventual complete nuclear disarmament.

The Nonproliferation Treaty is the overarching international legal instrument used to discourage proliferation; in addition, the wider nonproliferation regime is composed of several regional, bilateral, and unilateral nuclear agreements. These include the Nuclear Suppliers Group, a group of nuclear supplier countries which seeks to contribute to the nonproliferation of nuclear weapons¹⁰ and the International Atomic Energy Agency, which is the monitoring and compliance mechanism in the NPT. A third arrangement is the Missile Technology Control Regime, which limits exports of ballistic missiles, their parts, or production

⁷A. Kapur, 'World and Regional Power Relations without the NPT' in G. Hastedt (ed.), *One World, Many Voices: Global Perspectives on Political Issues*, New Jersey, Prentice Hall, 1995, pp. 133-135.

⁸Epstein/Szasz, *Extension of the Nuclear Nonproliferation Treaty*, pp. 736-739.

⁹G. Bunn and J. B. Rhinelander, 'The Arms Control Obligations of the Former Soviet Union', *Virginia Journal of International Law*, Vol. 33, 1993, p.334.

¹⁰Nuclear Suppliers Group, *The Nuclear Suppliers Group: Its Origins, Roles and Activities*: <http://www.sipri.se/projects/expcon/infcirc_539_1_htm>, p. 1.

facilities¹¹. In addition to these international institutions, the nonproliferation regime is expressed through regional nuclear free zones such as the South Pacific Nuclear Free Zone; and by the enactment of national nuclear export regulatory policies.¹²

Arguably, the nonproliferation regime and the treaty have created a widely accepted international political norm, and an international legal obligation, of nuclear nonproliferation.¹³ The legal structure of the NPT is a reflection of the compromises reached during the extended draft treaty negotiations. It includes safeguards for non-nuclear states such as a five year review process;¹⁴ a three month notice requirement for any signatory state that seeks to withdraw from the treaty;¹⁵ and a number of disarmament provisions for the nuclear weapons states.¹⁶

1.2. Russia, FSU States and Nonproliferation

Since the dissolution of the Soviet Union, Russia has been recognised in its place as the succeeding state to the Nonproliferation Treaty, and to additional treaties and organisations including the Nuclear Suppliers Group (NSG) and the Missile Technology Control Regime (MTCR).¹⁷ This diplomatic and legal recognition resolved formal questions regarding Russias position towards official commitments to the nonproliferation regime. The several other states that inherited

¹¹W. Nester, *International Relations: Geopolitical and Goeconomic Conflict and Cooperation*, New York, Harper Collins, 1995, p. 282. See also MTCR, *The Missile Technology Control Regime: An Information Paper*, <http://www.sipri.se/projects/expocon/mtrc_informationpaper.htm>.

¹²Kapur, *World and Regional Power Relations*, p. 136.

¹³Z. S. Davis, 'Nuclear Proliferation and Nonproliferation Policy in the 1990s' in M. T. Klare and D. C. Thomas (ed.), *World Security: Challenges For a New Century*, second edition, New York, St. Martins Press, 1994, p. 125.

¹⁴*Treaty on Nonproliferation*, Article VIII (3).

¹⁵*Ibid.*, Article X(I);

¹⁶*Ibid.*, Article VI.

¹⁷Bunn/Rhinclander, *Arms Control Obligations*, p. 325. Also see Carnegie Endowment Center For International Peace and The Monetary Institute of International Studies, *Nuclear Successor States of the Soviet Union: Status Report on Nuclear Weapons, Fissile Material and Export Controls*, Moscow, Carnegie Endowment Center, March 1998, p. 94.

Soviet nuclear assets in the early 1990s have had divergent goals regarding these nuclear capabilities. For Ukraine, Belarus and Kazakhstan their new nuclear possessions were seen as offering them foreign and security policy resources to be employed against any future Russian efforts at political (or military) domination. These states were, as a consequence, slower to accede to the same treaty commitments and generally have done so only in the context of broader negotiations with Russia and especially the United States.¹⁸

Belarus joined the Nonproliferation Treaty as a non-nuclear weapons state in July 1993, and signed a Safeguards Agreement with the International Atomic Energy Agency in April 1994. As this analysis is being written, Belarus has yet to join the Nuclear Suppliers Group or the Missile Technology Control Regime.¹⁹ Kazakhstan likewise became a non nuclear weapons state party to the NPT in February 1994 and signed a similar agreement with the IAEA in July 1994. Although as of late 1999 Kazakhstan is not a member of the Nuclear Suppliers Group or the Missile Technology Control Regime, it has stated its interest in membership and does claim to follow the NSG requirements for export controls.²⁰ Finally Ukraine, originally one of the more reluctant states, is a party to the NPT and a member of the NSG as of December 1994 and April 1996 respectively, as well as being a very recent member of the MTCR.²¹ In each case, these governments were encouraged to transfer their nuclear weapons back to Russia with promises of Western economic and other forms of assistance.

The transfer by the newly independent states of their nuclear weapons back to Russia between 1995 and late 1996 has eliminated one significant possible source of problems, although their remaining nuclear capabilities and resources continue to pose concerns regarding proliferation. However it is Russia with its ageing arsenal of nuclear weapons, decaying infrastructure and ill-

¹⁸Potter, *The Post-Soviet States*, p. 10.

¹⁹Carnegie Endowment Center, *Nuclear Successor States of the Soviet Union*, p. 89.

²⁰*Ibid.*, p. 91.

²¹On Ukrain's entry into the MTCR see *ibid.*, p. 98; and The Arms Control Association, *Background Paper: The Missile Technology Control Regime*, July 1999, available at <<http://www.armscontrol.org/FACTS/mtrc.html>>.

maintained facilities, and its experienced but poorly (if at all) paid personnel, that is critical to the fate of the nonproliferation regime. A gradual change in approach was detectable even during the final years of the Soviet Union, and has been increasingly apparent in more recent Russian policy. Historically, the USSR was opposed to horizontal nuclear proliferation, whether within the Soviet bloc, to officially non-aligned states or to governments hostile to the Soviet Union.²² Slowly and relatively quietly, however, nuclear export decisions became matters of monetary benefit as much as issues of national security policy. During the latter 1980s, it is now believed, the government of the Soviet Union under President Gorbachev began to solicit potential sales of nuclear technology to (then) officially non-nuclear states such as Argentina, India, Israel, Pakistan and South Korea.

The extent and the success of these initiatives are not known in detail, and thus it is not clear that the USSR either materially or in fact violated the terms of the Nonproliferation Treaty. Nonetheless these Soviet initiatives implied that even long time supporters of nonproliferation were, for the right price, prepared to sell nuclear equipment, technology and services to potential proliferators.²³ As the economic woes of the Soviet Union built up, and especially in the context of its search for hard currency, concealed government sales of nuclear weapons, technology and materials were seen to offer a potentially lucrative source of revenue. The financial and political difficulties facing the Russian government under Boris Yeltsin have been equally severe, if not more so; the incentive and the temptation to pursue new nuclear deals for hard currency similarly has been considerable.

2. Preventing Proliferation: Sources, Forms and Responses

A failure to provide adequate economic and social opportunities to its citizens was a major contributing element in the decline and eventual collapse of the credibility of the communist

²²Potter, *The Post-Soviet States*, p. 11.

²³Ibid., p. 12.

regime of the Soviet Union.²⁴ The new Russian government led by Boris Yeltsin inherited many of the economic woes of its Communist predecessors as well as the new problems being created by efforts at achieving a rapid transition to a market economy.²⁵ In these difficult circumstances, the nuclear sector has faced three broad challenges regarding proliferation, the first being the possibility of deliberate government efforts to raise much needed hard currency through new international sales of systems, facilities and technological capabilities. The second challenge is indirect proliferation resulting from government inattention, competing fiscal priorities, and the slow but steady decay of management and infrastructure systems. The last, though by no means the least, challenge is the systematic or opportunistic efforts of the powerful Russian Mafia or other criminal and terrorist groups seeking to gain access to nuclear weapons, facilities and technology - either to sell for profit or else for possible use themselves.

2.1. Deliberate Government Transfers

Deliberate government agreements and nuclear export policies in the Former Soviet Union are the most obvious amongst the variety of challenges facing the NPT regime. Despite formal agreements and treaty obligations, unpredictable changes in policy are possible by governments in Russia or the other FSU states facing a wide variety of pressing domestic social and economic problems.

In Russia, many parliamentarians as well as the Export Control Commission have shown little regard towards NPT commitments or implications when they are faced with potentially lucrative state-to-state nuclear sales. For example, Russian negotiations and agreements with China, Iran, India, Pakistan and

²⁴A useful discussion of the Soviet economic and social problems in the context of Russia's efforts at transition is J. Lowenhardt, *The Reincarnation of Russia: Struggling with the Legacy of Communism, 1990-1994*, Durham, Duke University, 1995.

²⁵For a good analysis of the depth of Russia's difficulties stemming from its inherited economic structure, see C. G. Gaddy, *The Price of the Past: Russia's Struggle with the Legacy of a Militarized Economy*, Washington, D. C., Brookings Institution Press, 1996.

Algeria have been reported.²⁶ In addition, Russian federal spending decisions have sent contradictory messages with respect to nonproliferation issues. On the one hand, in 1998 it was noted that President Boris Yeltsin and Prime Minister Victor Chernomyrdin were quite willing to pass decrees regarding security upgrades for specific nuclear facilities and to accept foreign financial assistance for such programs. Yet, at the same time the Kremlin approved funding for the increased production of plutonium instead of the improvement of basic physical and legal infrastructure and security for poorly maintained nuclear plants.²⁷

Outside of Russia, exports from Kazakhstan and Ukraine have been documented and provide examples of alleged state-to-state sales contributing to horizontal nuclear proliferation. The government of Kazakhstan has documented shipments of uranium only to Russia, yet there have been reports of Kazakhstan's willingness to cooperate with Islamic fundamentalist regimes seeking to develop nuclear programs.²⁸ Ukraine had uranium ore and rare-earth metal bismuth approved for export,²⁹ and the

²⁶The new Export Control Commission (ECC) has tried to sell Iran two nuclear power reactors and provide China with nuclear assistance, including reactors and a uranium enrichment plant. Also the ECC has attempted to develop contracts with Pakistan and Algeria for nuclear power reactors. See Potter, *The Post-Soviet States*, p. 18. For a detailed explanation of specific agreements see Carnegie Endowment Center for International Peace and The Monterey Institute of International Studies, *Nuclear Successor States of the Soviet Union: Nuclear Weapon and Sensitive Export Status Report*, Moscow, Carnegie Endowment, July 1995, p. 56. For more details on sales to India and US efforts to halt such Russian actions see Carnegie Moscow Center, *Nuclear Non-Proliferation: Description of Project*, at <<http://www.carnegie.ru/azphl.htm>>, p. 1. The Iran-Russia arrangements were subject to great controversy in the international community. For a good analysis of this situation see S. Parrish and F. Wehling, *Russian-Iranian Nuclear Cooperation and Russian Missile Exports to Iran*, Center for Nonproliferation Studies, CNS The Moscow Summit: <<http://cns.miis.edu/research/summit/irmiss.htm>>, reports from 25 October 1998.

²⁷L. S. Spector, *Is Russia Violating the Nuclear Non-Proliferation Treaty?*, 20 October 1998, unpublished paper, archived at Carnegie Nuclear Project Director/Department of Energy.

²⁸Carnegie Endowment Center, *Nuclear Successor States of the Soviet Union, 1995 Report*, pp. 56-57. For details on alleged state actions see M. Laumulin, 'Kazakhstan's Nuclear Policy and the Control of Nuclear Weapons' in Quester, *The Nuclear Challenge in Russia*, p. 186.

²⁹Carnegie Endowment Center, *1995 Report*, pp. 56-57.

Ukrainian government has been accused of conducting illicit transfers to China, Iraq and Libya.³⁰ The governments of Ukraine and Belarus, facing national economic crises, are under great domestic political pressure to maintain jobs for the thousands of their citizens who were dependent upon the Soviet military industrial complex for their livelihood. Thus, these governments are faced with the obvious and tempting choice to look for clients interested in buying their nuclear materials.³¹

It remains unclear exactly how many of these proposed sales have been completed. Nonetheless, the existence of such initiatives creates obvious concern regarding the intentions of the Russian and other governments towards upholding their agreements on nonproliferation. Even if these reported sales do not directly violate NPT obligations, they do certainly infringe on related aspects of the nonproliferation regime. Specifically, if Russia or Ukraine exports nuclear materials to states which do not have appropriate safeguards in place, they are in violation of their obligations under the Nuclear Suppliers Group³² as well as the International Atomic Energy Agency³³ and may be subject to penalties. In contrast, Belarus and Kazakhstan theoretically are able to export nuclear materials absent any sort of formal treaty violation so long as they are not yet members of the Nuclear Suppliers Group. It is understandable in these circumstances why international pressure exists for the NSG to extend its membership to these states, since then at least compliance with - and if necessary enforcement of - the nonproliferation regime would be a clearer and more feasible objective.³⁴

³⁰S. Jones, 'The Evolution of the Ukrainian Export Control System: State Building and International Cooperation' in G. K. Bertsch and S. R. Grillot (eds.), *Arms on the Market: Reducing the Risk of Proliferation in the Former Soviet Union*, London, Routledge, 1998, p. 59.

³¹See for example, *ibid.*, p. 60. Also S. R. Grillot, 'Understanding Export Controls in Belarus: The Power of Inducements' in Bertsch/Grillot, *Arms on the Market*, p. 89; and S. W. Garnett, 'The Sources and Conduct of Ukrainian Nuclear Policy: November 1992 to January 1994' in Quester, *The Nuclear Challenge in Russia*, p. 126.

³²Potter, *The Post-Soviet States*, p. 18.

³³Spector, *Is Russia Violating the Nuclear Non-Proliferation Treaty?*, p. 24.

³⁴Potter, *The Post-Soviet States*, p. 30.

International Responses

Reducing or eliminating the threat of state sponsored proliferation has been the highest priority for international organisations dealing with Russia and the FSU states. This objective has been pursued through international treaties such as the Nonproliferation Treaty, START (Strategic Arms Reduction Talks) II, the Missile Technology Control Regime, and the Nuclear Suppliers Group, all of which now constitute aspects of the nonproliferation regime.

For over two decades the core international initiative to prevent deliberate nuclear transfers has been the Nonproliferation Treaty. In 1995 the mandated review conference of the NPT decided to extend the treaty for an indefinite period beyond its normal five-year span, although review conferences would continue.³⁵ Russia, Belarus, Kazakhstan and Ukraine all were members of the NPT by this time and supported the indefinite extension of the treaty.³⁶ The terms of the extension included: measures to improve the review process; an agreement to sign the Nuclear Test Ban Treaty by 1996;³⁷ the establishment of new nuclear free zones; as well as goals for improving inspection and safeguard regimes and reducing global arsenals.³⁸ The NPT also has provided the political and legal framework within which the

³⁵ *1995 Review and Extension Conference of The Parties to the Treaty on the Non-Proliferation of Nuclear Weapons*, 9 May 1995, NPT/CONF 1995/L.6, available at Stimson Center Campaign for the NPT: <<http://www.stimson.org/campaign/npdoc3.htm>>; *Final Document on Extension of the Treaty on the Non-Proliferation of Nuclear Weapons*, 11 May 1995, UNDoc NPT/Cong. 1995/32, 34 I.L.M. 959, 1995.

³⁶ Carnegie Endowment Center, *1998 Report*, pp. 89-98.

³⁷ The NTBT has been signed by 149 states but at the time of writing has been ratified by only 14 states, and has yet to enter into force. See *Comprehensive Nuclear-Test-Ban-Treaty*: <http://www.wagingpeace.org/ctbt_text.html>.

³⁸ *1995 Review and Extension Conference of The Parties to the Treaty on the Non-Proliferation of Nuclear Weapons: Principles and Objectives For Nuclear Non-Proliferation and Disarmament*, 9 May 1995, NPT/CONF.1995/L.5, available at Stimson Center Campaign for NPT: <<http://www.stimson.org/campaign/nptdoc2.htm>>. See also J. Cirincione, 'A New Beginning for the NPT', April 1997, *Disarmament Diplomacy*, available at Stimson Organization: <<http://www.stimson.org/rd-table/prepcom.htm>>.

governments that inherited Soviet nuclear weapons could negotiate terms for the transfer of these weapons to Russia, without appearing simply to be acceding to Russian demands.³⁹

Despite these contributions by the Treaty, firm commitments by these states governments to eliminate the production of new fissile materials and further efforts to reduce nuclear weapons were not achieved by the review and extension conference before it closed.⁴⁰ The regulation and reduction of fissile materials remain matters still largely beyond the scope of the NPT, a disappointing outcome since this area poses some of the most difficult proliferation challenges in the region.

In addition to the terms of the Nonproliferation Treaty, several international accords deal with matters related to the control of nuclear proliferation. Perhaps the most widely known of these is the nuclear disarmament negotiation that has been discussed under the auspices of the Strategic Arms Reduction Talks. The START began in early 1991 as a bilateral US-Soviet initiative. The START I program was not approved until after the dissolution of the USSR; therefore the Lisbon Protocol was introduced in May 1992 to identify Russia, Belarus, Kazakhstan and Ukraine as the successor states to the START treaty, and therefore commit them to eliminate nuclear weapons from their territory.⁴¹ START I was ratified by each of these countries, and by the United States, by February 1994 although the treaty did not enter into force until Ukraine acceded to the Nonproliferation Treaty which it did in December 1994.⁴²

START II originally was intended to advance the START I objectives and create additional nonproliferation and disarmament obligations for the newly independent states. The three main elements of this treaty are: clarification of provisions related to Russian strategic nuclear forces modernisation; Russias

³⁹Cirincione, *A New Beginning*, p. 1.

⁴⁰J. Dhanapala, 'A Strengthened Review Process for the NPT', *Fordham International Law Journal*, Vol. 20, 1997, p. 1536.

⁴¹Wolosky et al., *START, START II, and Ownership of Nuclear Weapons*, p. 582.

⁴²S. Parrish, 'START II Ratification: A Chronology', *CNS The Moscow Summit*: <<http://cns.miiis.edu/research/summit/s2chrono.htm>>, report from 7 October 1998.

commitment to the Anti-Ballistic Missile Treaty⁴³ and conditions regarding US withdrawal from the ABM treaty; and finally, a bilateral agreement for deeper reductions in the American and Russian strategic nuclear arsenals.⁴⁴ While the treaty passed in the U.S. Senate by a vote of 87 to 4, START II has yet to be ratified by any of the post-Soviet states. After NATO's intervention in Kosovo, and with its continuing domestic economic crisis as well as its more recent involvement in military operations against Chechnya, ratification by the communist-dominated Russian Duma (Parliament) has become even more problematic.⁴⁵ Still, there is some hope that continued western financial assistance may encourage observance of the terms of the treaty by Russia even without formal ratification.⁴⁶ This precedent was established through START I, when reduction terms were introduced in practice before the agreement had formally passed through Russian legislation.⁴⁷

The Nuclear Suppliers Group and the Missile Technology Control Regime are narrower accords dealing with particular aspects of the nuclear proliferation threat. The MTCR sets out regulations designed to control the spread of sophisticated missile technology to non nuclear weapons states that are attempting to obtain or develop delivery systems (that is, missiles).⁴⁸ The NSG was established in the 1980s to help harmonise nuclear export laws and policies among the nuclear weapons states. According to the Groups terms of agreement, nuclear materials are to be sold only

⁴³See Nester, *International Relations*, p. 268.

⁴⁴N. Sokov, 'Current Prospects for START II Ratification and START III Talks', *CNS The Moscow Summit*: <<http://cns.miis.edu/research/summit/sokov.htm>>, reports from 7 October 1998.

⁴⁵A. Horelick, *The Clinton-Yeltsin Summit Against a Background of Economic and Political Crisis*, Carnegie Moscow Center, Press Releases: <<http://www.carnegie.ru/pr31aug.htm>>, report from 11 October 1998. More recently in the context of the Kosovo intervention, see R. E. Powaski, 'Russia: The Nuclear Menace Within', *Current History*, October 1999, p. 340.

⁴⁶See for example J. W. R. Lepingwell, 'Is START Stalling?' in Quester, *The Nuclear Challenge in Russia*, pp. 115 - 118.

⁴⁷Ibid.

⁴⁸Davis, *Nuclear Proliferation and Nonproliferation Policy*, p. 124.

on a restricted basis by members of [the] NSG.⁴⁹ Russia and most recently Ukraine are members of this group.

These international efforts do not constitute by themselves the entire strength behind the nonproliferation regime; rather, they operate in conjunction with a variety of bilateral efforts that have been initiated mostly by the United States.⁵⁰ The US-FSU programs target all three of the potential sources and forms of nuclear proliferation, although the most widely known programs are those aimed principally at state sponsored proliferation.

The majority of the bilateral programs limit fissile production and use and encourage the dispos[al] of excess fissile material.⁵¹ Two of the most notable US-Russian programs are the Highly Enriched Uranium (HEU) Purchase Agreement and the Soviet Nuclear Threat Reduction Program. The HEU Purchase Agreement was established in 1993; according to its terms the US will purchase 500 metric tonnes of HEU and plutonium over a twenty-year period. These materials, for which the US paid a \$100 million advance to the Russian government, will be used as civilian reactor fuel.⁵² The Soviet Nuclear Threat Reduction Program (also called the Comprehensive Threat Reduction Program or more commonly the Nunn-Lugar Program)⁵³ signed in 1991 aims to eliminate Weapons of Mass Destruction from Ukraine, Uzbekistan, Belarus, Kazakhstan and Russia. This program provided almost \$3 billion through the US Defense Department to achieve the main

⁴⁹Ibid., p. 112.

⁵⁰Some of the other states and international organisations that have initiated programs to deal with the reduction of nuclear materials in the FSU include Japan, Canada, France, Germany, Italy, and the European Union. See Carnegie Endowment Center, *1995 Report*, pp. 42-43.

⁵¹K. Luongo, 'The Evolving US-Russian Cooperative Nuclear Security Relationship', *Proceedings of the USPID VII International Castiglione Conference on Nuclear and Conventional Disarmament: Progress or Stalemate?*: <<http://twilight.dsi.unimi.it/~USPID/Cast97/Atti/luongo.html>>, pp. 2-3.

⁵²NASA, *Fact Sheet: US-Russia Nuclear Cooperation*, available at <<http://www.usia.gov/abtusia/posts/RS1/wwwhnuk.html>>, p. 4.

⁵³United States Congress, *The Soviet Nuclear Threat Reduction Act of 1991*.

goals of destruction and decommissioning of former Soviet nuclear weapons.⁵⁴

While these programs have had positive effects⁵⁵, not all such initiatives have had even limited success. There are a number of programs, supported by western financial assistance, which have either been cancelled or for which the negotiations have been suspended. Among the programs that have not been started are Fissile Material (I): Transparency of Excess Material, and Fissile Material (IV): Mutual Reciprocal Inspections and Dismantlement Facilities.⁵⁶ Two main reasons have been cited for the halt in negotiations. First, the governments of the FSU states are suspicious about American motives and thus are not willing to release confidential information as required under these programs. Second, the proposed funding for the projects is subject to American Congressional politics and often is allocated from existing Defense Department budgets and projects.⁵⁷ Together, these added complications could cause negotiations to break down, or programs to be cancelled or given lower priority. As a result, opportunities to reinforce the nonproliferation regime are lost.

2.2. Nuclear Management and Infrastructure: Decay and Neglect

Other than deliberate government transfers, a second challenge to compliance with the nonproliferation regime in the post-Soviet states is an indirect one: it is a consequence of the

⁵⁴Ibid. Some of the other bilateral initiatives that are proceeding in this area include: Plutonium Disposition; Plutonium Production Reactor Conversion; Fissile Material (III): Cessation of Production of Plutonium at the Zhelesnogorsk and Seversk Reactors; Fissile Material (V): Fissile Material Storage Facility (Mayak). For more details on these programs see Carnegie Endowment Center, *1998 Report*, pp. 25-34.

⁵⁵For example, a September 1998 agreement required Russia (and the US) to remove 50 tonnes of plutonium from its military stockpile to use as fuel in nuclear reactors; while US DoD reports indicate that Russia has deactivated 1,538 nuclear warheads, and destroyed 254 ICBMs, 30 SLBMs and 40 heavy bombers with help from Nunn-Lugar funds. See Powaski, *Russia: The Nuclear Menace Within*, p. 343.

⁵⁶Carnegie Endowment Center, *1998 Report*, pp. 25-34.

⁵⁷North Atlantic Assembly, *Scientific and Technical Committee: NAA Report*, p. 11.

absence of a sound legal and political infrastructure in the FSU. In particular, it stems from the lack of efficient accounting, safety and control mechanisms for nuclear facilities and nuclear weapons grade materials and the absence of any reliable government body to monitor and enforce these mechanisms. Combined with the brain drain from the nuclear scientific sector, these problems raise the risk of proliferation through neglect.

The political commitment to meet international standards and to impose the necessary safeguards, upgrades, export policy controls and accounting systems for nuclear facilities exists, at least on paper, in each of the four post-Soviet states being considered here.⁵⁸ Russia and Belarus are further ahead in meeting international standards, while Ukraine and Kazakhstan lag behind in the development of adequate policies. However, the reality of the situation is that all of these states governments currently lack the legal and political infrastructure, as well as the financial means, to implement the requirements of the NPT regime even should they desire to do so.

The lack of a sound legal and regulatory infrastructure especially is detrimental to the enforcement of adequate export control policies as required by several treaties and organisations within the NPT regime, such as the International Atomic Energy Agency safeguard requirements. Other than through Moscow, the states of the Former Soviet Union did not have a comprehensive and coherent system of export controls. Thus after the collapse of communism, these states were left with the remnants of the centralised Soviet administrative and legal structure, and no independent political bodies with the experience and expertise to implement, or even to formulate, nuclear export laws.⁵⁹ Since then some attempts have been made to introduce coherent sets of export

⁵⁸ Belarus, Kazakhstan, Ukraine and Russia have expressed their political commitment to nonproliferation in several different treaties and international forums. For a good discussion about this commitment see W. C. Potter et al, 'Interview: Nuclear Security in Kazakhstan & Ukraine: An Interview with Vladimir Shkolnik and Nicolai Steinberg', *The Nonproliferation Review*, Vol. 2, 1994, available at <<http://cns.miis.edu/pubs/npr/nskzk21.htm>>.

⁵⁹ *Ibid.*

laws. For the most part, however, they have been unsuccessful.⁶⁰ For example, in Ukraine and Kazakhstan government bodies have been created to consider this subject, yet there still is no formal legal structure in place to regulate and enforce export laws.⁶¹

In all of the post-Soviet states, new export policies have been established through a series of ad-hoc and occasionally even contradictory decrees, as opposed to being developed by systematic parliamentary legislation. These decrees do not encompass an entire area of law and do not have the same force as legislation. The decrees are subject to change without notice, based on the political vagaries of the day, and government bodies are left without clear guidelines setting out their tasks and priorities to implement the existing nuclear export laws.⁶²

The broad economic and political transition to privatisation in these countries has made this issue more rather than less problematic, as it has reduced state control. In some instances, the administration of export regulations has been placed instead into the hands of corporations which are anxious to establish international trade and which may be unaware of their legal responsibilities as exporters - due at least in part to the frequently changing decrees.⁶³

Finally, even if formal legal oversight or direction was to be established through legislation and this remains only a distant prospect these states do not possess the properly trained personnel needed to implement and enforce such legislation. Both adequate training and necessary funding alike are lacking to give physical

⁶⁰It is worth noting that Russia has developed a relatively sophisticated export control system in comparison to the other states of the former Soviet Union. While Belarus still lags behind in this area, its attempts at export policy are much more notable than its post-Soviet counterparts. See M. Beck, 'Russias Rationale for Developing Export Policies' in Bertsch/Grillot, *Arms on the Market*, p. 31. Also, Vyachaslau Paznyak, 'Belarusian Denuclearization Policy and the Control of Nuclear Weapons' in Quester, *The Nuclear Challenge in Russia*, pp. 153 and 173.

⁶¹Potter et al, *Interview: Nuclear Security*, p. 2.

⁶²*Ibid*; also Potter, *The Post-Soviet States*, p. 18; and Jones, *Ukrainian Export Control System*, p. 71.

⁶³Potter, *The Post-Soviet States*, p. 17; and Jones, *Ukrainian Export Control System*, p. 59.

force to monitor and support any such export regulations. It is clear that an efficient and effective legal system and structure for export control, therefore, continues to be some distance away from being a realistic goal.

A second layer of infrastructure weakness beneath this legal and regulatory context is an inadequate accounting system and nuclear safety system throughout the FSU. These types of safeguards virtually did not exist in the Soviet Union, and consequently all of the newly independent states are far behind international standards and expectations.⁶⁴

An accounting system for nuclear grade materials, able to monitor and track all existing stocks accurately, is critical to ensuring that nonproliferation goals are met; however, this remains a difficult objective to attain. The exact number of weapons and related nuclear resources in the whole of the Former Soviet Union still is unknown to western states, and quite probably is unknown even to Russian officials. Moscow in particular has been reluctant to disclose even as much as they do possess of a detailed current accounting of their nuclear arsenal, since they remain suspicious of western again especially US - motives in obtaining such sensitive military data.⁶⁵

Apart from such reluctance to reveal previously secret information, there simply are no experts in the FSU countries who are versed sufficiently well in the techniques of nuclear accounting. Thus to meet NPT requirements, all government specialists in this area require the appropriate training which must be arranged and paid for by the West. Even Kazakhstan, which previously had a national system of accounting, is no further ahead since their system is entirely different from international standards.⁶⁶

The Chernobyl incident startled many governments into realising the importance and urgency of implementing nuclear

⁶⁴Potter et al, *Interview: Nuclear Security*, p. 7.

⁶⁵North Atlantic Assembly, *Scientific and Technical Committee: NAA Report*, p. 11; and B. Blair, 'Russian Control of Nuclear Weapons' in Quester, *The Nuclear Challenge in Russia*, pp. 6970.

⁶⁶Laumulin, *Kazakhstan's Nuclear Policy*, p. 208; Potter et al, *Interview: Nuclear Security*, p. 13.

safeguards and legal regulations in the FSU.⁶⁷ Belarus, however, is the only FSU government that has, on their own initiative, implemented new controls over safety at military facilities as well as the safety of nuclear weapons during exercise, relocations and withdrawal.⁶⁸ Ukraine, in which state the ill-fated Chernobyl facility is situated, and Kazakhstan do not exercise any safety measures over their nuclear facilities except for those which have been developed through western assistance.⁶⁹

A third infrastructure issue which is proving very difficult to manage and which poses potentially significant proliferation concerns is the nuclear brain drain. The FSU has experienced a steady exodus of its researchers and other technology experts as they seek or are offered financially attractive positions elsewhere, including in rogue states such as Iraq or North Korea. According to the North Atlantic Assembly the basic problem is that in the nuclear weapons field alone between 10,000 and 15,000 experts have access to classified information and 2000 to 3000 hold vital secrets.⁷⁰ The movement of all of these experts is impossible to track, let alone regulate, while incentives for them to remain in the FSU are very few so long as their pay and living conditions continue to be poor and indeed deteriorating.

International Responses

The international and bilateral responses to these infrastructure problems have been more muted and certainly less widely considered than the responses to potential state sponsored proliferation. However, the increasing concern over nuclear safety issues has resulted in several recent multilateral and bilateral efforts aimed at improved training, and assistance in building an adequate legal and regulatory framework in the FSU. Bilateral agreements allow close monitoring and country specific goals to be achieved,

⁶⁷See A. Ioirysh and Y. Rogoshin, 'Chernobyl, Dimitrograd, Where Else?', *Trud*, 22 Feb. 1996, *Frontline: Nuclear Legislation History*: <<http://www.pbs.org/wgbh/pages/frontline/shows/nukes/readings/nuclearleg.html>>.

⁶⁸Paznyak, *Belarusian Denuclearization Policy*, p. 170.

⁶⁹Ibid.

⁷⁰North Atlantic Assembly, *Scientific and Technical Committee: NAA Report*, p. 6.

while multilateral efforts allow individual states to pool resources and pursue policies somewhat more distinct from narrower national interests.⁷¹

The International Atomic Energy Agency has supported developing new infrastructure programs since the collapse of the Soviet Union. This regulatory body provides assistance and advice with respect to nuclear reactor safety mechanisms, and nuclear safety issues more generally.⁷² Outside of the IAEA, the most notable multilateral efforts have been established by the G-7. These efforts include the Nuclear Safety Fund (NSF) and the Chernobyl Shelter Implementation Project, both of which are administered by the European Bank for Reconstruction and Development.⁷³

The Nuclear Safety Fund was created in 1992 with the purpose of improving safety measures in nuclear reactor plants. In some cases upgrades and the reconstruction of ageing nuclear plants and equipment, and better safety regulations, were to be implemented; in other cases the dismantling and closure of inefficient and unsafe reactors was necessary.⁷⁴ The Chernobyl Shelter Implementation Project began in December 1997 to transform the existing Chernobyl sarcophagus into a safe and environmentally stable system.⁷⁵ The European Bank administers the funds, contracts and regulations for this program.

In addition to these programs, two further infrastructure projects have been supported by the European Union and the G-24. The European Union created the Technical Assistance to the CIS, International Science and Technology Centres in Kiev and Moscow, and a credit line open to Russia and Ukraine among other states. All of these European initiatives have sought to promote an improved and more stable bureaucratic, economic and legal infrastructure through the provision of on-site assistance, training,

⁷¹Ibid., p. 18.

⁷²Ibid.

⁷³European Bank for Reconstruction and Development, *Nuclear Safety*, available at <<http://www.ebrd.com/english/opera/nucsafe/main.htm>>.

⁷⁴EBRD, *Nuclear Safety*, p. 1.

⁷⁵Ibid., p. 4.

safety studies and some equipment.⁷⁶ The Technology Centres focus specifically on supporting training and employment opportunities for nuclear scientists and experts, to help alleviate the causes of the technological brain drain out of the FSU.⁷⁷

The G-24 Working Group on Nuclear Safety includes states and international organisations such as the European Bank, the World Bank, and the IAEA. The Group collects funds from all its members, while individual organisations are allocated different tasks. For example, the IAEA advises the governments of the FSU states and the donor states on technical aspects of nuclear safety, while the European Union acts as the coordinator for all the involved organisations.⁷⁸

Bilateral state initiatives and aid programs often target specific infrastructure tasks such as training, organisational restructuring, management in accounting, nuclear safety, and experts.⁷⁹ Here again, the US funded Nunn-Lugar initiative has been of some value in assisting the relatively new governments of the FSU in their efforts to achieve nonproliferation goals.⁸⁰ The Nunn-Lugar agreement established several operations in Ukraine, Russia, Belarus and Kazakhstan.⁸¹

⁷⁶North Atlantic Assembly, *Scientific and Technical Committee: NAA Report*, p. 18.

⁷⁷*Ibid.*, p. 10. The four main goals of the International Science and Technology Centers are: to provide experts with a chance to redirect their talents towards peaceful activities; to assist in the transformation to a market based economy and focus on civil needs; to provide R&D support in areas of environmental protection, energy production and nuclear safety; and to integrate Russian scientists into the wider international scientific community.

⁷⁸*Ibid.*, p. 19.

⁷⁹Some of the states that have sponsored bilateral agreements with the FSU include Norway, Finland, Sweden, Japan, Germany, Canada, Italy and the United States. For more details on the specific goals and funds allocated to these projects see Carnegie Endowment Center, *1995 Report*, pp. 42-43.

⁸⁰J. Beard, 'A New Legal Regime for Bilateral Assistance Programs: International Agreements Governing the Nunn-Lugar Demilitarization Program in the FSU', *Virginia Journal of International Law*, Vol. 35, 1995, pp. 895-896.

⁸¹*Ibid.*, p. 923. The Nunn-Lugar agreement has umbrella agreements in each of the four post-Soviet States. These in turn include implementing agreements with specific legal regimes common to all states, namely, specific

These multilateral and bilateral efforts have been the target at times of harsh criticisms concerning their management as well as their motives. Primarily, the accusations directed at these groups are that the funds promised are never received, or else are received but not then put to use. A large percentage of the funds is alleged to be diverted into the hands (or pockets) of individuals, whether in the Russian Mafia or in corrupt government or business circles. Also, rather than achieving progress on developing useful new nuclear management infrastructure, these international bodies are accused of simply or cynically creating new business opportunities for western companies out of the problems in the FSU. A common response of western business investors, however, is that these companies as well as the international organisations require a formal, and working, legal and regulatory framework prior to helping to build a nuclear safety infrastructure. Thus, the accomplishment of more readily visible signs of progress can come only after the development of this less obvious (since less concrete) regulatory framework. The critics, it is said, are looking for the wrong signs of achievement.

2.3. Criminal and Terrorist Threats of Proliferation

Nuclear proliferation through criminal and terrorist activities is an increasing threat to the NPT regime. This relatively new challenge differs substantially from proliferation by state sponsored initiatives or as a result of an inadequate political and legal infrastructure, although in some cases it may be associated with the breakdown of the old Soviet military and political system. Criminal related proliferation is more difficult to define, let alone identify and counter, since it occurs through many different and usually clandestine channels. Potential sellers of nuclear capabilities and materials in the FSU may include corrupt government and military officials, organised crime, corporations, and nuclear facility employees. Buyers include rogue states, terrorist organisations, and individuals. Due to the deliberately

safeguards and restrictions to implement the programs. Of particular relevance to infrastructure, the Nunn-Lugar programs deal with nuclear accounting and control of nuclear materials; export control; and construction of facilities.

obscure identity of these actors, it is difficult to find an appropriate treaty remedy or inter-state agreement that can deal effectively with criminal sponsored nuclear proliferation.

The current political, economic and legal situation in the FSU is volatile and therefore is particularly inviting to criminal activity, including in nuclear materials and nuclear policy. The lack of an adequate infrastructure, safeguards, laws, and political will, combined with uncertainty even regarding the exact number of weapons, leaves nuclear crime hard to anticipate, to monitor, or to prevent.⁸²

The majority of the cases (and alleged cases) of illegal transfers of nuclear materials identified thus far have been reported rather than systematically documented and dealt with legally. The few documented cases, and western scientific analyses of the discovered materials, do point to the FSU as the main source of nuclear materials.⁸³ In addition, there are a large number of smuggling incidents which involve Low Enriched Uranium and dual-use materials, which do not directly violate the Nonproliferation Treaty since they are not weapons grade materials by the definition given in the treaty. These 'diversions, [however,] may be indicative of the ease with which large quantities of sensitive materials can be stolen and exported'⁸⁴

The reported cases that deal with significant amounts of nuclear grade materials share some traits regarding actors, trade routes and discovery of materials.⁸⁵ For the most part, the proliferators were employees of a nuclear facility, with access (easily accessible or forced access) to nuclear grade materials. Often there was no specific buyer yet arranged at the end of the transaction. The materials were found either by accident in the FSU

⁸²Blair, *Russian Control of Nuclear Weapons*, pp. 7071.

⁸³W. Mirsky, 'The Link Between Russian Organized Crime and Nuclear Weapons Proliferation: Fighting Crime and Ensuring International Security', *University of Pennsylvania Journal of International Business Law*, Vol. 16, 1995, p. 757. Also North Atlantic Assembly, *Scientific and Technical Committee: NAA Report*, p. 6.

⁸⁴Carnegie Endowment Center, *1998 Report*, p. 105.

⁸⁵The seven significant cases reported and documented by the Carnegie Institute include: Podolsk; Andreeva Guba; Tengen; Landshut; Sevmorput; Munich; and Prague. *Ibid*, pp. 106110.

or whilst in transit via a European route during a police or customs sting operation.⁸⁶ However, more professional criminals likely would use a far less readily detectable route directly to the south of the newly independent states, where many of the potential recipient states also are located.⁸⁷

Facing dire economic conditions and - in the current context of legal and political uncertainty with only limited fear of severe penalties, struggling corporations in the FSU states may be tempted to enter the black market with high-technology and nuclear materials. An example which came to light in the summer of 1998 involved nine companies being investigated by the Russian government in connection with allegations of nuclear smuggling to Libya, Iran and Korea, and evading existing Russian nuclear export laws. The American government responded by imposing trade sanctions against seven of these companies.⁸⁸

Corrupt government officials and the Russian Mafia, working in conjunction with rogue states, pose a proliferation threat which has drawn attention from legal and political bodies in several jurisdictions.⁸⁹ There have been allegations, and prosecution in a few cases, of government bodies in the FSU which appear to have been willing to cooperate in the illegal transfer of nuclear grade materials beyond national borders. These include the Interior Ministry and the State Customs Committee in Russia, and the Ministry of Foreign Economic Relations in Ukraine.⁹⁰ Organised

⁸⁶Ibid.

⁸⁷Ibid., p. 105.

⁸⁸S. Parrish and F. Wehling, 'Institutions Suspected by the Russian Government of Violating Export Control Legislation, CNS The Moscow Summit', available at <<http://cns.miis.edu/research/summit/9firms.htm>>, reports from 25 October 1998. The nine companies under investigation included: Glaskosmos; the INOR Scientific Production Center; the Graft State Scientific Research Center; the Polyus Scientific Research Institute; the Tikhomirov Instrument-Building State Research Institute; the Komintern Plant; the MOSO company; Evropalas 2000; and the Baltic State Technical University. It is worth mentioning that several other companies which have been accused of similar criminal actions are not included in this investigation.

⁸⁹R. Tanter, *Rogue Regimes: Terrorism and Proliferation*, New York, St. Martins Press, 1998, p. 73.

⁹⁰Beck, *Russia's Rationale for Developing Export Policies*, p. 34; and Jones, *Ukrainian Export Control System*, p. 59 respectively. In Ukraine, several

crime in the FSU also has the power to evade laws, bribe government officials and attract nuclear experts to fulfil nuclear employment contracts in rogue states and organisations.⁹¹

International Responses

Combating criminal nuclear proliferation has been a formidable task for the international community. Several bilateral efforts have been geared towards this task, including elements of the previously highlighted Nunn-Lugar program. In the United States, the CIA and the FBI also have both become involved under the US National Security Act. Thus far, this exercise of extraterritorial jurisdiction has not been challenged by other states and interested parties.⁹² As noted earlier in the case of Russian businesses, Washington also has implemented unilateral sanctions against companies and rogue states believed or proven to be involved in activities prohibited by the nonproliferation regime.⁹³

Significant problems still remain, however, for efforts to coordinate international responses to the danger of criminal nuclear proliferation. Most of the international efforts to combat criminal proliferation have not been endorsed in any international treaty or as a recognised international norm, even though a 1996 International Court of Justice advisory opinion recognised nuclear weapons proliferation as an international crime in armed conflict and humanitarian law.⁹⁴ Some of the legal discussions preceding the 1995 NPT review conference suggested that international punishment and universal jurisdiction be included in the revisions to the treaty, and that these be broadened to include criminals and

employees of this government body were arrested for taking bribes and for issuing licences to export strategic raw material.

⁹¹For a discussion of US documents that deal with proliferation, the Russian Mafia, and its powers see Mirsky, *Russian Organized Crime and Nuclear Weapons Proliferation*, pp. 763 and 765; and S. U. Asnis, 'Controlling the Russian Mafia: Russian Legal Confusion and US Jurisdictional Power-Play', *Connecticut Journal of International Law*, Vol. 11, 1996, p. 299.

⁹²Asnis, *Controlling the Russian Mafia*, p. 316.

⁹³Tanter, *Rogue Regimes*, p. 85.

⁹⁴*Legality of the Threat or Use of Nuclear Weapons*, 35 I.L.M. 809 (July 8, 1996).

even migratory nuclear experts who violated the NPT regime.⁹⁵ Another suggestion was that such crimes be treated as international terrorism, which thus would fall under the scope and mandate of the Geneva Conventions.⁹⁶ As yet, however, these suggestions have not been incorporated in any formal measures intended to ensure compliance with the nonproliferation regime.

Against this generally dismal background, the G-8 and the United Nations have undertaken some potentially useful initiatives. The G-8 has developed an information-sharing program to help combat nuclear smuggling.⁹⁷ They also have introduced a draft treaty dealing with nuclear terrorism, which would extend prosecution to any natural person'[who] manufactures, possesses, transfers or acquires such a device with the intent to detonate it.⁹⁸ The United Nations has used the IAEA to attempt to monitor the development of nuclear arsenals and facilities in Iraq, and the Security Council has recognised nuclear proliferators as a threat to international security.⁹⁹ To what degree the often-divided Security Council will be able or willing to use its authority or its power political, economic or military to enforce the NPT regime remains to be seen. The example of Iraq gives a mixed signal at best, as Council members have been deeply divided over UN policies and actions against the Iraqi regime. At least, the precedent now exists as an option for attempting to deter potential proliferators.¹⁰⁰

3. Problems, Prospects and No Easy Solutions

The variety and the complexity of the challenges facing supporters of nonproliferation when looking at the Former Soviet

⁹⁵Mirsky, *Russian Organized Crime and Nuclear Weapons Proliferation*, p. 766; and A. Treiger, 'Plugging the Russian Brain Drain: Criminalizing Nuclear-Expertise Proliferation', *Georgia Law Journal*, Vol. 8, 1993, p. 241.

⁹⁶Mirsky, *Russian Organized Crime*, p. 766.

⁹⁷NASA, *Fact Sheet: US-Russia Nuclear Cooperation*, p. 2.

⁹⁸G. Bunn, 'Physical Protection of Nuclear Materials: Strengthening Global Norms' available at <<http://www.iaea.or.at/worldatom/infosource/bulletin/bull399/bunn.html>>, p. 2.

⁹⁹See for example *Security Council Resolution 687* (1991), S/RES/687 (1991) available at <<http://www.iaea.or.at/worldatom.glance/legal/uns687.html>>, p. 4, Par. 6 (iii).

¹⁰⁰Davis, *Nuclear Proliferation and Nonproliferation Policy*, p. 127.

Union offer little cause for comfort. The task of managing, curbing and hopefully preventing nuclear proliferation is made still harder by the broader context of political, economic, social, and legal change and turmoil in Russia and the former Soviet republics of Ukraine, Belarus and Kazakhstan. In many cases, the causes or reasons behind potential proliferation lie not in traditional military security policies or ambitions but in this general uncertainty resulting from the collapse of empire. Still, it is necessary to find policies and programs that will be able to address the threat of nuclear proliferation whether the latter arises in the form of deliberate state choices, through neglect and decay of infrastructure, or by criminal or terrorist activity.

The analysis of the possible forms and sources of proliferation, and of responses to these sources, does offer some conclusions and suggestions worth highlighting. First, it is apparent that formal treaties and institutional memberships are helpful measures for managing state policy choices. Reports and accusations of breaches of their commitments under the NPT, MTCR and/or NSG agreements have been levelled at each of the four former Soviet states governments, and it is clear that breaches have occurred of the spirit, if not also the letter, of these agreements. Still, even Russia despite the Dumas hostility towards the West in the face of NATO enlargement and the recent campaign against President Milosevics ethnic cleansing in Kosovo has been careful to avoid open defiance of NPT prohibitions.

The threat of punishment for breaching the terms of these accords, however, needs to be balanced by the provision of rewards, incentives, and compromises to encourage these governments to accept and abide by the spirit of the nonproliferation regime. The Nunn-Lugar program was renewed by Russia and the United States in June 1999, with President Clinton requesting US\$2.8 billion in funding from Congress for the next seven years of the scheme (through to 2006).¹⁰¹ The Nunn-Lugar initiative contains elements dealing with all three of the forms of proliferation reviewed here giving the Russian government support in decommissioning weapons systems; in maintaining and safeguarding facilities; and in employing otherwise poorly paid nuclear technicians and scientists.

¹⁰¹See Powaski, *Russia: the Nuclear Menace Within*, p.342.

What is needed in the first place to make such initiatives more successful aside from more money, since while a large sum the \$2.8 billion requested for the Nunn-Lugar program is relatively little when divided across seven years and between four states is the enhancement of trust on all sides. The development of a national ballistic missile defence system by the United States (a son of SDI) inevitably will exacerbate the suspicions of American motives in the Russian Duma and military, whatever concessions Russian President Yeltsin is able to claim to have received. Further NATO enlargement, once Hungary, Poland and the Czech Republic have been more fully integrated, likewise would have a significant negative effect on pro-western reform voices in Russia and Belarus, and even in the less anti-western governments of Ukraine and Kazakhstan. While American national missile defence and NATO enlargement may have quite reasonable and modest motives, it is worth giving very serious consideration to their possible indirect consequences since such policies do not occur in an international political vacuum. For example, a missile defence program the ostensible goal of which is to reduce threats of ballistic missile attack against the United States by rogue states and terrorist groups instead may raise the profile of such threats by undermining the nonproliferation regime in the Former Soviet Union. NATO enlargement, especially any second round of such enlargement, combined with that organisations reluctance to alter its Cold War era nuclear strategy (that of not declaring a No First Use policy regarding nuclear weapons) likely would drive Russia towards redeployment of nuclear weapons into any former Soviet republic that could be persuaded to accept them. Belarus already is believed to be discussing such cooperation with Moscow.¹⁰²

Instead of promoting such security measures, western states might be better advised to take a wider view of security, more akin to the mutual security conception promoted in the mid-1980s by then-Soviet leader Mikhail Gorbachev. NATO enlargement should be limited to its present 19-member level; instead, NATOs Partnership for Peace program offers some level of security integration to other eastern and central European states seeking links to the west, and avoids unnecessary provocation of anti-

¹⁰²C. Moltz, *Challenges Posed By Russia and the NIS to Existing Nonproliferation Regimes*, CNS Occasional Papers #3, Center for Nonproliferation Studies, 1999, p. 2. Available at <<http://cns.miis.edu/pubs/opapers/op3/moltz.htm>>.

Western elements in Russia. The 1997 compromise reached between Clinton and Yeltsin on theater nuclear defence systems might save the critical Anti-Ballistic Missile treaty, but a better solution could be closer cooperation with Russia and perhaps the other three former nuclear states in developing missile defence technology research projects. This would be seen in Moscow as less of a challenge to Russian security, and it also could be designed as part of the effort to strengthen nuclear management and control systems throughout the Former Soviet Union. As well, it would employ many of the unemployed or unpaid scientists and technicians who otherwise could be tempted away into the service of other states or groups. Like the 1997 compromise package, of course, there would be strong opposition from hardline Republicans in the American Congress, particularly Senator Jesse Helms. Still, the existence of the Nunn-Lugar funding suggests that there is some room for movement of similar measures through Congress. Russias military intervention against Chechnya could be another obstacle to negotiating such cooperation, but high level talks on nuclear cooperation could give Western criticism of the Chechen campaign more credence in Moscow.

What does appear to be clear from the analysis is that state sponsored nuclear proliferation, although an important concern, may be less of a threat to the nonproliferation regime than decay and disintegration of management, control and safeguard infrastructure. The worse that this decay becomes, the greater the chances of nuclear mishap (or local and regional disaster) and the more likely or easy for criminal proliferation to occur. Political agreements can be negotiated to minimise the incentives of governments to skirt the boundaries of their treaty commitments, and to maximise their incentives to abide by such terms in spirit and in strict letter. Rebuilding bureaucratic, economic, technical, legal and other management infrastructure for all nuclear related facilities throughout Russia, Ukraine, Kazakhstan and Belarus is a daunting task that will soak up funds, time, and personnel. It will require financial, technical, military and professional educational cooperation over at least a decade. So far, nothing on this scale is on the political agenda, only smaller packages of assistance which Russian officials note fall well below the required levels for long term success.

Formal international treaties are high profile events, while infrastructure building and related programs garner less attention, are incremental in progress, and are far harder to show and sell to a news-hungry media or public. In the end, however and assuming that relations between East and West, Russia and the FSU and America and NATO states do not for any reason turn sour it will be at this lower profile level that the nonproliferation regime will be maintained and expanded, or undermined.