Negligence and Nuclear Nonproliferation: Eliminating the Current Liability Barrier to Bilateral U.S.-Russian Nonproliferation Assistance Programs

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NOTES

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INTRODUCTION

The September 11, 2001, terrorist attacks demonstrated in horrifying fashion the serious threat posed by international organizations that seek to cause mass destruction in the United States. Several confirmed cases of terrorist groups attempting to purchase or steal nuclear material have raised the chilling prospect of an unconventional attack on U.S. soil that would result in unparalleled destruction.\(^1\) Because of the porous border and the wide variety of methods that terrorist groups could use to construct, deliver, and detonate a nuclear device in the United States,\(^2\) supply-side controls aimed at preventing terrorists from acquiring nuclear material and the knowledge of how to construct nuclear weapons in the first place are likely to be the most effective means of preventing nuclear terrorism.\(^3\)

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1. See infra notes 32-33, 49-50 and accompanying text.
2. Matthew Bunn of the Belfer Center for International Affairs at Harvard University writes that
   
   [i]f stolen or built abroad, a nuclear bomb might be delivered to the United States, intact or in pieces, by ship or aircraft or truck, or the materials could be smuggled in and the bomb constructed at the site of its intended use. Intercepting a smuggled nuclear weapon or the materials for one at the U.S. border would not be easy. The length of the border, the diversity of means of transport, and the ease of shielding the radiation from plutonium or highly enriched uranium all operate in favor of the terrorists. The huge volume of drugs successfully smuggled into this country provides an alarming reference point.


3. Charles Curtis, president of the Nuclear Threat Initiative, notes that
   
   the most effective, and least expensive way to prevent nuclear terrorism is to secure weapons and materials at the source. Acquiring weapons and materials is the hardest step for the terrorists to take, and the easiest step for us to stop....

Every subsequent step in the process is easier for the terrorists to take and harder for us to stop.

Unfortunately, the collapse of the Soviet Union in the early 1990s has given terrorist groups new opportunities to acquire nuclear material and know-how. The end of the Cold War signaled the end of the East-West confrontation that was largely defined by an extensive nuclear arms race, leaving both the United States and Russia with extensive stockpiles of nuclear weapons and the nuclear material and infrastructure to support their massive military-industrial complexes. In Russia, the economic difficulty that has resulted from the end of the Soviet economic system and the transition to a more liberalized economy has left the remnant nuclear infrastructure insecure and in shambles. Two problems in particular are of serious concern given their potential consequences for U.S. national security. First, there is a risk that terrorist organizations could acquire assembled warheads and weapons-grade fissile material that are currently stored in facilities with inadequately funded security systems. Second, the nuclear

4. See infra Part I.A. See generally ALLISON ET AL., supra note 2, at 20-48 (discussing Russia's insecure nuclear facilities).

5. Between 1945 and 1991, each U.S. presidential administration attempted to maintain military superiority over the Soviet Union by constantly expanding and diversifying the nation's nuclear arsenal. See ROBBIN F. LAIRD, THE SOVIET UNION, THE WEST, AND THE NUCLEAR ARMS RACE 50-69 (1986) (chronicling U.S. nuclear weapon development activities during the Cold War arms race); RONALD E. POWASKI, THE COLD WAR: THE UNITED STATES AND THE SOVIET UNION 1917-1991, at 302 (1998) ("Each postwar administration experienced pressure to build more nuclear weapons .... "). The Soviet Union sought to match the United States' efforts to develop more advanced nuclear weapons because the nuclear balance of power was deemed critical to the outcome of nearly all facets of the Cold War competition between the superpower rivals, and the result was a constantly escalating arms race. See POWASKI, supra, at 102-03, 134, 301-02.

6. See infra notes 24-27 and accompanying text; see also HOWARD BAKER & LLOYD CUTLER, U.S. DEPT. OF ENERGY, A REPORT CARD ON THE DEPARTMENT OF ENERGY'S NONPROLIFERATION PROGRAMS WITH RUSSIA 3-4, 14 (2000), available at http://www.seab.energy.gov/publications/rpt.pdf (indicating that there are at least 1000 metric tons of highly enriched uranium and 150 metric tons of plutonium—enough to construct 40,000 nuclear warheads—as well as 40,000 assembled nuclear warheads remaining in Russia after the Cold War); GLENN E. SCHWEITZER, SWORDS INTO MARKET SHARES: TECHNOLOGY, ECONOMICS, AND SECURITY IN THE NEW RUSSIA 144-45 (2000) (indicating that there are tens of thousands of former weapons scientists and engineers still living in Russia after the Cold War); Ken Luongo et al., The Crisis in Russia's Nuclear Cities, in REPAIRING THE REGIME: PREVENTING THE SPREAD OF WEAPONS OF MASS DESTRUCTION 39, 39-40 (Joseph Cirincione ed., 2000) (indicating that there are ten closed nuclear cities in Russia that were dedicated to nuclear weapon design and production during the Cold War).

7. See infra notes 28-29, 34-39 and accompanying text.

8. See infra notes 29-39 and accompanying text.
scientists that occupied the Soviet Union's secret "nuclear cities" are unemployed, increasing the possibility that these scientists will sell their knowledge to hostile nations or terrorist groups that seek nuclear capabilities.\(^9\)

In response to the nuclear threats posed by the collapse of the Soviet Union and the subsequent economic downturn in Russia, the United States initiated a number of bilateral assistance programs to aid Russia in coping with its security shortcomings.\(^10\) The bilateral assistance programs, broadly referred to as Cooperative Threat Reduction (CTR) projects,\(^11\) have been generally regarded as very successful in preventing the spread of Russian nuclear material and know-how to rogue states or terrorist groups.\(^12\) The United States has found it most effective to negotiate separate agreements that are narrowly tailored to address specific problems.\(^13\) Although the programs generally enjoy broad support in the United States and Russia, concerns about who should be responsible, and to what extent, for damages that may arise if the projects go awry have been a primary focus in many of the bilateral negotiations to begin CTR projects.\(^14\)

\(^9\) See infra notes 45-48 and accompanying text.

\(^10\) See Matthew Bunn, A Detailed Analysis of the Urgently Needed New Steps to Control Warheads and Fissile Material, in REPAIRING THE REGIME: PREVENTING THE SPREAD OF WEAPONS OF MASS DESTRUCTION, supra note 6, at 71, 80-95 (surveying existing cooperative U.S.-Russian nonproliferation assistance programs).

\(^11\) "Although CTR is the official name only of the DOD program, there is no other convenient moniker with which to refer to all U.S. government efforts in this area." JAMES E. GOODBY ET AL., CTR. FOR TECH. & NAT'L SEC. POLICY, NAT'L DEF. UNIV., COOPERATIVE THREAT REDUCTION FOR A NEW ERA 1 n.1 (2004), available at http://www.ndu.edu/ctnspc/CTR%20for%20a%20New%20Era.pdf. For the purposes of this Note, "Cooperative Threat Reduction" and "CTR" will be used to refer to all U.S. nonproliferation assistance programs with Russia, regardless of whether they are conducted primarily by the Department of Defense, the Department of Energy, or the Department of State. This approach is consistent with most CTR literature. See, e.g., id.; Kenneth Luongo & William Hoenh, An Ounce of Prevention, BULL. ATOM. SCIENTISTS, Mar.-Apr. 2005, at 29, 35 n.1. If the agency that implements a particular agreement is relevant to the discussion, it will be noted in the text.

\(^12\) See, e.g., BAKER & CUTLER, supra note 6, at 15 (noting the empirical success of current CTR activities and the need for continued efforts and additional projects); Bunn, supra note 10, at 80-95 (same).


\(^14\) Id. at 916.
Concomitant with the negotiation of the Soviet Nuclear Threat Reduction Act of 1991, the United States and Russia successfully negotiated an agreement (Umbrella Agreement) that held Russia solely and unconditionally liable for any damages arising from CTR activities. More recently, however, Russia has rejected liability provisions that mirror those of the CTR Umbrella Agreement when negotiating specific nonproliferation assistance agreements that do not fall under the Agreement. Because the United States has continued to insist that liability for all CTR activities be covered under the Umbrella Agreement, no new CTR programs have been initiated to continue the important work of securing Russia’s nuclear infrastructure, and numerous existing programs have expired.

The United States and Russia established two Department of Energy (DOE) CTR assistance programs during the 1990s to address specific problems plaguing Russia’s nuclear industry, but the countries deferred their concerns over liability. First, the Nuclear Cities Initiative (NCI) is designed to address the issue of “brain drain” by converting Russia’s former nuclear cities into


[T]he United States continues to demand that Russia accept full and unconditional responsibility for damage claims .... This policy has placed major new Western nuclear assistance programs in jeopardy, ... impeded the renewal of agreements set to expire in 2003, ... and has paralyzed efforts to expand a number of existing nonproliferation assistance programs.

Id.

19. See infra Part I.C-D.
successful civilian enterprises. Second, the plutonium disposition program is intended to assist Russia in constructing a Mixed-Oxide Fuel (MOX) reactor that will consume thirty-four tons of excess weapons-grade plutonium. The United States and Russia opted to begin implementing these initiatives, agreeing to work out specific liability provisions during the first few years of their existence. By the middle of 2003, however, they had failed to negotiate a mutually acceptable liability agreement for either program, and consequently, the unfinished programs have expired and cannot be continued.

This Note will analyze the liability impasse that is hindering the progress of present and future bilateral nonproliferation assistance agreements between the United States and Russia, ultimately recommending a solution that will prove acceptable to both parties. Part I will survey existing Russian nonproliferation agreements with the United States, focusing on the specific liability provisions that govern each one. Part II will investigate the current controversy between the United States and Russia concerning liability provisions that govern CTR activities, explaining the difficulty of negotiating liability provisions for CTR nonproliferation assistance programs given the various interests of both countries. Part III will analyze the feasibility and desirability of a number of approaches to resolving the liability dispute between the United States and


22. See infra Part I.C-D.

23. Charles Digges, Technical Agreement for Plutonium Disposition Allowed to Lapse by US, BELLONA, July 30, 2003, http://www.bellona.no/en/international/russia/navy/co-operation/30596.html (“[T]he US government let expire a 1998 US-Russian agreement on technical cooperation for plutonium disposition over concerns that the agreement did not provide sufficient liability protections for US officials and contractors involved in the project .... As a result, all new plutonium disposition planning ... legally has to be halted.”); Fiorill, Liability Dispute, supra note 17 (noting that the United States is “refusing to renew the Nuclear Cities Initiative agreement ... because of concerns that liability language in the agreement is inadequate to protect U.S. officials or workers in case of injuries or damages arising from activities carried out under the initiative” and noting that “[n]o new projects envisioned by the initiative will begin”).
Russia, providing recommendations that best accommodate the interests of both sides.

I. THE HISTORY OF U.S.-RUSSIAN NONPROLIFERATION AGREEMENTS AND THEIR LIABILITY PROVISIONS

A. The Collapse of the Soviet Union, the Threat of "Loose Nukes," and the Risk of "Brain Drain"

Although a major armed conflict never occurred between the United States and the Soviet Union during the Cold War, both states devoted significant economic and human resources to preparing for a full-scale nuclear conflict.\(^{24}\) Accordingly, the Soviet Union developed an extensive military-industrial complex, which was intended to mirror and surpass the United States' efforts to amass and develop nuclear weapons, allowing the Soviet Union to acquire a vast arsenal of strategic and tactical nuclear weapons for waging war.\(^{25}\) Entire cities were constructed to serve this goal, and thousands of nuclear physicists and other scientists that were employed by the Soviet government for the sole purpose of develop-

\(^{24}\) See supra note 5. Professor Ronald E. Powaski of Cleveland State University writes that

[t]he nuclear arms race also intensified and prolonged the Cold War.... After the Soviets began to produce nuclear weapons and ... the means to deliver them to U.S. targets, nuclear weapons became more important to the United States. They were considered necessary not only to deter an attack on the American homeland and on U.S. allies but also to counter a wide variety of other communist challenges.... Each postwar administration experienced pressure to build more nuclear weapons from the military-industrial complex, which included the Pentagon, defense contractors, scientists in the nation's nuclear weapons labs, and politicians with defense industries in their districts .... [T]he military-industrial complex capitalized repeatedly on the public's fear of the Soviet Union with exaggerated estimates of the Soviet capabilities.... The Soviets felt compelled to keep up with their more technologically advanced adversary, and, in time, they succeeded in matching in number if not quality virtually every major U.S. nuclear weapon.

POWASKI, supra note 5, at 301-02.

\(^{25}\) See supra notes 5, 24; see also BAKER & CUTLER, supra note 6, at 3-4 (indicating that there are 40,000 assembled strategic and tactical nuclear warheads remaining in Russia after the Cold War).
ing a nuclear arsenal occupied these "nuclear cities." 26 Vast sums of money were invested in development of nuclear weapons, resulting in the production and stockpiling of 40,000 assembled warheads and more than 1150 metric tons of weapons-grade fissile material. 27

With the end of the Cold War in 1991, the states of the former Soviet Union were thrown into economic and political disarray. 28 Perhaps the greatest risk that accompanied this collapse was the threat of "loose nuclear weapons." 29 The end of the Cold War largely eliminated the risk of global nuclear conflict between states, but the threat of terrorist attacks became the primary challenge to the United States' national security, as demonstrated by a number of incidents during the last decade. 30 Although no terrorist acts

26. Schweitzer, supra note 6, at 144-45 (indicating that there are tens of thousands of former weapons scientists and engineers still living in Russia after the Cold War); Luongo et al., supra note 6, at 39-40 (indicating that there are ten nuclear cities in Russia that were dedicated to nuclear weapon design and production during the Cold War); Bunn, supra note 20 ("More than a decade after the Cold War, Russia still has ten entire [nuclear] cities, where nearly three quarters of a million people live, which were built only for the purpose of making nuclear weapons and their essential ingredients.").

27. Baker & Cutler, supra note 6, at 3-5 (indicating that there are at least 1000 metric tons of highly enriched uranium and 150 metric tons of plutonium, enough to construct 40,000 nuclear warheads, in addition to 40,000 assembled nuclear warheads remaining in Russia after the Cold War).


29. Allison et al., supra note 2, at 1-7 (discussing the unprecedented risk of "nuclear leakage" and terrorism created by Russia's insecure nuclear facilities); Baker & Cutler, supra note 6, at 43 ("The most urgent unmet national security threat to the United States today is the danger that weapons of mass destruction or weapons-usable material in Russia could be stolen and sold to terrorists or hostile nation states and used against American troops abroad or citizens at home."). Professor Joseph Nye of Harvard University has said that [t]he so-called "loose nukes" in Russia are probably the greatest threat ... to our national security. There are basically a thousand tons or more of Plutonium, and highly-enriched Uranium. And it takes less than 10 pounds to make a nuclear weapon. So that material getting in the wrong hands ... could be a tremendous threat to us.


30. See, e.g., Donald H. Rumsfeld, U.S. Sec'y of Def., Testimony Prepared for Delivery to the National Commission on Terrorist Attacks Upon the United States (Mar. 23, 2004),
directed against the population or interests of the United States or other states have been launched with nuclear weapons yet, this failure "must be assumed to be due to lack of means rather than lack of motivation." 31 Attempts by al-Qaeda to acquire nuclear material are well documented, 32 and several other attempted thefts of nuclear material indicates that there is a demand for nuclear material among terrorist groups, many of which are hostile to the United States. 33

The collapse of the Soviet Union dramatically increased the risk that terrorist organizations will succeed in acquiring fissile material from Russia for several reasons. First, the end of the Soviet state marked the end of state control over every aspect of life in the Soviet Union. 34 One by-product of stringent centralized control was heavy regulation and intense security measures for military facilities and nuclear installations. 35 Second, the economic decline that accompanied the transition to a market economy 36 exacerbated the problem, as the fiscal situation in the former Soviet states, most notably


31. BUNN ET AL., supra note 2, at v.

32. Osama bin Laden has called the acquisition of weapons of mass destruction (WMD) a "religious duty." It is known that Osama bin Laden and his Al Qaeda terrorist network have made repeated attempts to buy stolen nuclear material from which to make a nuclear bomb, and that they have also tried to recruit scientists to help them with the task of weapon design and construction.... Al Qaeda is not the only terrorist group that might aspire to nuclear weapons.

Id. at 1 (footnote omitted); see also David Albright, Al-Qaeda's Quixotic Quest to Go Nuclear, ASIA TIMES, Nov. 22, 2002, http://www.atimes.com/atimes/Middle_East/DK22AkOl.html ("[C]aptured documents reinforce assessments that al-Qaeda is highly determined to obtain nuclear weapons and other weapons of mass destruction.").

33. BAKER & CUTLER, supra note 6, at 6-7 (discussing the facts of a number of actual attempts to steal nuclear material from Russian installations); NATHAN E. BUSCH, NO END IN SIGHT: THE CONTINUING MENACE OF NUCLEAR PROLIFERATION 118-19 (2004) (discussing twenty-one known attempts to steal nuclear material from Russian installations between 1991 and 1999).

34. ALLISON ET AL., supra note 2, at 37 ("The foundations of the Soviet approach to nuclear security were swept away in the transition from a closed totalitarian state to a more open, more turbulent democratizing state.").

35. Id. at 2-3, 36-37 (discussing stringent Soviet-era nuclear security); BUSCH, supra note 33, at 117-18 (same).

36. See supra note 28 and accompanying text.
Russia, made security programs impossible to fund. Graham Allison summarizes the implications of post-Soviet disorder in Russia:

The dramatic changes ... have produced political uncertainty, economic distress, and social dislocation. For tens of millions of Russians, hardship and deprivation are inescapable facts of life.... [H]arsh economic conditions can create incentives for nuclear theft and smuggling. For people who are poorly housed, poorly fed, and poorly paid (when paid at all), there will be a temptation to do what they can to improve their lives and secure their futures. Russia's nuclear custodians face these pressures as they preside over weapons and materials that are immensely valuable to any state or group that covets nuclear weapons. It is not hard to imagine that people leading bleak, uncertain, and difficult lives might find irresistible the prospect of wealth and security via the nuclear black market....

Organizations such as the Russian military and Minatom are now operating in circumstances of great stress. Money is in short supply, paychecks are irregular, living conditions unpleasant .... [D]isorder within Russia and the resulting strains within the military could easily cause a lapse or a breakdown in the Russian military's guardianship of nuclear weapons. Accordingly, there is a significant and ever-present risk that terrorists could acquire a nuclear device or fissile material from Russia as a result of the confluence of Russian economic decline and the end of stringent Soviet-era nuclear security measures.

Terrorist groups could acquire a nuclear weapon by a number of methods, including "steal[ing] one intact from the stockpile of a country possessing such weapons, or ... [being] sold or given one by

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37. ALLISON ET AL., supra note 2, at 28-31 (surveying the implications of post-Soviet economic decline on Russian nuclear security).

38. Id. (footnotes omitted).

39. Id. at 2 ("The current trickle [of fissile materials leaking out of Russia] could well be a harbinger of things to come. A burgeoning flow ... of nuclear-weapons materials, or perhaps even of weapons themselves, has become a distinct danger given the conditions in which nuclear assets are held in Russia."); BUSCH, supra note 33, at 118 ("The [Material Protection, Control, and Accounting] at Russian nuclear facilities was simply not designed to protect materials in this new political and economic situation."); Jimmy Burns et al., Nuclear Theft Causes Global Alert, FIN. TIMES, July 9, 2002, at 14.
such a country, or [buying or stealing] one from another subnational group that had obtained it in one of these ways." Equally threatening, however, is the risk that terrorists will steal or purchase fissile material and construct a nuclear device on their own. Very little material is necessary to construct a highly destructive nuclear weapon. Although nuclear devices are extraordinarily complex, the technical barriers to constructing a workable weapon are not significant. Moreover, the sheer number of methods that could be used to deliver a nuclear device into the United States makes it incredibly likely that terrorists could successfully employ a nuclear weapon once it was built. Accordingly, supply-side controls that are aimed at preventing terrorists from acquiring nuclear material in the first place are the most effective means of countering the risk of nuclear terrorism.

Moreover, the end of the Cold War eliminated the rationale for maintaining a large military-industrial complex in Russia, and the nuclear cities were closed. This resulted in at least 35,000 nuclear scientists becoming unemployed in an economy that was collapsing. Although the economy has stabilized somewhat, there

40. BUNN ET AL., supra note 2, at v.
41. ALLISON ET AL., supra note 2, at 45-46 (indicating that less than twenty pounds of plutonium or forty pounds of highly enriched uranium would permit terrorist organizations to construct a variety of nuclear devices); BUNN ET AL., supra note 2, at v (same); Burns et al., supra note 39 (indicating that a baseball-sized piece of plutonium is adequate for constructing a nuclear device).
42. ALLISON ET AL., supra note 2, at 55-62 (identifying a number of simple nuclear weapon designs that are within the reach of terrorists with fissile material); BUNN ET AL., supra note 2, at 12 (citing several studies that confirm the ease with which terrorists could construct a nuclear weapon after stealing fissile material); Bill Keller, Nuclear Nightmares, N.Y. TIMES MAG., May 26, 2002, at 22 (articulating the ease of acquiring knowledge detailing how to construct a nuclear device).
43. See supra note 2.
44. See supra note 3.
45. Luongo et al., supra note 6, at 39-40 (indicating that there are ten closed nuclear cities in Russia that were dedicated to nuclear weapon design and production during the Cold War); Bunn, supra note 20 ("With the end of the Cold War, a substantial part of the mission of the nuclear facilities in these cities has disappeared, and government funding for these facilities and the cities around them has plummeted.").
46. SCHWEITZER, supra note 6, at 144-45 (indicating that there are tens of thousands of unemployed former weapons scientists and engineers still living in Russia after the Cold War); Bunn, supra note 20 (indicating that there are at least 35,000 unemployed scientists in Russia that formerly occupied the nuclear cities); see also supra note 28 and accompanying text (discussing the post-Soviet economic collapse in Russia).
are still at least 20,000 former scientists who are unemployed or underpaid and who are too young to retire,\textsuperscript{47} raising the chilling prospect that these scientists will be tempted to sell their nuclear knowledge, or steal nuclear material to sell, to states or terrorist organizations with nuclear ambitions.\textsuperscript{48}

The potential consequences of the unchecked spread of nuclear knowledge and material to terrorist groups that seek to cause mass destruction in the United States are truly horrifying. A terrorist attack with a nuclear weapon would be devastating in terms of immediate human and economic losses.\textsuperscript{49} Moreover, there would be immense political pressure in the United States to discover the perpetrators and retaliate with nuclear weapons, massively increasing the number of casualties and potentially triggering a full-scale nuclear conflict.\textsuperscript{50} In addition to the threat posed by terrorists, leakage of nuclear knowledge and material from Russia will reduce the barriers that states with nuclear ambitions face and may trigger widespread proliferation of nuclear weapons.\textsuperscript{51} This proliferation will increase the risk of nuclear attacks against the United States

\textsuperscript{47} Bunn, supra note 20.

\textsuperscript{48} Id. ("[E]mployees may be most tempted to sell nuclear knowledge or steal nuclear material for sale ... when they know they will soon lose their jobs, but for the moment still have access to nuclear secrets and materials—and for thousands in Russia’s nuclear cities, that time is now."); see also BAKER & CUTLER, supra note 6, at 1.

\textsuperscript{49} See, e.g., Albright, supra note 32 (indicating that a nuclear terrorist attack in the United States would result in hundreds of thousands of deaths and have severe economic impacts); Luongo & Hoehn, supra note 11, at 35.

\textsuperscript{50} Albright, supra note 32 ("The desire for revenge may lead the United States, or perhaps its allies, to respond with nuclear weapons, eliminating the perpetrators if they could be immediately identified, but likely causing untold suffering to civilian populations."); \textit{Greenfield At-Large: America’s New War: Nuclear Threats} (CNN television broadcast Nov. 1, 2001) (statement of Gregg Easterbrook, Writer and Visiting Scholar, Brookings Institute), available at http://transcripts.cnn.com/TRANSCRIPTS/0111/01/gal.00.html ("[I]f an atomic warhead goes off in Washington, ... in the 24 hours that followed, a hundred million Muslims would die as U.S. nuclear bombs rained down on every conceivable military target in a dozen Muslim countries.").

\textsuperscript{51} Nuclear leakage will enable states with nuclear ambitions to achieve their goal more easily by reducing technical and cost barriers and by affording easy access to nuclear material that is difficult to create. \textit{ALLISON ET AL., supra} note 2, at 50-52. Moreover, nuclear leakage creates incentives to proliferate and consequently risks triggering widespread nuclear proliferation in an ever-widening circle of states. \textit{Id.} at 53. Leakage of nuclear knowledge and expertise increases the risk of widespread nuclear proliferation for similar reasons. \textit{Id.} at 61-62.
or its allies by hostile states, as well as increase the likelihood that regional conflicts will draw in the United States and escalate to the use of nuclear weapons.

B. U.S.-Russian Nonproliferation Agreements: Cooperative Threat Reduction

Recognizing the risks that accompanied Russia's economic decline and the concomitant inability to adequately secure assembled nuclear weapons and fissile material, the United States deemed it desirable to establish cooperative programs to control the emerging nuclear threat. In December 1991, the U.S. Congress approved, and President George H.W. Bush signed into law, the Soviet Nuclear Threat Reduction Act of 1991, commonly referred to as the Nunn-Lugar Act. The Act created a framework through which the United States negotiates subsequent CTR agreements with the former Soviet states to provide bilateral assistance through the Department of Defense (DOD) for coping with specific issues related to demilitarization in the post-Cold War world. The United States has signed a number of CTR agreements with several former Soviet

52. See, e.g., Bradley A. Thayer, The Causes of Nuclear Proliferation and the Utility of the Nuclear Nonproliferation Regime, 4 SECURITY STUD. 463, 465-66 (1995) (identifying a number of scenarios in which horizontal nuclear proliferation could trigger nuclear attacks against the United States or its interests).

53. See, e.g., ALLISON ET AL., supra note 2, at 71-72 (offering several hypothetical situations in which nuclear proliferation to unstable regions of the world could trigger nuclear conflicts that would draw in the United States). There is an extensive debate in the security studies literature concerning whether nuclear proliferation increases or decreases the risk of conflict between states, although the case has never been made that terrorist acquisition of nuclear weapons would be desirable under any circumstances. A survey of the nuclear proliferation literature and the arguments on both sides is beyond the scope of this Note, but for an in-depth articulation of the competing arguments, see generally SCOTT D. SAGAN & KENNETH N. WALTZ, THE SPREAD OF NUCLEAR WEAPONS: A DEBATE (1995), which presents Professor Sagan's argument that horizontal nuclear proliferation increases the risk of nuclear conflict for multiple reasons and Professor Waltz's argument that nuclear proliferation increases deterrence, reducing the risk of conflict between states, and SCOTT D. SAGAN & KENNETH N. WALTZ, THE SPREAD OF NUCLEAR WEAPONS: A DEBATE RENEWED (2d ed. 2003), which updates, expands, and continues the dialogue from the earlier edition of the same book.


55. See supra note 11.

56. Beard, supra note 13, at 896-900 (describing generally the nature of CTR activities).
and the success of these programs in reducing the national security risks of the crumbling former Soviet nuclear infrastructure is universally acknowledged.\textsuperscript{58} Given the hazards that accompany activities involving nuclear material,\textsuperscript{59} there has been an intense focus on the liability provisions that govern CTR assistance programs.\textsuperscript{60}

To address legal and procedural issues regarding how CTR projects will be implemented, the DOD negotiates an "umbrella agreement" with any state that receives bilateral assistance for CTR activities.\textsuperscript{61} The umbrella agreements provide a legal framework that regulates issues regarding congressional funding, performance and auditing, legal status for personnel, and liability.\textsuperscript{62} The umbrella agreements also authorize the Secretary of Defense to negotiate project-specific agreements that further specify how particular CTR projects will be implemented, subject to the legal and procedural limitations of the umbrella agreement.\textsuperscript{63}

In June 1992, the United States and Russia concluded a number of project-specific CTR implementing agreements, as well as an umbrella agreement to govern all of the implementing agreements, the Agreement Between the United States of America and the Russian Federation Concerning the Safe and Secure Transportation, Storage and Destruction of Weapons and the Prevention of Weapons Proliferation, with Implementing Agreements and Annexes (Umbrella Agreement).\textsuperscript{64} This document outlines a number of cooperative CTR activities for which the United States provides assistance to Russia, and it also contains the provisions concerning the procedures that will be used for implementing all U.S.-Russian

\textsuperscript{57} In addition to agreements made with Russia, the United States has also signed CTR agreements with Belarus, Kazakhstan, and Ukraine, which are the other three former Soviet republics that housed Soviet nuclear forces during the Cold War. \textit{Id.} at 897.

\textsuperscript{58} \textit{See, e.g.,} BAKER & CUTLER, \textit{supra} note 6, at 4-5, 15 (noting the empirical success of current CTR activities and the need for continued efforts and additional projects); Bunn, \textit{supra} note 10, at 80-95 (same).

\textsuperscript{59} \textit{See infra} notes 126-31 and accompanying text.

\textsuperscript{60} Beard, \textit{supra} note 13, at 916.

\textsuperscript{61} \textit{Id.} at 900-03 (providing an overview of the legal regime governing implementation of CTR projects).

\textsuperscript{62} \textit{Id.} at 900-20 (discussing the different components of CTR umbrella agreements).

\textsuperscript{63} \textit{Id.} at 902-03.

\textsuperscript{64} Umbrella Agreement, \textit{supra} note 16.
cooperative CTR projects. In the Umbrella Agreement, Russia agrees to waive all claims against the United States and any U.S. contractors that might arise while the CTR projects are being implemented. Moreover, Russia agrees to bear responsibility for all third-party claims that arise from implementation of the CTR projects. These broad provisions basically exempt the United States and U.S. contractors from any liability for anything that occurs pursuant to CTR activities, placing the burden of compensating all victims on Russia. Russia initially sought to limit the liability protections in the Umbrella Agreement by creating an exception for reckless, grossly negligent, or intentional conduct by the United States or U.S. contractors. The United States refused to accept any limitation on liability protection for itself or its contractors for a number of reasons, although a provision was included to give the United States discretion in providing compensation to the victims of accidents that result from CTR activities and to prescribe consultation between the United States and Russia in the event of an incident. Since 1992, several other DOD project-specific CTR implementing agreements have been reached between the United

65. See id. See generally Beard, supra note 13 (discussing the Umbrella Agreement).
66. The Umbrella Agreement provides that
   [t]he Russian Federation shall, in respect of legal proceedings and claims, other than contractual claims, hold harmless and bring no legal proceedings against the United States of America and personnel, contractors, and contractors' personnel of the United States of America, for damage to property owned by the Russian Federation, or death or injury to any personnel of the Russian Federation, arising out of activities pursuant to this Agreement.
   Umbrella Agreement, supra note 16, art. VII, para. 1; see also Beard, supra note 13, at 916-20 (discussing generally the liability provisions of the Umbrella Agreement).
67. Umbrella Agreement, supra note 16, art. VII, para. 2 ("Claims by third parties, arising out of the acts or omissions of any employees of the United States of America or contractors or contractors' personnel of the United States of America done in the performance of official duty, shall be the responsibility of the Russian Federation.").
68. Beard, supra note 13, at 917.
69. Jack M. Beard, Associate Deputy General Counsel for International Affairs and Intelligence at the Department of Defense, notes that the United States refused [to include Russia's proposed exceptions for "reckless," "grossly negligent," or "intentional" conduct] due to the difficulty in applying these subjective terms to some of the inherently dangerous activities contemplated, the limited U.S. authority for assuming potentially enormous liabilities, the unilateral nature of the funding for these assistance activities and the lack of direct U.S. control over many of the activities envisioned.
   Id.
70. Umbrella Agreement, supra note 16, art. VII, paras. 3-4.
States and Russia pursuant to the Umbrella Agreement.\textsuperscript{71} Several of the CTR implementing agreements contain liability protections above and beyond those included in the Umbrella Agreement, going so far as to specify minimum equipment specifications and to exempt U.S. contractors from any liability for accidents resulting from the contractors' use of faulty materials or improper procedures.\textsuperscript{72}

\textbf{C. The Nuclear Cities Initiative and "Brain Drain"}

In September 1998, the United States and Russia concluded the Agreement Between the Government of the United States of America and the Government of the Russian Federation on the Nuclear Cities Initiative (NCI).\textsuperscript{73} This Department of Energy (DOE) CTR program focuses on consolidating the former Soviet nuclear infrastructure by converting the former nuclear cities from defense industry complexes into productive civilian cities with nondefense employment opportunities for former nuclear scientists.\textsuperscript{74} The purpose of the NCI's defense conversion activities is to solve the problem of "brain drain," that is, the risk that former nuclear scientists will sell their nuclear knowledge out of economic necessity to other states or terrorist organizations with nuclear ambitions.\textsuperscript{75} Transforming the former nuclear cities into civilian enterprises builds on the existing industrial infrastructure by effectively

\textsuperscript{71} Brubaker & Spector, \textit{supra} note 18, at 18 & 34 n.82 (listing all of the DOD CTR agreements governed by the provisions of the Umbrella Agreement).

\textsuperscript{72} Beard, \textit{supra} note 13, at 918-19.


\textsuperscript{74} See Baker & Cutler, \textit{supra} note 6, at 4-5, 31-33; Luongo et al., \textit{supra} note 6, at 39-45 (describing the intent and past successes of the NCI, but noting that much more needs to be done to create productive commercial enterprises to replace prior scientific and military activities in Russia's nuclear cities); Bunn, \textit{supra} note 20 ("NCI is the only U.S. program focused directly on reducing the size of the Russian nuclear weapons complex and ensuring that this reduction does not lead to mass unemployment and instability.").

\textsuperscript{75} See Luongo et al., \textit{supra} note 6, at 39 ("The United States and Russia have launched the Nuclear Cities Initiative (NCI) to facilitate commercial development in these closed cities, thereby providing alternative, peaceful employment for scientists and technicians that might otherwise be forced to sell their nuclear-related skills to the highest bidder."); see also \textit{supra} notes 45-48 and accompanying text.
providing new employment opportunities to those nuclear scientists who have marketable skills and dangerous knowledge but no jobs.

Because the NCI is a DOE program, it is not subject to the Umbrella Agreement that governs DOD activities, and accordingly, the broad liability exemptions for the United States and U.S. contractors do not automatically apply to NCI activities. Instead, in 1998, the United States compromised with Russia concerning liability for NCI activities, and Russia agreed to exempt the United States and U.S. contractors from any liability and to indemnify them against any third-party claims, unless an incident arose from "premeditated" actions. Although the United States agreed to these terms, the text of the NCI provided that the program would only exist for five years and would be renewable at the will of the

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76. See Justin Bernier, The Death of Disarmament in Russia?, PARAMETERS, Summer 2004, at 84, 92, available at http://carlisle-www.army.mil/usawc/Parameters/04Summer/bernier.pdf (noting that the terms of the Umbrella Agreement do not apply to non-DOD CTR projects absent Russian consent); see also supra note 11 (noting the distinction between assistance programs funded by the DOD and those funded by other departments).

77. The NCI Agreement provides the following:

1. With the exception of claims against individuals for premeditated damage or injury, the Government of the Russian Federation shall bring no claims or other legal proceedings against the Government of the United States of America and its personnel or its contractors, sub-contractors, consultants, suppliers, or sub-suppliers of equipment or services at any tier and their personnel, in any court or forum, for any damage, including indirect, direct, or consequential damage, arising from activities undertaken pursuant to this Agreement, to property owned by the Russian Federation. This paragraph shall not apply to legal actions brought by the Government of the Russian Federation to enforce the provisions of contracts to which it or a Russian national or other legal entity is a party.

2. With the exception of claims against individuals for premeditated damage or injury, the Government of the Russian Federation shall provide for the adequate defense of, shall indemnify, and shall bring no claims or other legal proceedings against the Government of the United States of America and its personnel or its contractors, sub-contractors, consultants, suppliers, or sub-suppliers of equipment or services at any tier and their personnel, in connection with third-party claims, in any court or forum, for any injury or damage, including indirect, direct, or consequential injury or damage, arising from activities undertaken pursuant to this Agreement, occurring within or outside the territory of the Russian Federation. Nothing in this paragraph shall be construed as acknowledging the jurisdiction of any court or forum over third-party claims to which this paragraph applies, nor shall it be construed as waiving the sovereign immunity of either Party with respect to third-party claims that may be brought against it.

Nuclear Cities Initiative Agreement, supra note 73, art. 8, paras. 1, 2 (emphasis added).
parties. In 2003, the agreement expired and the prospect of renewal remains slim; the primary holdup is the renegotiation of the liability provisions. The DOE announced that it will not support renewal of the NCI unless Russia accepts amendments to the NCI's liability provisions that bring those provisions in line with the broad protections outlined in the Umbrella Agreement. The Duma has refused to agree to employ the Umbrella Agreement's liability provisions in connection with the NCI, and accordingly, the agreement is unlikely to be renewed.

The expiration of the NCI will not have dire short-term consequences because the DOE and the Russian Ministry of Atomic Energy (Minatom) have agreed to complete all sixty-nine NCI projects that have already begun. Unfortunately, future projects aimed at defense conversion will be virtually impossible to complete given the expiration of the NCI. Moreover, the lack of success between the United States and Russia in compromising to renew the NCI because of the liability dispute may signal a lack of political

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78. Id. art. 12, para. 1.
79. Paul Webster, Russia's Nuclear Cities: Swords-to-Plowshares Program Suffers Meltdown, SCIENCE, Oct. 10, 2003, at 207, 207 ("Last month the U.S. government quietly opted not to renew a 5-year agreement with Russia on the Nuclear Cities Initiative .... Negotiations broke down ... after Russia failed to grant U.S. contractors blanket immunity from legal claims if something were to go awry during an NCI project."); Fiorill, Legal Issues, supra note 17 (indicating that the sole reason for the United States' nonrenewal of the NCI Agreement in 2003 was Russia's refusal to adopt new liability provisions that mirror those of the Umbrella Agreement); Fiorill, Liability Dispute, supra note 17 (same).
80. Press Release, Dep't of Energy, Secretary Abraham Proposes Continuing Defense Conversion Projects in Russian Closed Cities (July 22, 2003), http://www.ransac.org/Official%20Documents/U.S.%20Government/Department%20of%20Energy/724200322443 PM.html; see also supra note 79. For a discussion of the reasons that the United States seeks stronger liability protections, see infra Part II.C.
81. See Bernier, supra note 76, at 92; Fiorill, Liability Dispute, supra note 17 (noting Russian Ambassador At-Large Anatoly Antonov's concern with the United States' insistence on imposing liability on Russia, even in the event of a terrorist strike at a Russian nuclear facility). For a discussion of the reasons that Russia seeks to limit liability protections in the case of premeditated acts, see infra Part II.D.
82. Bernier, supra note 76, at 92; Fiorill, Liability Dispute, supra note 17.
83. Bernier, supra note 76, at 92 ("[N]o new [NCI] efforts can begin before a replacement agreement is reached."); Webster, supra note 79, at 207; Fiorill, Liability Dispute, supra note 17 ("No new projects envisioned by the initiative will begin, though, and U.S. officials expressed concern that the liability dispute could drag on ....").
support for nonproliferation efforts that will undermine current and future CTR projects.\footnote{84}  

**D. U.S.-Russian Plutonium Disposition Agreements and Mixed-Oxide Fuel**  

Recognizing a need to eliminate the significant stocks of surplus weapons-grade plutonium that existed in both the United States and Russia after the Cold War, U.S. President Bill Clinton and Russian President Boris Yeltsin agreed in a series of 1998 joint statements to negotiate a specific and binding international agreement compelling each country to dispose of fifty tons of weapons-grade plutonium.\footnote{85} The result of this call for action is the 1998 Agreement Between the Government of the United States of America and the Government of the Russian Federation on Scientific and Technical Cooperation in the Management of Plutonium that Has Been Withdrawn from Nuclear Military Programs (PSTA).\footnote{86} The PSTA compels both parties to research plutonium disposition options cooperatively by conducting feasibility studies to determine how to proceed.\footnote{87}  

\footnote{84. Press Release, Russian Am. Nuclear Sec. Advisory Council, Terminating Nonproliferation Agreements with Russia: Dangerous and Unnecessary (July 22, 2003), http://www.ransac.org/724200325434PM.html (noting the negative implications of the expiration of the NCI agreement on future CTR projects); Letter from Ike Skelton, John Spratt, Adam Schiff, Ellen Tauscher, Chet Edwards, and Brad Sherman, U.S. Representatives, to George W. Bush, President of the United States (July 22, 2003), available at http://www.house.gov/spratt/newsroom/03_04/us_russia~agreements_letter.pdf (arguing that "[t]his [liability] impasse has placed prospects for future U.S.-Russian nonproliferation cooperation at great risk" and urging the President "not to adopt a position so rigid as to produce such a result"). Other CTR efforts that may be negatively affected by the liability dispute include programs designed to address the following: "chemical weapon destruction; some biological threat reduction work; fissile material protection, control, and accounting; nuclear warhead security; and the completion of strategic delivery vehicle elimination." Luongo & Hoehn, supra note 11, at 30.}

\footnote{85. See Bunn, supra note 21 (tracing the history of U.S.-Russian plutonium disposition efforts).}


\footnote{87. Id. art. 3; see Bunn, supra note 21 (discussing generally U.S.-Russian plutonium disposition efforts).}
Pursuant to PSTA’s mandate, the United States and Russia agreed on a specific course of action in the 2000 Agreement Between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation (PMDA). The PMDA requires both parties to cooperate to dispose of no less than thirty-four metric tons of plutonium each, in parallel with one another, by immobilization or irradiation as nuclear reactor fuel. Immobilization entails blending plutonium with high-level wastes and vitrifying the resulting composite for burial or storage in a geologic repository. Irradiation entails blending plutonium with uranium to fabricate mixed-oxide (MOX) fuel that can be burned to produce energy in existing nuclear power plants. The ultimate goal

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89. Id. art. II, para. 1; id. art. III, para. 1. See generally James M. McCormick & Daniel B. Bullen, Disposing of the World’s Excess Plutonium, 26 POL’Y STUD. J. 682, 693-96 (1998) (describing immobilization and irradiation as the two options that are available to dispose of surplus plutonium stockpiles).

90. See, e.g., McCormick & Bullen, supra note 89, at 693-94 (discussing the immobilization option); Bunn, supra note 21 (same). Some scholars and nuclear scientists have questioned the nonproliferation value of immobilization. See McCormick & Bullen, supra note 90, at 694 (“The [vitrified] plutonium in the borosilicate logs could be leached out of them relatively easily and could be diverted to weapons use.”); Richard Rhodes & Denis Beller, The Need for Nuclear Power, FOREIGN AFF., Jan.-Feb. 2000, at 30, 41 (arguing that immobilization may pose a proliferation threat). But see Luther J. Carter & Thomas H. Pigford, Confronting the Paradox in Plutonium Policies, ISSUES SCI. & TECH., Winter 1999-2000, at 29, 29-36 (articulating the nonproliferation benefits of the immobilization option compared to the MOX approach); Paul Leventhal & Steven Dolley, The MOX and Vitrification Options Compared: A Non-Proliferation Perspective, NUCLEAR CONTROL INST., 1995, http://www.nci.org/b/berlin.htm (same).

91. See, e.g., McCormick & Bullen, supra note 89, at 695-96 (discussing the MOX option); Bunn, supra note 21 (same). Like the irradiation option, the MOX option has been heavily criticized as potentially increasing the risk of nuclear proliferation for a number of reasons. Paul Leventhal and Steven Dolley of the Nuclear Control Institute argue that the MOX option poses a serious proliferation risk for several reasons: (1) plutonium can be easily diverted or stolen during transportation between the MOX fabrication site and the reactor or during the fuel fabrication process; (2) legitimizing a plutonium-based fuel cycle will encourage other nations to begin using plutonium for energy, which undermines the nonproliferation regime; (3) it is easy to reverse the irradiation process and extract weapons-grade plutonium from fabricated MOX fuel; and (4) even reactor-grade MOX can be used for constructing nuclear
of the PMDA is a reduction by two metric tons per year of each country's surplus weapons-grade plutonium, beginning no later than 2008.92

The immobilization option was met with hostility in Russia, where surplus weapons-grade plutonium is viewed as an economic resource that should be exploited to produce cheap energy.93 Although the United States initially took the position that some plutonium should be irradiated and some should be immobilized, Russia rejected this option, and the current Bush administration has acquiesced to Russia's demand that both parties' plutonium be fabricated into MOX and burned in reactors.94 Russia currently has several nuclear reactors that are capable of burning MOX fuel, but they have no facilities for fabricating MOX.95 Pursuant to the PMDA, Russia planned to construct a MOX fabrication plant in 2004 with assistance from the United States.96 A number of U.S.
contractors and government personnel have been enlisted to help Russia construct this MOX plant and to implement precautions for safely burning MOX in their existing reactors.97

Both the PSTA and the PMDA are DOE initiatives, and accordingly, they do not automatically fall under the liability provisions of the Umbrella Agreement.98 The 1998 PSTA contains liability language that is virtually identical to that of the NCI; Russia exempts the United States and any U.S. contractors from liability for accidents that are not premeditated,99 as well as agrees to indemnify the United States and U.S contractors against third-party claims that arise from unintentional conduct.100 The PSTA


97. See Bunn, supra note 21.

98. See Bernier, supra note 76, at 92 (noting that the terms of the Umbrella Agreement do not apply to non-DOD CTR projects absent Russian consent); Digges, supra note 23 (noting that the PSTA and the PMDA are DOE programs that do not fall under the Umbrella Agreement); see also supra note 11.

99. The PSTA provides that,

[w]ith the exception of claims for damage or injury against individuals arising from their premeditated actions, the Government of the Russian Federation shall bring no claims or other legal proceedings against the Government of the United States of America and its personnel or its contractors, sub-contractors, consultants, suppliers or subsuppliers of equipment or services at any tier and their personnel, in any court or forum, for any damage, including indirect, direct or consequential damage, arising from activities undertaken pursuant to this Agreement, to property owned by the Russian Federation. This paragraph shall not apply to legal actions brought by the Government of the Russian Federation to enforce the provisions of contracts to which it or a Russian national or other legal entity is a party.

PSTA, supra note 86, art. 9, para. 1 (emphasis added).

100. Regarding third-party claims, the PSTA provides that,

[w]ith the exception of claims for damage or injury against individuals arising from their premeditated actions, the Government of the Russian Federation shall provide for the adequate defense of, shall indemnify, and shall bring no claims or other legal proceedings against, the Government of the United States of America and its personnel or its contractors, sub-contractors, consultants, suppliers or subsuppliers of equipment or services at any tier and their personnel, in connection with third-party claims, in any court or forum, for any injury or damage, including indirect, direct or consequential injury or damage, arising from activities undertaken pursuant to this Agreement, occurring within or outside the territory of the Russian Federation. Nothing in this paragraph shall be construed as acknowledging the jurisdiction of any court or forum over third-party claims to which this paragraph applies, nor shall it be construed as waiving the sovereign immunity of either party with respect to third-party claims that may be brought against it.

Id. art. 9, para. 2 (emphasis added).
expired in 2003, just as the NCI did, and it is unlikely to be renewed for similar reasons.\(^{101}\) Moreover, the PSTA governed only cooperative research on plutonium disposition options, and both countries agreed that a more specific liability agreement would be necessary for the PMDA.\(^{102}\)

Unfortunately, serious disagreements about which party should bear the costs of an accident involving construction of a MOX fuel fabrication facility in Russia or the consumption of MOX fuel in Russian reactors made it impossible to reach a compromise on liability language during the PMDA negotiations.\(^{103}\) Accordingly, the PMDA only authorizes the completion of preparatory work for the construction of a MOX fabrication plant while a subsequent liability protocol is negotiated.\(^{104}\) The planned liability protocol has yet to be negotiated, however, and no agreement seems likely in the near future.\(^{105}\) The risks of constructing and operating nuclear plants, especially those that involve MOX fuel, are very significant.\(^{106}\) Accordingly, the odds of a serious incident that gives rise to liability

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102. Matthew Bunn discusses the scope of the PSTA:

The 1998 agreement included liability provisions which DOE and its contractors had judged to be adequate for the modest scale joint research and development activities covered under the agreement.... To actually build and operate major plutonium-handling facilities, and use plutonium fuel in reactors, would require a stronger agreement on liability than is included in the 1998 agreement, which focuses only on research and development.


103. *Id.*

104. PMDA, *supra* note 88, Annex on Assistance, sec. II (requiring the United States and Russia to continue negotiating liability provisions to govern PMDA activities and limiting the parties' actions under the PMDA to "pre-construction design work" until such liability provisions are negotiated and enter into force).

105. Bunn, *supra* note 21 (noting the lack of flexibility that both the United States and Russia have shown in attempting to negotiate the liability protocol).

106. Edwin S. Lyman, *The Safety Risks of Using Mixed-Oxide Fuel in VVER-1000 Reactors: An Overview*, NUCLEAR CONTROL INST., May 20, 2000, http://www.nci.org/el-russiamox.htm (indicating that the use of MOX fuel in Russia's existing reactors, without safety upgrades, could increase the risk of accidents and meltdowns by limiting the effectiveness of the coolant mechanisms and reducing the delayed neutron fraction). Moreover, a meltdown at a nuclear plant that is burning MOX fuel would result in a greater number of deaths than would result from a meltdown at a plant that is burning conventional nuclear fuel because MOX fuel contains a high concentration of actinides, increasing the potency of radiation that is released. *Id.*
occurring pursuant to the PMDA are greater than in some other nonproliferation contexts, and the hurdles to negotiation of mutually acceptable liability provisions are therefore much higher. It has now "become clear that Russia is absolutely unwilling" to negotiate any exemptions for damages caused by intentional conduct, and the United States will not accept any degree of protection for itself and its contractors that is weaker than the protection granted in the Umbrella Agreement.107

The expiration of the 1998 PSTA and the unlikely conclusion of a liability protocol pursuant to the 2000 PMDA will result in plutonium disposition activities grinding to a halt.108 Given the small amount of weapons-grade plutonium that is necessary to construct a nuclear weapon and the inadequate security measures employed at Russian storage installations,109 plutonium disposition is one of the best methods of reducing the risk of terrorists acquiring material that could be used to construct a nuclear device.110

II. THE CURRENT LIABILITY CONTROVERSY: THE NEED FOR A NEW APPROACH

A. The Problem of Establishing Liability Provisions for Bilateral Nonproliferation Agreements

There are a number of issues that make negotiating liability provisions that govern bilateral nonproliferation assistance programs extremely difficult. The sheer number of parties with diverse interests who all seek some degree of protection for themselves makes it quite onerous to craft liability provisions that are satisfactory to all parties involved. In addition, the magnitude and

107. Bunn, supra note 21; see also Bernier, supra note 76, at 92; Fiorill, Liability Dispute, supra note 17. For a thorough discussion of the positions of the United States and Russia, see infra Part II.C-D.

108. Bunn, supra note 21 (discussing the liability hurdles that are delaying progress on cooperative plutonium disposition projects); see also Slevin, supra note 101 (indicating that the liability dispute is the primary stumbling block that is preventing progress on cooperative plutonium disposition).

109. See supra notes 34-44 and accompanying text.

110. See Rhodes & Beller, supra note 90, at 42 (arguing that converting plutonium into MOX fuel for reactors will prevent covert proliferation); Position Statement, Am. Nuclear Soc'y, supra note 91 (identifying the nonproliferation benefits of plutonium disposition); Press Release, Nuclear Regulatory Comm'n, supra note 91 (same).
risk of nuclear incidents raise the stakes for all parties because the potential injuries and damage claims that could result from incidents occurring pursuant to nonproliferation activities are very significant.

1. Interested Parties

Given the extent of damage that would arise in the event of a nuclear incident that occurred pursuant to the implementation of nonproliferation activities, many parties have strong and diverse interests in the liability provisions that govern CTR projects. The victims of nuclear accidents are primarily interested in litigation procedures that make recovery quick and simple, "including those that clarify the appropriate jurisdiction[,] ... designate the proper defendant, and establish the relevant standard of care." It is also critical that the liability scheme ensures that all victims of a nuclear accident will be fully compensated for any damage caused by such an accident. Tort law in both the United States and Russia is based on the general principle that it is socially beneficial to induce responsibility by shifting the full cost of any damage or injury to the party that causes the harm, so as to compensate all innocent victims fully.

111. For the purposes of this Note, the term "nuclear incidents" is used to refer to the wide range of damage-causing events—including those that are caused by negligence—that could occur pursuant to the implementation of CTR projects. Examples include intentional or accidental detonations of nuclear weapons, meltdowns or other accidents at nuclear power plants, terrorist attacks against nuclear plants or storage facilities, nuclear transportation accidents, and nuclear waste spills. See NUCLEAR THREAT REDUCTION CAMPAIGN, Liability Issues in WMD Threat-Reduction and Nonproliferation Programs in Russia, in WEAPONS OF MASS DESTRUCTION REFERENCE GUIDE ch. II, pt. 18 at 2, http://www.nuclearthreatreduction.org/relatives/22321.pdf (last visited Feb. 5, 2006) (identifying a number of potential events that could cause nuclear damage); Brubaker & Spector, supra note 18, at 6-7 (same).

112. See infra Part IIA.2.

113. Brubaker & Spector, supra note 18, at 5.

114. Id.

115. See, e.g., KENNETH S. ABRAHAM, THE FORMS AND FUNCTIONS OF TORT LAW 14-20 (2d ed. 2002) (identifying corrective justice, deterrence, loss distribution, compensation, and redress of social grievances as the interrelated goals that U.S. tort law seeks to accomplish); WILLIAM L. PROSSER, LAW OF TORTS 7-11 (4th ed. 1971) (indicating that the primary functions of tort law in the United States are compensation for the victim from the party responsible for causing damage and the encouragement of socially responsible behavior); GENNADY M. DANILENKO & WILLIAM BURNHAM, LAW AND LEGAL SYSTEM OF THE RUSSIAN FEDERATION 343-45 (1999) (articulating the general principles of Russian tort law, including holding those who
The Russian government has a strong interest in receiving nonproliferation assistance to reduce the nascent nuclear threat that is emerging because of the defunct state of its nuclear infrastructure and custodial system. On the other hand, Russia has an interest in avoiding exposure to significant liability for incidents that are caused by contractors from foreign nations, whose actions the Russian government cannot control. Because the victims of a nuclear incident involving the implementation of nonproliferation agreements are likely to be Russian citizens, Russia shares the interest that the victims of nuclear accidents have in ensuring that they are compensated to the full extent of their injuries. The operators of Russian nuclear facilities are generally agents of the government, or at the very least, they operate under the authority of Minatom, and accordingly, their interests overlap with those of the Russian government.

Nations that provide nonproliferation assistance to Russia are primarily interested in reducing the risks that result from Russia's crumbling nuclear infrastructure, including transboundary environmental damage arising from accidents and "dangers that might emerge from the leakage of Russian fissile material to third parties." On the other hand, donor states have an incredibly strong interest in avoiding extensive liability for the significant damages that might result from implementation of nonproliferation assistance programs. If nonproliferation assistance creates donor state liability, these states may choose to end their assistance programs because they are unlikely to bear the costs of most nuclear

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cause injury responsible for fully compensating the victims). For further discussion of Russian tort law, see infra notes 137-41 and accompanying text.

116. Brubaker & Spector, supra note 18, at 5 (noting that Russia acknowledges the various post-Soviet nuclear threats that are emerging and seeks to address the problem). For a detailed discussion of the threats to international security that have emerged in Russia following the collapse of the Soviet Union, see supra Part I.A.

117. Brubaker & Spector, supra note 18, at 5-6. The position that Russia has taken recently concerning the provisions of international nonproliferation assistance agreements that will govern foreign contractor liability reflects this interest. See infra Part II.D.

118. See Brubaker & Spector, supra note 18, at 5-6; see also supra text accompanying notes 115-16.


120. Id. at 4-5. For a detailed discussion of the threat of nuclear leakage that has emerged in Russia following the collapse of the Soviet Union, see supra Part I.A.
incidents that would occur in the absence of such programs.\textsuperscript{121} Of course, donor nations share the interest of victims in full compensation, at least to the extent that their citizens may be harmed as the result of nuclear incidents.\textsuperscript{122} Donor state equipment suppliers and contractors are primarily interested in profiting from nonproliferation assistance programs, and thus, they seek to avoid potential liability that could require them to pay damages that would far exceed their profits.\textsuperscript{123} Because of the significant risks that accompany nuclear projects, suppliers and contractors have sought extremely strong assurances that Russia or the donor state would indemnify them in the event of an incident.\textsuperscript{124}

2. The Impact and Likelihood of Nuclear Incidents

The magnitude of the damage caused by a nuclear incident can be very extensive. A meltdown like the one that occurred at Chernobyl on April 26, 1986, could result in hundreds of thousands of deaths and cause damages in excess of several hundred billion dollars.\textsuperscript{125}

\textsuperscript{121} For example, in the absence of providing assistance to Russia, a nation such as the United States and its citizens may suffer only several million dollars of uncompensated damage if a nuclear meltdown were to occur in Russia. On the other hand, if the United States provided assistance to Russia for nuclear plant safety upgrades and the same nuclear plant were to meltdown, the United States may be liable for several billion dollars of damage—enough to compensate all of the victims of the meltdown. Brubaker & Spector, supra note 18, at 5 ("In the absence of providing safety assistance for Russian nuclear power plants, for example, the United States might risk suffering $50 million in uncompensated contamination damage to U.S. territory from a Russian nuclear power plant accident."); see also infra notes 147-53 and accompanying text.

\textsuperscript{122} See Brubaker & Spector, supra note 18, at 5 ("[D]onor governments also have an interest in assured compensation if their citizens, economy, or environment suffer nuclear damage because of Russian nuclear activities that may be receiving assistance."); see also supra text accompanying notes 114-15.

\textsuperscript{123} Brubaker and Spector summarize the economic cost-benefit analysis facing donor state equipment suppliers and contractors:

Private-entity equipment suppliers and contractors are beneficiaries of nuclear assistance programs through the profits they make in providing goods and services to support such efforts. However, because nuclear activities are inherently dangerous and carry the potential for liability that far exceeds potential profits, vendors have sought special legal assurances ... that protect them from these legal risks.

Brubaker & Spector, supra note 18, at 5.

\textsuperscript{124} See supra note 124.

\textsuperscript{125} Brubaker & Spector, supra note 18, at 1 (citing an OECD study that estimated the damages of a nuclear meltdown at $100 billion); Kate O’Neill & William C.G. Burns, Nuclear
Beyond the short-term loss of human life and damage to property, there are long-term costs related to environmental damage that accompany the release of radiation and dispersal of nuclear material in a nuclear incident.\textsuperscript{126} Even minor incidents that fall short of a full-scale meltdown are likely to cause damages in excess of several hundred million dollars.\textsuperscript{127} Activities involving plutonium are particularly risky given the potency of the substance,\textsuperscript{128} and the risk and impact of reactor meltdowns may significantly increase when MOX is used as the reactor fuel.\textsuperscript{129} Moreover, nuclear incidents may be very likely to occur in the CTR context. Given the deterioration of Russia's nuclear security infrastructure over the past decade, there is a significant risk of a terrorist attack at a Russian nuclear facility or detonation of a nuclear device that was constructed with stolen Russian fissile material because of inadequate security measures and the lack of funding for upkeep of nuclear plants and storage facilities.\textsuperscript{130} The damages that would arise from such an act of nuclear terrorism would be enormous.\textsuperscript{131} Accordingly, the stakes are high for all interested parties during the negotiation of the liability provisions that will govern how and by whom multi-billion dollar damage claims will be paid in the event that a catastrophic incident occurs pursuant to the implementation of a CTR project.\textsuperscript{132}

\textit{Power Comes Out Swinging, SAN DIEGO UNION-TRIB., May 16, 2001, at B7} (indicating that an accident like the meltdown at Chernobyl could cause more than $250 billion in damages and kill more than 10,000 people).


127. \textit{Id.} (indicating that damage claims from nuclear waste spills or transportation accidents could run as high as hundreds of millions of dollars).

128. See Lyman, \textit{supra} note 106 (articulating the unique danger of an accident involving plutonium because of the heightened actinide concentration in fuel containing the substance); see also Helen Caldicott, \textit{Medical Implications of Nuclear Power}, SUSTAINABLE CITY, Sept. 3, 1998, \url{http://www.sustainable-city.org/articles/nuclear.htm} ("Because of its potent cancer producing properties the acceptable body dose [of plutonium] has been set at less than 1 millionth of a gram .... [One] lb. of plutonium, universally dispersed, would be adequate to kill every man, woman and child on earth.").

129. See \textit{supra} note 106 and accompanying text.

130. See \textit{supra} notes 34-38 and accompanying text.

131. See \textit{supra} note 49 and accompanying text.

132. See Brubaker & Spector, \textit{supra} note 18, at 6-7. The current liability dispute would be much more "easily resolved if only a few million dollars were at risk, rather than many billions." \textit{Id.} at 6. Moreover, liability for damages arising from mishaps involving nuclear and other WMD and materials can be an enormous issue. Any organization or business will
B. Applicable Law Absent an Agreement on Liability

Absent explicit liability provisions that govern which party or parties will be liable in the event of a nuclear incident that occurs during implementation of a nonproliferation assistance program, and to what extent they would be liable, it is uncertain what law would provide the answer. "[U]nder traditional tort [and customary international law], injured parties could bring a lawsuit against any party that was involved in the activity that led to the injury," and "[t]he suit could be brought in any court with jurisdiction over the party being sued."\(^3\) Conflict of laws rules of the state in which the suit was brought would dictate which state's domestic laws would apply.\(^3\) Given that most victims of a nuclear incident that occurs pursuant to the implementation of nonproliferation projects in Russia will be Russian citizens, it is likely that suits for damages would be brought in Russian courts and that jurisdiction would be proper.\(^3\) In the case of a suit that is brought in Russian courts, the understandably be reluctant to run any risk at all of being held liable when a Chernobyl-type incident [or] the detonation of a nuclear device ... occurs in a manner that can in any way be connected to its activity.... The resulting claims obviously could put any private firm out of business and be a major, if not overwhelming, burden for any country.

It is these types of calamitous incidents ... that make this such a high-stakes concern.

NUCLEAR THREAT REDUCTION CAMPAIGN, supra note 111, ch. II, pt. 18 at 2. It is important to note, however, that some CTR projects are significantly less risky than others, which may make the negotiation of mutually acceptable liability provisions simpler in those cases. See infra notes 269-71 and accompanying text.


134. Id.

135. Because the victims of nuclear incidents seek quick and simple resolution of their claims, it seems logical that the many Russian victims would bring suit in Russian courts and not foreign courts. See supra note 114 and accompanying text. The jurisdiction of Russian courts over tort claims brought by Russian citizens against foreign contractors is proper under Russian domestic law.

... Jurisdiction depends on the presence of the defendant or his or her property in Russia....

... The Civil Procedure Code establishes several additional criteria that could be used by the Russian courts as grounds for asserting wider jurisdiction over defendants located in other countries. These are based on the fact that the dispute has some connection to the territory of Russia.... Suits resulting from ... torts may be filed at the place ... where harm was caused.
conflict of laws provisions of the Russian Civil Code indicate that Russian tort law would provide the applicable standards, absent an international agreement that provides otherwise.\textsuperscript{136}

Russian principles of tort liability are outlined in the Russian Civil Code, which provides that an individual who is harmed by the act or omission of another is to be compensated for economic and noneconomic losses.\textsuperscript{137} A defendant who is not at fault may still be held liable under a theory of strict liability for engaging in conduct that is inherently risky and that poses a serious threat to the environment.\textsuperscript{138} Moreover, even if a defendant is insured, the defendant may be responsible for paying the difference between the victims' full damages and the insurance coverage.\textsuperscript{139} These liability

DANILENKO & BURNHAM, supra note 115, at 413 (describing articles 117 and 118 of Russia's Civil Procedure Code). Accordingly, Russian courts can properly exercise jurisdiction over foreign contractors who are present in Russia or whose actions gave rise to harm in Russia, both of which are likely true for contractors who are involved with CTR activities.\textsuperscript{136} Grazhdanskii Kodeks RF [GK] [Civil Code], art. 1186, translated in THE CIVIL CODE OF RUSSIAN FEDERATION pt. 3, at 37 (Peter B. Maggs & A.N. Zhiltsov eds. & trans., 2002) [hereinafter CIVIL CODE]; see also WILLIAM E. BUTLER, RUSSIAN LAW 616-18 (2d ed. 2003) (discussing the application of the conflict of laws provisions in the Civil Code of the Russian Federation and indicating that foreign laws may be applied in Russia if an international agreement so provides, as per Civil Code article 1186); DANILENKO & BURNHAM, supra note 115, at 398-410 (discussing Russian conflict of laws rules). Absent an international agreement that provides otherwise, it is clear that Russian courts would apply Russian tort law. Danilenko and Burnham describe the Russian domestic conflict of laws provisions concerning tort claims as providing that

the rights and duties of parties in obligations arising as a consequence of causing harm are determined according to the law of the country where the action or other circumstance serving as a basis for an action concerning compensation of harm took place. This broad clause may cover both the place of the wrong and the place where the consequences of the wrong are felt.


137. Grazhdanskii Kodeks RF [GK] [Civil Code], art. 1064, translated in CIVIL CODE, supra note 137, pt. 2, at 361 (prescribing compensation); DANILENKO & BURNHAM, supra note 115, at 345 (discussing Civil Code article 1064). All of the rules governing tort liability and compensation in Russia are found in Chapter 59 of the Civil Code. Grazhdanskii Kodeks RF [GK] [Civil Code] ch. 59, translated in CIVIL CODE, supra note 137, pt. 2, at 361-75.

138. Grazhdanskii Kodeks RF [GK] [Civil Code], art. 1079, translated in CIVIL CODE, supra note 137, pt. 2, at 366 (prescribing strict liability); DANILENKO & BURNHAM, supra note 115, at 347-54 (discussing Civil Code article 1079). Nuclear activities probably give rise to strict liability because they are very risky, and nuclear incidents are likely to cause environmental harm. See supra notes 126-31 and accompanying text.

139. Grazhdanskii Kodeks RF [GK] [Civil Code], art. 1072, translated in CIVIL CODE, supra note 137, pt. 2, at 364.
provisions of the Russian Civil Code are all very broad and could expose the defendants in suits related to nonproliferation assistance programs to open-ended liability and unlimited damage claims. 140

C. The Position of the U.S. Government

The position of the U.S. government regarding the liability provisions that govern nonproliferation assistance programs—including the NCI, the PSTA, and the PMDA—reflects the interests of most donor governments. The United States’ position is primarily characterized by a demand that Russia accept the sweeping liability provisions of the Umbrella Agreement, or virtually identical provisions, for all bilateral CTR assistance programs. 141 The United States points to Russia’s acceptance of the Umbrella Agreement for the initial CTR projects in the early 1990s as evidence that the standard established therein should be the norm. 142 Specifically, the United States is seeking language that would absolve it and any U.S. contractors of liability, even in the event that they intentionally cause an incident. 143 The United States also requires that

140. See infra notes 158-62 and accompanying text.
141. See, e.g., Brubaker & Spector, supra note 18, at 2; Ann MacLachlan, Liability Coverage at Issue in Expiration of U.S.-Russian Accord, NUCLEAR FUEL, July 7, 2003, at 3; Fiorill, Legal Issues, supra note 17; Fiorill, Liability Dispute, supra note 17.
142. See Fiorill, Legal Issues, supra note 17 (quoting Leonard Spector, director of the Washington office of the Monterey Institute of International Studies at the Center for Nonproliferation Studies, describing the Bush administration’s insistence on Russian acceptance of liability provisions that mirror those of the “tried-and-true” Umbrella Agreement approach).
143. Matthew Bunn notes that
[the PSTA’s liability] provisions did not include language that would absolve the United States and its contractors of responsibility even if they cause an accident intentionally, which is included in the [Umbrella Agreement] .... Russia is absolutely unwilling to again agree to language that would leave the Russian government liable for intentional sabotage by U.S. contractors, while the U.S. is unwilling to accept liability language that left the determination of what was intentional sabotage solely up to Russian courts .... Bunn, supra note 21; see also MacLachlan, supra note 141, at 3; Small Steps Toward Nuclear Control, DEF. NEWS, Sept. 19, 2005, at 29 (“The United States insisted on zero liability—even for damage caused by intentional sabotage by U.S. personnel.”); Joe Fiorill, U.S. Fears “Manipulation” of Russian Legal System in Joint Nuclear Security Efforts, GLOBAL SECURITY NEWSWIRE, Jan. 14, 2004, http://www.nti.org/d_newswire/issues/2004_1_14.html [hereinafter Fiorill, U.S. Fears Manipulation] (“The Russian Federation should provide indemnity against liability resulting from accidents and problems [that extends to] deliberate acts of individuals” (alteration in original) (quoting Linton Brooks, Director, National Nuclear
Russia indemnify all U.S. contractors against any third-party claims that are linked to an incident that occurs while nonproliferation activities are being implemented,\(^{144}\) even though such a provision may be unenforceable in U.S. courts.\(^ {145}\)

The United States’ position is premised on three major arguments. First, the United States argues that Russia should shoulder the burden for virtually any damage caused as a result of implementing projects funded with U.S. assistance because in the absence of such assistance, Russia would be financially responsible for all damages arising from incidents occurring in Russian territory.\(^ {146}\)

For example, if a reactor accident like Chernobyl were to occur in Russia today, the Russian government or the operators of the plant would be held responsible for paying damages to both Russian and non-Russian individuals that were harmed as a result of negligent maintenance of the reactor.\(^ {147}\) Given that the consequences of a nuclear incident in Russia could affect the United States or its interests,\(^ {148}\) and given the lack of capital in Russia to cover extensive damage claims that would result,\(^ {149}\) the United States might risk suffering some minimal uncompensated damage in the event of a Russian accident.\(^ {150}\) If U.S. assistance to Russia “exposed the United States to potential liability for all nuclear damage from such an accident, its risk could be many billions of dollars, orders of magnitude more than were no aid provided.”\(^ {151}\) Accordingly, it makes little sense for the United States to provide assistance to

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\(^{144}\) The original Umbrella Agreement contained third-party indemnification clauses, and the United States has refused to abandon these provisions. See Brubaker & Spector, supra note 18, at 19; see also MacLachlan, supra note 141, at 3.

\(^{145}\) See Brubaker & Spector, supra note 18, at 23 (arguing that the Umbrella Agreement’s third-party indemnification clause may be unenforceable in U.S. courts because it “lack[s] good faith [and was] the product of grossly unequal bargaining power”).

\(^{146}\) Id. at 5. The Russian government or Russian citizens would be held liable for incidents that occur in Russia, such as a nuclear plant meltdown or detonation of a nuclear device, and for incidents that occur outside of Russia but were facilitated by intentional or negligent conduct of Russian parties. Id.

\(^{147}\) Id.

\(^{148}\) See supra notes 121-23 and accompanying text.

\(^{149}\) See infra notes 170-72 and accompanying text.

\(^{150}\) Brubaker & Spector, supra note 18, at 5 (suggesting that the United States may suffer some uncompensated harm in the event of an incident in Russia that affected its citizens or its interests but was not caused by the actions of any U.S. personnel).

\(^{151}\) Id.; see also supra note 121 and accompanying text.
Russia if doing so would expose the United States to greater liability than if the assistance were not given. In sum, Russia would be liable for covering damages caused by any nuclear incidents that occurred in Russian territory, so Russia should also shoulder the responsibility for paying damages that result from cooperative efforts to reduce the risk of such incidents.

Second, the United States argues that very broad liability protections, like those contained in the Umbrella Agreement, are necessary for the existence of bilateral nonproliferation programs in the first place. U.S. contractors will not be willing to participate in nonproliferation programs unless they are exempt from all liability. Given that the sole interest of U.S. contractors is to profit from participation in nonproliferation activities, lack of adequate protection from liability makes participation entirely unattractive because of the significant risk of a nuclear accident occurring and the massive damage claims that would arise if an accident did occur. The United States' primary interest in providing nonproliferation assistance to Russia is to reduce the risks to international security arising from Russia's crumbling nuclear infrastructure. If weak liability provisions were to sound the death knell for all nonproliferation programs by providing a disincentive for contractors and the government to provide aid and participate, then the United States' primary interest is not served.

Third, the United States argues that even a limited exception to blanket exemption from suit is improper given the state of the

152. See supra note 121 and accompanying text.
153. See Brubaker & Spector, supra note 18, at 5; see also Fiorill, U.S. Fears Manipulation, supra note 143.
154. See supra notes 124-25 and accompanying text; infra note 159.
155. See supra note 120 and accompanying text.
156. Recently, Russia has opposed blanket liability protections for donor state governments, suppliers, and equipment contractors, arguing that it should not be required to waive claims against or indemnify any parties over whom it exercises no control and who cause damage as the result of premeditated action. See NUCLEAR THREAT REDUCTION CAMPAIGN, supra note 111, at 1, 7; Brubaker & Spector, supra note 18, at 5-6; Bunn, supra note 21; Fiorill, Liability Dispute, supra note 17; Fiorill, U.S. Fears Manipulation, supra note 143. Russia has, however, entered into bilateral and multilateral agreements that include blanket liability protections, as long as they except premeditated actions from protection. See supra note 78 (providing the liability provisions of the NCD); supra notes 100-01 (providing the liability provisions of the PSTA); infra note 216 (providing the liability provisions of the MNEPR).
Russian legal system. According to U.S. government officials, the fledgling Russian legal system that emerged after the collapse of the Soviet Union is dominated by corruption that could expose any U.S. personnel or contractors to unfair treatment.\(^\text{157}\) This perceived unreliability of the Russian legal system bolsters U.S. contractors' argument that they will not participate in nonproliferation programs if they are not given broad exemption from liability.\(^\text{158}\) If a contractor is potentially subject to prosecution in the Russian legal system, the broadly worded and uncertain laws\(^\text{159}\) and risk of "manipulation"\(^\text{160}\) that accompany such a prosecution increase the risk that the contractor will be exposed to unlimited liability.\(^\text{161}\) Specifically, the U.S. government and U.S. contractors worry about how the Russian courts will interpret the term "premeditated," fearing that an expansive definition of the term will expose them to significant liability, despite the seemingly limited nature of the exception.\(^\text{162}\) As mentioned above, the interests of the United States

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157. Fiorill, *U.S. Fears Manipulation*, supra note 143 (articulating the position of the U.S. government that the Russian legal system can be easily manipulated, risking unfair treatment of U.S. contractors); Sebastian Sprenger, *Russian Interagency Review of Liabilities Deal Expected to End Soon*, INSIDE MISSILE DEF., Oct. 26, 2005, available at http://defense.iwpnewsstand.com/showdoc.asp?docid=MISSILE-11-22-4 ("Washington [is] reluctant to submit U.S. personnel to the Russian court system, which could lead to 'either political or economic harassment from either individuals in Russia or the Russian government' ...." (quoting an unnamed State Department source)).


159. See supra notes 138-41 and accompanying text (describing Russia's broadly worded tort laws).


161. See Brubaker & Spector, supra note 18, at 10 (indicating that potential liability for claims against contractors could be open-ended, depending on which laws are applied to decide the claim); see also NUCLEAR THREAT REDUCTION CAMPAIGN, supra note 111, ch. II, pt. 18 at 2, 7; Fiorill, *U.S. Fears Manipulation*, supra note 143.

162. Joe Fiorill of the Nuclear Threat Initiative describes the United States' concern by citing an unnamed government official:

"The key question behind U.S. concerns, according to one U.S. official familiar with the situation, is, 'What's a premeditated act? If something goes wrong, the Russians can say, 'That was a premeditated act.' ... The Russians have this exception, and if something goes wrong -- you know, someone could say Chernobyl was a deliberate act,' the official said."
regarding implementation of nonproliferation agreements are not served if contractors are unwilling to participate.

The United States' position regarding liability is characterized by an unwavering demand for broad protection for itself and its contractors. This policy largely serves the interests of the United States, reducing the risk of a catastrophic incident occurring because of Russia's crumbling nuclear infrastructure by providing an incentive for contractors to participate in implementing nonproliferation agreements, while limiting liability for itself and its contractors. By default, the United States' position would leave Russia liable for compensating any victims who brought damage claims that resulted from nuclear accidents incidental to nonproliferation agreements. This outcome may not serve the United States' interest in ensuring that any U.S. victims of such an accident are fully compensated for their injuries, unless the United States compensated its own citizens for any damage suffered because of Russia's financial inability to pay significant claims.

Fiorill, *U.S. Fears Manipulation*, supra note 143 (omission in original). The Nuclear Threat Reduction Campaign provides a hypothetical situation that demonstrates the United States' fear:

There is the concern that a Russian tribunal might, for example, decide that if a U.S. firm, aware of the risks involved in destroying chemical warfare material, went ahead with a program for destroying it and an accident occurred or some of it was stolen, the intentional act of proceeding with the program might be construed as the premeditated risking of the lives or health of those who might be injured and hold the company liable. That, of course, would be a grossly overly broad application of "premeditated" injury, but a corrupt judge might, it is feared, make such a ruling.

*NUCLEAR THREAT REDUCTION CAMPAIGN, supra* note 111, ch. II, pt. 18 at 7.

163. *Brubaker & Spector, supra* note 18, at 4-5.

164. See *id.* at 22 (discussing what would take place if a nuclear incident occurred under the CTR Umbrella Agreement, which provides complete liability protection for the United States and its contractors).

165. *Id.* at 5, 22-23 (discussing the weak state of Russia's insurance industry and the lack of available capital to pay claims); see *infra* notes 170-72 and accompanying text. If Russia were unable to fully compensate U.S. citizens who were the victims of a nuclear incident that occurred pursuant to the implementation of CTR activities, the United States could cover any damage shortfalls for its citizens, and the amount of such claims would only be a fraction of the total damage caused. See *supra* notes 121, 147-53 and accompanying text.
D. The Position of the Russian Government

Although the Russian government initially accepted broad liability provisions exempting the United States and its contractors from any liability arising from implementation of nonproliferation activities in the Umbrella Agreement, it has recently retreated from that position. As evidenced by the more limited liability protections articulated in the NCI and the PSTA, as well as the language of the recently concluded Multilateral Nuclear Environmental Program in the Russian Federation (MNEPR), Russia now supports indemnifying and exempting donor governments and personnel from liability in all instances except those in which an incident is caused by "premeditated actions." Although the United States hopes that the Duma will accept the Umbrella Agreement as the governing document for all bilateral nonproliferation assistance agreements, the prospect of that is very slim.

Russia advances three arguments supporting its position. First, Russia is unlikely to have the resources to compensate fully the victims who make a significant claim for damages because of Russia's limited financial resources. The mere fact that Russia needs international assistance to improve the security of its nuclear infrastructure indicates the lack of capital that exists to pay compensation for a nuclear accident in excess of hundreds of millions of dollars. The lack of capital in Russia's fledgling insurance markets compounds this problem.

Second, Russia is concerned that providing broad indemnity for equipment suppliers and contractors that implement nonproliferation agreements may

166. See supra notes 64-70 and accompanying text.
168. See supra note 156; infra notes 213-20 and accompanying text.
169. See MacLachlan, supra note 141, at 3; Bunn, supra note 21; Fiorill, Legal Issues, supra note 17; Fiorill, Liability Dispute, supra note 17; NUCLEAR THREAT REDUCTION CAMPAIGN, supra note 111, ch. II, pt. 18 at 2-3.
171. Id. at 2 ("If Russia possessed the ability to marshal the billions of dollars that might be needed to pay compensation for a major nuclear accident, it would not need Western nonproliferation assistance in the first place.").
172. Id. at 22.
increase the likelihood of a catastrophic incident, as there may be an incentive, or at least no disincentive, to use lower quality materials and procedures.\footnote{173} Third, Russia does not want to assume liability for damages that are intentionally caused by parties over which it cannot exercise any control, such as foreign contractors\footnote{174} or terrorists.\footnote{175}

Russia's interests are largely served by its position on liability issues that govern nonproliferation assistance programs. Russia has a clear interest in receiving assistance to secure and dispose of its nuclear material, as well as assistance to consolidate its nuclear infrastructure, because implementing bilateral nonproliferation agreements can reduce the risk of catastrophic incidents that would cause extensive harm to its population.\footnote{176} Ensuring that there are quality control standards that govern the materials and services of foreign equipment suppliers and contractors is necessary for effective nonproliferation activities.\footnote{177} Russia has a significant interest in ensuring that there is adequate compensation to cover fully any claims by the victims of nuclear incidents because they are likely to be Russian citizens.\footnote{178} Russia's policy thus seeks to balance inducing other nations to provide nonproliferation assistance against avoiding accepting all responsibility for every incident that may arise pursuant to implementation of nonproliferation programs and the attendant risks of compensation shortfalls that would accompany accepting responsibility.

\footnote{173} Id. at 5 ("Russia may have legitimate concerns that equipment or services provided by donor states may be defective and lead to incidents causing significant nuclear damage."); see also Beard, supra note 13, at 918-20 (discussing protections against the use of substandard equipment and materials in CTR implementing agreements).

\footnote{174} See supra note 156; see also Brubaker & Spector, supra note 18, at 6 ("It is also possible that an employee of a Western contractor not under Russian supervision might deliberately and maliciously act to cause nuclear damage. Under these circumstances, it is understandable why Russia would resist accepting unconditionally all liability for such damages.").

\footnote{175} See Fiorill, Liability Dispute, supra note 17 ("Citing the possibility of an al-Qaeda strike on a Russian nuclear facility, [Russian Ambassador At-Large] Antonov criticized the United States for seeking to make Russia liable for the results of premeditated acts.").

\footnote{176} See supra notes 117-20 and accompanying text. To ensure that foreign contractors are willing to participate in CTR activities, they must have assurances that they will be protected from extensive liability. See Brubaker & Spector, supra note 18, at 5; see also Fiorill, U.S. Fears Manipulation, supra note 143; supra notes 124-25, 154-55 and accompanying text.

\footnote{177} See supra note 173 and accompanying text.

\footnote{178} See supra note 118 and accompanying text.
III. THE PATH FORWARD: POTENTIAL SOLUTIONS TO THE LIABILITY IMPSSE

Given the interests of both the United States and Russia, neither country is likely to simply adopt the other's position regarding liability provisions for nonproliferation assistance programs. The fact that agreements such as the NCI and the PSTA, both of which the United States and Russia have acknowledged to be worthwhile programs, have been allowed to expire because of liability disputes is indicative of the importance to both countries of promulgating liability provisions that adequately protect their interests. Both countries have reasonable arguments supporting their positions, and it seems that the impasse will only be resolved if a new approach is taken that looks to creative solutions that bridge the gap between the countries' positions, effectively protecting both states' interests to a significant degree.

A. Application of Existing Civilian Nuclear Power Liability Agreements

An extensive body of international law covers liability issues regarding civilian nuclear power accidents that have transboundary effects.

179. See supra Part II.A.1.
180. See supra Part II.A.2 (discussing the high stakes involved in negotiating liability provisions to govern CTR activities).
181. See supra Part II.C-D (discussing the arguments advanced by both parties in support of their respective positions).
182. Matthew Bunn notes that if there is to be any way out, it will likely have to involve some process that both sides can agree on relating to how to determine whether intentional sabotage was the cause of an accident, or some means to address liability in that case without either the Russian government nor [sic] the U.S. government picking up the entire tab.

Bunn, supra note 21; see also Fiorill, Liability Dispute, supra note 17 (quoting Rose Gottemoeller of the Carnegie Endowment for International Peace as saying that there is "good reason to be looking at some new and innovative approaches to tackling the liability problem"). See generally Brubaker & Spector, supra note 18 (arguing for a new approach to negotiating liability provisions that will govern CTR activities).
183. For an in-depth discussion of the entire legal regime that governs liability for civilian nuclear accidents, see Brubaker & Spector, supra note 18, at 11-17. See generally Karen McMillan, Note, Strengthening the International Legal Framework for Nuclear Energy, 13
facilities are held strictly liable for any damages arising from accidents at their facilities, although there are procedural and substantive limits on claims that may be brought, including statutes of limitations, liability limits, and jurisdictional requirements. The international legal framework governing liability for civilian nuclear power accidents also prescribes pooling agreements and minimum levels of insurance coverage that operators of nuclear facilities must purchase, and nations that are parties to these agreements are required to incorporate the insurance provisions into their domestic laws. This legal regime may offer some assistance in dealing with liability concerns that surround implementation of bilateral nonproliferation assistance agreements.

The international civilian nuclear power liability regime’s minimum insurance requirements may shed some light on the costliness of nuclear accidents and on how much compensation states ought to be expected to provide if a serious accident occurs.

The regime also indicates that pooling agreements may be a viable method for providing full compensation to all victims of serious nuclear accidents.

Moreover, the body of international law that governs civilian nuclear accidents with transboundary effects is already well developed, and given the nature of radiation spread resulting from

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184. Brubaker & Spector, supra note 18, at 11 (articulating the general principles of liability that govern operation of civilian nuclear power plants).

185. The 1963 Vienna Convention requires the operators of civilian nuclear power plants to hold at least $80 million in accident insurance coverage, or the state where the plant is located must make up the difference. Id. at 12. The 1997 protocol to the Vienna Convention raises this figure to $400 million, “but it has not yet entered into force.” Id. at 13.

186. Id. at 13-14.

187. Id. at 17 (noting that the international civilian nuclear power liability regime provides guidance regarding what levels of liability a state engaging in nuclear activities can reasonably be expected to bear).

188. Id. (arguing that “[t]he evolving consensus, seen in the 1997 Vienna Protocol ... appears to be that following a major nuclear incident, a state ... can be expected to take financial responsibility for $400 million or more of such claims”).

189. See id. (indicating that states can reasonably expect pooling agreements to cover any damage claims arising from a nuclear accident in excess of the $400 million required minimum insurance coverage).
a nuclear accident, any accident is likely to have some transboundary effects. Accordingly, any accidents that occur at civilian nuclear facilities may fall under the provisions of this regime, although compensation is only available to states that are parties to the treaties that constitute the regime. The utility of this international civilian nuclear power liability regime may be limited, therefore, because many states, including the major nuclear power states, have not ratified most of the international legal documents that constitute the regime. Most states have, however, adopted some form of domestic legal provisions that would provide compensation to all victims in the event of a nuclear reactor accident in their respective state.

In March 2005, Russia ratified the 1963 Vienna Convention, which is the seminal document in the international civilian nuclear power liability regime. Unfortunately, Russia's ratification does not provide much assistance in resolving the liability dispute that currently exists between the United States and Russia concerning nonproliferation assistance programs. First, the Duma must still pass domestic laws both incorporating the provisions of the Vienna Convention and specifying coverage levels for various activities before its provisions will go into effect. Second, the Vienna Convention only covers civilian activities, and most of the nonproliferation work involves military facilities. Third, the required

190. Id. at 4-5 (noting that the spread of radiation following a nuclear incident in Russia would likely affect neighboring states).
191. Id. at 15-16.
192. Id. at 16 (indicating that the United States, Canada, China, South Korea, and Japan have not ratified the treaties that constitute the civilian nuclear power liability regime).
193. Id.
196. See Brubaker & Spector, supra note 18, at 16. The plutonium disposition projects contemplate the elimination of Russian surplus military-origin, weapons-grade plutonium by fabricating plutonium with classified characteristics into MOX fuel to be burned as fuel in civilian nuclear power plants. See id. at 7; Bunn, supra note 21. Accordingly, these programs have both civilian and military components. Similarly, the NCI focuses on downsizing the Russian military's nuclear weapons complex by providing nonmilitary employment
minimum liability limits mandated by the Vienna Convention are too low to adequately compensate victims in the event of a serious civilian accident of the kind that is likely to occur pursuant to a nonproliferation assistance program. As such, the existing international legal regime that governs liability for civilian nuclear power accidents provides only minimal insight into how to deal with the liability concerns that surround implementation of bilateral nonproliferation projects.

B. The European Experience

The United States has been the primary donor of nonproliferation assistance to Russia, but other nations have also recognized the threat of Russia's crumbling nuclear infrastructure and have sought to conclude agreements that offer assistance to deal with those problems. The experience of European nations is indicative of the types of liability provisions that are acceptable to Russia, and accordingly, that experience may provide insight into the types of agreements that could break the current liability impasse that exists between the United States and Russia. Occasionally, liability disputes have arisen during the negotiation of Russia's agreements with European nations, but they have generally impeded progress much less than during bilateral U.S.-Russian negotiations.

The 1995 European Bank of Reconstruction and Development Agreement (EBRD Agreement) between several European nations and Russia governs assistance from those nations to Russia for the improvement of civilian nuclear plant safety. In the EBRD opportunities to former Russian military nuclear scientists. See Bunn, "supra note 20.

197. Breus & MacLachlan, "supra note 194, at 6 (noting that Russia's ratification of the Vienna Convention is merely symbolic because the liability limits are too low to provide adequate compensation for victims and because contractors will still be wary of engaging in risky activities in Russia); Brubaker & Spector, "supra note 18, at 16 ("The minimum limits of liability and financial protection required by the Vienna Convention are far too low to provide adequate compensation for the more serious civilian nuclear incidents that could result from the aid programs.").

198. Brubaker & Spector, "supra note 18, at 18-23 (discussing generally Russia's nonproliferation assistance agreements with numerous Western nations).

199. See, e.g., id. at 3 (discussing the recent progress on resolving liability disputes that have plagued the negotiation of Russia's nonproliferation assistance agreements with European nations).

200. Id. at 20 (describing the EBRD Agreement).
Agreement, Russia agreed to indemnify any party acting pursuant to any assistance program linked to the agreement, unless the incident giving rise to the damages results from premeditated actions.\textsuperscript{201} Importantly, the EBRD Agreement only covers assistance programs that deal exclusively with Russia's civilian nuclear power sector, and it will no longer be in effect when Russia fully joins the international civilian nuclear power liability regime.\textsuperscript{202} Norway and Russia have finalized a liability agreement that is very similar to the EBRD Agreement, although it covers both civilian and military activities.\textsuperscript{203} France and Germany have entered into agreements with Russia independently and jointly that employ essentially the same terms as those found in the EBRD Agreement and the Norway-Russia Agreement.\textsuperscript{204} All of the agreements with Russia into which European nations have entered can be distinguished from the Umbrella Agreement in that the former all contain

\begin{verbatim}
\textbf{201.} The EBRD Agreement's liability provision reads as follows:}
\begin{quote}
\textit{With the exception of claims for damage or injury against individuals arising from their premeditated actions} the Government of the Russian Federation irrevocably guarantees that it shall keep the Administrator, its employees, agents and subcontractors, both during and after the term of this Agreement, fully and effectively indemnified from and against any and all actions, claims, losses, liabilities, expenses or damages in connection with the Project or any relevant grant agreement, whether in or outside of the Russian Federation.
\end{quote}
\end{verbatim}

\begin{verbatim}
\textbf{202. See Brubaker & Spector, supra note 18, at 20. For a discussion of the inability of the international legal regime governing civilian nuclear power liability to provide much insight into the liability dispute that plagues U.S.-Russian bilateral nonproliferation assistance programs, see supra notes 191-97 and accompanying text.}
\end{verbatim}

\begin{verbatim}
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\begin{verbatim}
\textbf{204. Brubaker & Spector, supra note 18, at 20-21 (describing Russia's agreements with France and Germany).}
\end{verbatim}
language that provides complete liability protection for the donor countries and their agents for all damage-causing incidents except those arising from premeditated conduct. The Norway-Russia Agreement also refers to utilization of United Nations arbitration procedures in the event that a dispute arises concerning liability. Russia has also explicitly reserved a right to defend itself under the doctrine of state sovereign immunity in all liability agreements regarding nonproliferation assistance programs, with the sole exception of the Umbrella Agreement.

In addition to the bilateral nonproliferation assistance that Norway has provided to Russia for specific programs pursuant to the Norway-Russia Agreement, Norway and the United States have provided some assistance to Russia under a trilateral initiative, the Norway-U.S.-Russia Arctic Military Cooperation Agreement (AMEC). To govern liability in the event of a nuclear incident, the United States explicitly linked its AMEC activities to the Umbrella Agreement and Norway linked some of its activities to the Norway-Russia Agreement. Very few projects have been completed under AMEC, however, largely because of unique liability issues that arise when considering trilateral nonproliferation assistance for the dismantling of decommissioned Russian submarines. U.S. involvement in AMEC expired in 2002 because of the lack of workable

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205. Id. (discussing generally Russia's nonproliferation assistance agreements with European nations); see also supra notes 200-04 and accompanying text (discussing the liability provisions that govern Russia's nonproliferation assistance agreements with various European nations).

206. Brubaker & Spector, supra note 18, at 20 & 35 n.93 (discussing the liability provision found in the Norway-Russia Agreement).

207. Id. at 19, 25 (noting the differences between the Umbrella Agreement and other nonproliferation assistance agreements to which Russia is a party).

208. For an overview of the AMEC initiative, see Maerli, supra note 203, at 17-19. See also Brubaker & Spector, supra note 18, at 3.

209. Morton Bremer Maerli, a Norwegian arms control expert, explains that [a]fter a failed attempt to negotiate a trilateral framework, the United States and Russia agreed in 1998 to have the legal coverage stipulated in the 1992 CTR Umbrella Agreement apply to U.S. participation in the AMEC “nuclear” projects (all of which are considered supportive of CTR objectives). The signing later in 1998 of the Framework Agreement between Russia and Norway provided legal coverage for most projects in the Norwegian Plan of Action .... Maerli, supra note 203, at 19; see also Brubaker & Spector, supra note 18, at 3 (discussing how liability issues would be dealt with under AMEC).

210. See Brubaker & Spector, supra note 18, at 3 (noting that, because of disputes over liability, only six AMEC projects have begun); Maerli, supra note 203, at 19.
liability provisions, and Norway has declared that it will not continue with AMEC activities absent continued U.S. participation. \textsuperscript{211} The United States has agreed to continue providing leadership under AMEC while the negotiation of a new trilateral liability regime occurs, although the prospect of either successfully implementing AMEC projects or negotiating a mutually acceptable liability regime under this arrangement remains uncertain. \textsuperscript{212}

Recently, European assistance to Russia has received another shot in the arm, as the twelve-country MNEPR\textsuperscript{213} has been ratified completely by all parties to the negotiations, with the exception of the United States, which has signed the agreement but not the Liability Protocol. \textsuperscript{214} The MNEPR provides the framework for U.S. and European assistance programs designed to aid Russia with handling military nuclear waste and spent fuel. \textsuperscript{215} The Liability Protocol of the MNEPR provides liability protection for donor governments that is very similar to the protection provided by the original NCI and PTSA agreements; it exempts donor governments and contractors from all accidents that arise from any conduct other than premeditated acts. \textsuperscript{216} It also allows non-Russian parties to refer

\textsuperscript{211} Brubaker & Spector, supra note 18, at 3; Maerli, supra note 203, at 19.

\textsuperscript{212} Maerli, supra note 203, at 19 ("Negotiations have now been resumed for a trilateral agreement providing separate legal coverage for AMEC projects.... At the time of writing of this report, however, the AMEC-continuation remains uncertain.").


\textsuperscript{214} Ann MacLachlan, Final Agreement Near on Pact for Nuclear Cleanup in Russia, NUCLEONICS Wk., May 19, 2004, at 9 (listing the parties that have ratified the MNEPR and noting that the United States has signed the MNEPR but not the MNEPR Liability Protocol "because it seeks more stringent liability protection, similar to that embodied in the Cooperative Threat Reduction agreement of 1992 which governs work by U.S. contractors in Russia").


\textsuperscript{216} The MNEPR Liability Protocol provides:

1. With the exception of claims for injury or damage against individuals arising from omissions or acts of such individuals done with intent to cause injury or damage, the Russian Party shall bring no claims or legal proceedings of any kind
any disputes to arbitration, similar to a provision in the Norway-Russia Agreement. Although the United States rejected the MNEPR Liability Protocol, its provisions may provide a good starting point for a new U.S.-Russian agreement on CTR liability, assuming that additional protections could be inserted to address the United States' fears of Russian adjudication of what constitutes a premeditated act.

C. Damage Caps and Insurance Agreements

Because the risk and magnitude of the damage resulting from a nuclear incident is so great, both Russia and the United States are understandably wary of any agreement that would result in either country or their contractors being held solely responsible for paying

against the Contributors and their personnel or contractors, subcontractors, consultants, suppliers or subsuppliers of equipment, goods or services at any tier and their personnel, for any loss or damage of whatsoever nature, including but not limited to personal injury, loss of life, direct, indirect and consequential damage to property owned by the Russian Federation arising from activities undertaken pursuant to the Agreement. This paragraph shall not apply to the enforcement of the express provisions of a contract.

2. With the exception of claims for Nuclear Damage against individuals arising from omissions or acts of such individuals done with intent to cause damage, the Russian Party shall provide for the adequate legal defence of and indemnify, and shall bring no claims or legal proceedings against the Contributors and their personnel, or any contractors, subcontractors, consultants, suppliers, or subsuppliers of equipment, goods or services at any tier and their personnel in connection with third-party claims, in any court or forum, arising from activities undertaken pursuant to the Agreement, for Nuclear Damage occurring within or outside the territory of the Russian Federation, that results from a Nuclear Incident occurring within the territory of the Russian Federation.

MNEPR Liability Protocol, supra note 167, art. 2, paras. 1-2 (emphasis added).

217. Regarding arbitration, the MNEPR Liability Protocol provides that contributors, contractors, subcontractors, consultants, suppliers or subsuppliers of equipment, goods or services at any tier and their personnel may refer any dispute concerning the implementation of obligations under this Article to arbitration in accordance with UNCITRAL Arbitration Rules, if such dispute has not been resolved amicably within ninety days of its submission to the Russian Party. Any arbitration award shall be final and binding on the parties to the dispute.

MNEPR Liability Protocol, supra note 167, art. 2, para. 6.

218. See supra note 206 and accompanying text.

219. See supra note 214 and accompanying text.

220. For a discussion of the risks of leaving the interpretation of the term “premeditation” in the hands of Russian courts, see supra note 162 and accompanying text.
an entire damage award. Accordingly, incorporating damage caps, which would limit the amount that any single party would be required to pay in the event of a nuclear incident, into the liability provisions that govern the implementation of CTR projects could make both countries more willing to accept provisions that potentially expose them and their contractors to greater liability. Both parties, however, have an interest in ensuring that all victims are compensated fully for any damages that result from a nuclear incident. Accordingly, coupling liability provisions that cap the liable party's maximum damage payment with a mechanism that provides extensive insurance to pay the difference between the actual costs of all of the damage and the negotiated maximum is necessary to assuage both parties' fears of unlimited liability.

One mechanism for providing insurance is a pooling agreement in which each donor nation that gives any nonproliferation assistance to Russia would pay a portion of its assistance into a general fund that would be reserved for covering any uncompensated damages in the event of a nuclear incident that occurs pursuant to the implementation of any donor nation's nonproliferation assistance program. This proposal would calm the fears of contractors and donor governments concerning unlimited liability, while ensuring that all victims of a nuclear incident are fully compensated. Unfortunately, such a proposal would likely require a lengthy multilateral negotiation, rendering it an infeasible short-term solution.

A second mechanism that could ensure full compensation for the victims of a nuclear incident, while capping the amount of damages that liable parties would be obligated to pay, is the transfer of risk

221. See supra Part II.A.2.
222. See supra notes 118, 122 and accompanying text.
223. The damage cap could be set at $400 million, leaving any additional damages to be paid from the insurance mechanism. This is the approach that is employed by the international legal regime that governs civilian nuclear power plant accidents, effectively spreading the risk among all states that engage in potentially risky nuclear activities. See supra notes 183-88 and accompanying text.
224. Brubaker & Spector, supra note 18, at 27-28 (proposing and discussing the benefits of a multilateral insurance pooling agreement).
225. NUCLEAR THREAT REDUCTION CAMPAIGN, supra note 111, ch. II, pt. 18 at 3-4 ("The creation of either [a retrospective payment pool or a system of catastrophe insurance bonds] would obviously be a time-consuming and challenging task involving several countries and a host of difficult details to be worked out on an equitable basis.").
to international capital markets by issuance of high-yield catastrophe insurance bonds with risk periods of several years by "insurers of nuclear operations, a pool of nuclear operators, or a dedicated intergovernmental institution." The capital generated by issuing catastrophe bonds would be invested in low-risk government bonds, with all donor states that provide nonproliferation assistance to Russia increasing their payments by a small amount to cover the difference between the interest generated by the government bonds and the interest payments made to the catastrophe bondholders. In the event of a nuclear incident, the issuer would not be required to repay the principal on the catastrophe bonds, but instead would use the capital generated by issuing the bonds to cover any damages that result from the incident. Without extraordinarily high premiums, investors will likely be wary of carrying the significant risks associated with nuclear activities. Accordingly, the costs to donor nations will necessarily increase, or investors will not purchase the bonds and the amount of coverage that will be available to compensate the victims of a nuclear incident will be inadequate. Additionally, establishing the mechanism for issuing catastrophe bonds could entail a lengthy negotiating process, and the issuance of such bonds may only "be feasible in the civilian nuclear sector."


One of the most prominent arguments advanced by the United States in favor of requiring absolute immunity and indemnification for its contractors is the fear that Russian courts will interpret any


228. Id.

229. Id.

230. Id. (arguing that investors may be reluctant to "invest in nuclear catastrophe bonds ... except at extremely high premiums").

231. See supra note 225.

232. Brubaker & Spector, supra note 18, at 28 (noting that states assume all liability for military activities generally).
exception to absolute immunity broadly, exposing U.S. contractors to potentially unlimited liability.\(^{233}\) Incorporating explicit choice-of-law provisions, which would require the application of U.S. tort law regardless of where a trial is held to decide any claims brought against U.S. contractors, into the liability provisions that govern nonproliferation assistance programs may assuage this fear to some extent.\(^{234}\) Specifying the applicable law would resolve some of the uncertainty regarding how terms like “premeditated” are defined and applied.\(^{235}\) If the United States’ true concern is manipulation of the Russian judicial system, however, simply requesting that Russian courts apply U.S. law may not adequately provide acceptable levels of protection to U.S. contractors.\(^{236}\) Accordingly, a choice-of-law provision may need to be coupled with a provision that requires that all claims against U.S. contractors be litigated in U.S. courts.\(^{237}\) Similarly, a provision that allows the United States or its contractors to opt for third-party arbitration to decide claims that arise pursuant to CTR activities would enable those parties to avoid trial in the Russian legal system.\(^{238}\) The MNEPR Liability Protocol contains such a provision,\(^{239}\) which seems to address a primary concern of the United States, although the United States has not ratified the MNEPR Liability Protocol and seems unlikely to do so in the future.\(^{240}\)

\(^{233}\) See supra notes 157-63 and accompanying text.


\(^{235}\) Christopher Ingrim highlighted the Supreme Court’s assessment that [u]ncertainty will almost inevitably exist with respect to any contract touching two or more countries, each with its own substantive laws and conflict-of-laws rules. A contractual provision specifying in advance the forum in which disputes shall be litigated and the law to be applied is, therefore, an almost indispensable precondition to achievement of the orderliness and predictability essential to any international business transaction. *Id.* at 677 (quoting Scherk v. Alberto-Culver Co., 417 U.S. 506, 516 (1974)).

\(^{236}\) See supra notes 157-63 and accompanying text (discussing the risk of corruption and manipulation in the Russian legal system).

\(^{237}\) See supra note 235 (indicating that provisions that specify the forum and the applicable law are necessary for predictability in international legal relationships).

\(^{238}\) See NUCLEAR THREAT REDUCTION CAMPAIGN, supra note 111, ch. II, pt. 18 at 2 (discussing the arbitration clause in the MNEPR Liability Protocol).

\(^{239}\) See supra note 217.

\(^{240}\) See supra note 214 and accompanying text.
E. Equipment Specification Provisions and Warranties

Given the risk and magnitude of a nuclear incident, Russia has a legitimate interest in ensuring that the equipment and services provided for CTR activities by U.S. contractors and equipment suppliers are free from defect. Establishing minimum technical standards for any U.S.-supplied equipment and allowing Russia to certify all equipment before it is used may alleviate Russia's fears that a nuclear incident will arise because of equipment malfunctions. Several CTR implementing agreements have utilized this approach, as the varied equipment that may be needed to implement particular CTR projects makes it difficult to establish blanket standards that apply to all equipment transfers. Accordingly, project-specific technical standards can be integrated into each CTR implementing agreement, providing the specifications for the particular equipment that will be used for the specific project covered by the agreement. In the case of CTR agreements that have already been negotiated, supplemental technical agreements can be established as part of the implementation process "without engaging in the formal amendment process." Unfortunately, several CTR projects require highly specialized equipment and the negotiation of mutually acceptable minimum technical standards could require a lengthy joint development and testing process. Moreover, some technologies may be so advanced that defects will not be discovered easily, especially if similar equipment has never

241. See supra Part II.A.2 (discussing the significant damage that could result from a nuclear incident).
242. See supra note 173 and accompanying text (discussing Russia's legitimate concerns regarding defective equipment that is supplied pursuant to nonproliferation agreements).
243. Beard, supra note 13, at 919 (suggesting the desirability of minimum technical standards for U.S.-supplied equipment for CTR projects); Brubaker & Spector, supra note 18, at 5 ("Russia has sought to mitigate some of these risks by providing in many agreements that it have the right to certify Western-supplied equipment before it is put to use in Russian facilities.").
244. Beard, supra note 13, at 919-20 (listing examples of CTR implementing agreements that have incorporated minimum technical standards for U.S.-supplied equipment).
245. Id. at 919.
246. Id. at 920.
247. Id. at 919-20 (giving several examples of highly specialized equipment and noting the resulting difficulty in establishing minimum technical standards).
been manufactured or used previously in Russia.\textsuperscript{248} Currently, the United States retains the exclusive right to ultimately determine the technical standards that will govern equipment provided for CTR projects, although Russia is permitted to make recommendations.\textsuperscript{249}

In addition to minimum technical standards, the United States may be able to protect its contractors by explicitly disclaiming responsibility for any nuclear incidents that arise from equipment or training failures.\textsuperscript{250} Past CTR implementing agreements have "express[ed] the limited nature of any warranties or guarantees associated with the performance of U.S.-provided assistance," including material, training, services, equipment, property, and supplies.\textsuperscript{251} Fearing the enormous damages that may result from a nuclear accident, Russia is likely to reject such a broad disclaimer, although it may be more acceptable if Russia were given the right to establish minimum technical standards for any U.S.-supplied equipment and certify all equipment before using it.\textsuperscript{252}

\section*{F. A Workable Solution: A Hybrid Approach}

The United States and Russia must address two broad issues in any liability agreement. First, the provisions of the agreement must indicate precisely how it will be determined which party is liable for damages caused by a nuclear incident that occurs pursuant to the implementation of a CTR project. Neither party is willing to accept unlimited liability, and the method for allocating responsibility must be mutually acceptable to both nations. Second, any agreement on nuclear liability must ensure that the full damages will be paid. If the provisions of the agreement are likely to leave any of the victims of a nuclear accident uncompensated, it will not be acceptable to either side, particularly Russia, where the victims are

\textsuperscript{248} Brubaker & Spector, supra note 18, at 5-6 (offering the example of a complex, but defective, computer code that had never before been used in Russia and was so technologically advanced that the U.S. supplier was unaware of its defects).
\textsuperscript{249} Beard, supra note 13, at 920.
\textsuperscript{250} See \textit{id.} at 918.
\textsuperscript{251} \textit{Id.} (surveying the limited warranties and guarantees in a number of CTR implementing agreements).
\textsuperscript{252} \textit{See supra} notes 241-43 and accompanying text.
likely to reside.\textsuperscript{253} Given the various interests and the resulting policy positions of both the United States and Russia,\textsuperscript{254} it is likely that any mutually acceptable solution to the current liability impasse will have to incorporate a number of the foregoing solutions to adequately address the legitimate concerns of both parties. Both countries have a clear interest in engaging in nonproliferation projects, including the NCI, the PSTA, and the PMDA.\textsuperscript{255} Russia's interests in safe implementation of CTR projects and ensuring full compensation for the victims of a nuclear incident\textsuperscript{256} must be balanced against the United States' interests in reducing threats to its national security, while limiting potential liability for itself and its contractors.\textsuperscript{257}

The provisions of the MNEPR Liability Protocol provide a good starting point for an acceptable solution to the liability impasse. Russia has clearly rejected the broad exemptions from liability and indemnity that characterize the Umbrella Agreement.\textsuperscript{258} As demonstrated by Russia's acceptance of the MNEPR Liability Protocol and agreements containing similar provisions with other European nations, however, it is clear that Russia is willing to offer broad liability waivers and indemnification to donor states and contractors if those states agree to impose responsibility on any party that is responsible for incidents arising from premeditated acts.\textsuperscript{259} The United States' main objection to this type of provision concerns uncertainty regarding how Russian courts will interpret the term "premeditated," especially given the corruption that is endemic to the fledgling Russian legal system.\textsuperscript{260} Accordingly, explicit choice-of-law provisions that require the application of existing U.S. tort law to provide the relevant standards for determining whether an act is premeditated could blunt the force of the

\textsuperscript{253} See supra note 118 and accompanying text.
\textsuperscript{254} See supra Part II.C-D (outlining the policy positions of the United States and Russia concerning liability provisions for bilateral nonproliferation assistance programs).
\textsuperscript{255} See supra notes 117, 120, 155, 176 and accompanying text.
\textsuperscript{256} See supra notes 118, 173 and accompanying text.
\textsuperscript{257} See supra Part II.C.
\textsuperscript{258} See supra note 17 and accompanying text; supra note 156.
\textsuperscript{259} See supra note 156; supra text accompanying note 168.
\textsuperscript{260} See supra notes 157-63 and accompanying text.
If the fear remains that Russian courts will manipulate and interpret U.S. law broadly, a choice-of-law provision may need to be coupled with a choice-of-forum or arbitration provision that allows non-Russian defendants to remove any lawsuits from Russian courts.

In addition to addressing the issues of who should be liable and how liability should be determined in lawsuits brought pursuant to damages suffered from nuclear incidents resulting from implementation of nonproliferation programs, any mutually acceptable liability provisions must address the issue of the availability of full compensation for damages. Although difficult to negotiate, multilateral pooling agreements seem to provide the most feasible alternative. Pooling agreements have been successfully negotiated and employed in the civilian nuclear power context, and they would serve the interests of both parties by ensuring that adequate funds exist to compensate all victims of a nuclear incident for the entirety of the injuries suffered, while not placing the onus for providing the entire award on any single party. This would allow a damage cap to be established that would limit the total amount of damages that any single party would be required to pay, further alleviating the United States' main concern by capping its contractors' potential liability. It also serves Russia's interests by ensuring that victims are adequately compensated. Both parties' joint interest in allowing nonproliferation activities to proceed would be served.

Given Russia's recent acceptance of the MNEPR, a hybrid approach that combines terms similar to those in the MNEPR Liability Protocol with a damage cap and a compensation pooling agreement seems to be acceptable to the Duma. Similarly, a solution

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261. See supra notes 233-35 and accompanying text (arguing in favor of choice-of-law provisions).
262. See supra notes 236-37 and accompanying text (discussing the benefits of choice-of-forum provisions).
263. See supra notes 224-25 and accompanying text (discussing multilateral pooling agreements).
264. See supra notes 185-86 and accompanying text.
265. See supra notes 221-22 and accompanying text (explaining and discussing the purpose of damage caps).
266. See supra notes 222-23 and accompanying text.
267. See supra notes 117, 120, 155, 176 and accompanying text.
that provides for contractor liability only in cases of premeditated actions, coupled with damage caps and the ability to remove any case from the Russian court system, should prove acceptable to both the United States government and U.S. contractors. This broad framework could be codified in an agreement that is similar to the Umbrella Agreement, providing the liability provisions that govern all U.S.-Russian bilateral nonproliferation assistance agreements.268

Additional protections for both parties could also be negotiated on a case-by-case basis and integrated into the implementing agreements that specify the terms governing particular CTR projects. The optimal liability provisions for any particular nonproliferation agreement are likely to vary in scope, depending on the type of activity proposed.269 For example, the NCI focuses on defense conversion, which is much less risky than the construction of a MOX fabrication plant or the burning of MOX fuel in a reactor.270 Accordingly, the United States may be more willing to accept greater limits on liability protection for NCI activities than for activities conducted pursuant to the PSTA or the PMDA.271 Russia’s

268. Although the Umbrella Agreement applies only to DOD CTR projects, see Bernier, supra note 76, at 92, the CTR program has expanded since its inception and several projects are now being implemented by the DOE, including the NCI, the PSTA, and the PMDA. See supra notes 73-74, 86-90, 99 and accompanying text; see also supra note 11. Accordingly, any new liability framework that is negotiated should apply to all CTR projects.

269. See Brubaker & Spector, supra note 18, at 6-7.

270. For a discussion of the unique risks that accompany plutonium disposition activities, see supra notes 106, 129-30 and accompanying text. See also Brubaker & Spector, supra note 18, at 7 (suggesting that plutonium disposition activities produce some of the greatest risks of any CTR activities).

271. Brubaker and Spector note that different levels of risk may alter the level of risk that the parties to nonproliferation assistance agreements are willing to assume:

[T]he potential magnitude of nuclear damage involved in a particular incident may, itself, have an impact on the attractiveness of various liability and compensation arrangements for the activity involved and the related assistance programs.... [I]t may be useful to categorize activities in terms of the potential magnitude of nuclear damage they may engender.... A number of states recognize the distinction between high-level and low-level risk through specific provisions in their domestic nuclear laws, which establish significantly higher limits of liability for nuclear damage arising from [the most serious incidents].... This distinction suggests that, in negotiating liability and compensation arrangements, donor states and Russia might consider adopting approaches dependent on the magnitude of potential nuclear damage specific programs might entail. It is possible to imagine Russia, for example, being willing to accept unconditional liability for programs ... whose potential for nuclear damages falls toward the lower end of the scale, while insisting upon shared
commitment to using its plutonium for producing energy may also induce greater willingness on Russia's part to accept more responsibility for PSTA or PMDA activities because it will receive benefits from the program beyond the security benefits of disposing of plutonium. Moreover, depending on the type of equipment required to implement particular CTR projects, the United States could negotiate a disclaimer of all warranties or guarantees on the equipment, training, and services provided, or Russia could negotiate minimum technical standards for the same, if additional protection for either party is desirable or necessary, based on the nature of the particular project.

G. Interim Solutions

Establishing an entirely new liability framework that will govern U.S.-Russian nonproliferation assistance programs is likely to require a lengthy negotiation process, especially if it includes multilateral aspects. Given the importance of the NCI and plutonium disposition activities, an interim solution that would allow these projects to continue while the details of a new liability agreement are hammered out is necessary. There are two potential interim solutions. First, the United States and Russia could extend the projects temporarily for several months or a year at a time, promising to work in earnest toward achieving a truly mutually acceptable solution to the liability impasse that caused the agreements to lapse in the first place. The second interim solution is specifically targeted at allowing the plutonium disposition

liability for programs with potentially graver consequences.

Brubaker & Spector, supra note 18, at 6-7.  
272. See supra note 93 and accompanying text.  
273. See supra Part III.E (discussing equipment specification provisions and warranties).  
274. See supra note 225.  
276. The Nuclear Threat Reduction Campaign notes that [t]he idea of one-year extensions while negotiations over the liability issue continue was proposed to the [U.S.] Administration before the agreements had expired and apparently was rejected.... If the Administration were to decide that a multilateral solution along the lines suggested by Brubaker and Spector or some variant thereof were worth pursuing, perhaps temporary extensions of [CTR] programs might be possible.  
Id. (endnote omitted).
agreements to be implemented while official liability negotiations take place. Because the MNEPR has already been concluded and ratified by France and Russia, France could, with the consent of the United States, take the lead role in providing Russia with MOX fabrication technology until the United States and Russia have completed a satisfactory agreement that would allow the United States to participate fully in providing technical assistance.277

CONCLUSION

The risk that terrorists or hostile states that are determined to cause mass destruction in the United States will acquire nuclear material or knowledge is frighteningly real. The most effective means of countering this threat is downsizing Russia's nuclear weapons complex, providing employment to former nuclear weapons scientists, eliminating surplus weapons-grade material, and ensuring that remaining stocks of nuclear weapons and fissile material remain secure. Bilateral nonproliferation assistance agreements between the United States and Russia are critical to this effort, as Russia's crumbling nuclear infrastructure and inadequate security measures afford terrorists an opportunity to acquire nuclear material and knowledge. Unfortunately, disputes between the two nations concerning liability issues have impeded the full completion of several important nonproliferation projects, most notably the NCI and the plutonium disposition program.

A new approach is needed to bridge the gap between the positions of the United States and Russia concerning liability in the event that a nuclear incident occurs pursuant to the implementation of bilateral nonproliferation projects. Both the United States and Russia are likely to be satisfied with a new umbrella agreement that holds the United States and its contractors liable only in the case of a premeditated act that causes damage, coupled with provisions that allow claims to be adjudicated in accordance with U.S. tort law.

277. Daniel Horner & Ann MacLachlan, DOE Using "French Option" to Send MOX Design Information to Russia, NUCLEAR FUEL, Nov. 22, 2004, at 6; Daniel Horner, U.S. Pursuing "French Option" as Interim Fix on Pu Liability, NUCLEAR FUEL, May 24, 2004, at 4. But see Daniel Horner & Ann MacLachlan, Effort To Bypass Liability Issues for Russian MOX Plant Not Working, NUCLEAR FUEL, May 23, 2005, at 3 (describing several issues that have prevented France from transferring MOX technology to Russia under the "French option" plan, including failure of the United States and Russia to resolve the liability dispute).
Moreover, establishing a multilateral pooling agreement that would cap the amount of damages that any single party would be required to pay to victims of a nuclear incident, while ensuring that all victims are fully compensated, would further spread the risk of engaging in nonproliferation activities and make any new umbrella agreement more acceptable to both the United States and Russia. Additional project-specific protections could be established in the implementing agreements for any particularly risky CTR projects.

In the interim, a number of temporary solutions can ensure that the nonproliferation projects continue while the negotiations for a new liability framework that will govern all future U.S.-Russian CTR activities take place. The alternative to continued progress in securing Russia's nuclear material and knowledge is a world of widespread proliferation of nuclear weapons to terrorists and hostile states, seriously threatening the United States and the world with the prospect that such weapons will be used to cause incredible levels of death and destruction.

AUTHOR'S NOTE

On July 19, 2005, news media in both the United States and Russia reported that the two countries had agreed in principle on the terms of a new liability agreement that would cover plutonium disposition activities conducted pursuant to the PMDA. The exact terms of the new agreement have not been released, but reports discussing the July 2005 negotiation indicate that the new liability agreement contains provisions that mirror those of the MNEPR


279. See Saradzhyan, supra note 278, at 2 (quoting Ivan Safranchuk, head of the Moscow office of the Center for Defense Information, who indicated that Russian officials will not publicly disclose the terms of the new agreement "in order to avoid riling the [Russian] public"); Costa, supra note 159 (indicating that U.S. officials have declined to comment on the substance of the new liability agreement until it is signed by both countries).
Neither the United States nor Russia has taken any steps to formally approve the new agreement, despite several commentators’ predictions that it would enter into force soon after negotiations ended. The new liability agreement must first go through an interagency review process within the Russian government, and then other high-level Russian officials must accept its terms “to complete Moscow’s approval process.” Only after Russia’s internal review process has concluded may President Putin issue a presidential decree publicly announcing the terms of the agreement, and then both nations must officially sign the agreement. Finally, the Duma must formally ratify the agreement, and it will enter into force.

Although it is unknown when the United States and Russia will act to ratify the new liability agreement, most commentators believe that it will eventually enter into force. As an interim solution, the United States and Russia may apply the agreement on a “provisional basis ... if the Duma approval process appears likely to impose a long delay,” although “such an arrangement cannot be put into place until the agreement is signed [by both countries].”

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280. Sprenger, supra note 158 (“In the [new liability agreement], the United States gave up its claim for blanket protection, and the two countries set up a process for handling a situation in which an individual deliberately causes damage in the country in which he is working ... ”); Press Release, Russian Am. Nuclear Sec. Advisory Council, Liability Agreement with Russia a Reversal of U.S. Hard Line (July 21, 2005), available at http://www.ransac.org/Projects%20and%20Publications/News/News%20Releases/index.asp (“The United States has reportedly accepted provisions similar to those contained in the [MNEPR Liability Protocol].”).


282. Id.; Liability Resolution, supra note 278 (noting that “[s]everal Russian government agencies would have to approve the deal before it is formalized as an addendum to [the PMDA]”).

283. Sprenger, supra note 158.

284. Press Release, Senator Pete V. Domenici, supra note 278; Liability Resolution, supra note 278.

285. Horner & MacLachlan, supra note 281, at 4; Press Release, Senator Pete V. Domenici, supra note 278. The U.S. Congress does not need to approve the new liability agreement “because it is an executive agreement that can enter into force solely through presidential authority.” Sprenger, supra note 158; see also Horner & MacLachlan, supra note 281, at 4.

286. See, e.g., Josh Gelinas, Officials Show MOX Support, AUGUSTA CHRON. (Ga.), Oct. 15, 2005, at B1; Sprenger, supra note 158.

Even if the countries quickly approve the new liability agreement and it enters into force, it will not resolve the underlying liability dispute that plagues U.S.-Russian nonproliferation assistance programs. The new liability agreement only covers PMDA activities and not the NCI or other future programs. Accordingly, the United States and Russia will have to revisit the issue of liability protection for the NCI and existing DOD CTR programs that continue to operate under the Umbrella Agreement, which will expire in June 2006. In fact, the new liability agreement may make future negotiations to revise and extend the Umbrella Agreement more difficult:

U.S. officials have insisted that the plutonium disposition liability settlement would be a one-time deal. However, Russian officials may view the new agreement as a precedent and seek to revise the unfavorable terms of the broader CTR agreement. This could set the stage for another round of contentious negotiations and possibly grind to a halt a broad swath of programs.

Accordingly, the liability dispute between the United States and Russia will persist into the future, despite the recent agreement that covers plutonium disposition activities. At best, this new liability agreement will serve as a partial, interim solution while the United States and Russia negotiate a new umbrella agreement that will fully resolve the liability dispute that continues to hinder the progress of U.S.-Russian nonproliferation assistance programs.

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288. See sources cited supra note 278 (announcing the new liability agreement and discussing the activities to which it applies).
289. See Luongo & Hoehn, supra note 11, at 29; Sprenger, supra note 158; Press Release, Russian Am. Nuclear Sec. Advisory Council, supra note 280.
290. Press Release, Russian Am. Nuclear Sec. Advisory Council, supra note 280; see also Luongo & Hoehn, supra note 11, at 30 (noting that even if the United States and Russia compromise on liability provisions to govern plutonium disposition activities, the United States “will maintain a firm stance in other liability negotiations”).
291. For a discussion of other possible interim solutions, see supra Part III.G.
292. See supra Part III.F (proposing a comprehensive solution to the liability dispute).

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