
Liability and Western Nonproliferation Assistance to Russia: Time for a Fresh Look?

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One of the most difficult problems in implementing Western-supported nonproliferation, nuclear safety, and radioactive waste management assistance programs in Russia has been the negotiation of formal arrangements regarding who will bear responsibility for injuries that may arise from these programs. Of greatest concern has been the question of responsibility for potentially catastrophic damages, especially those stemming from activities involving nuclear facilities and materials. This article will examine this issue in detail, focusing on the nuclear dimension of the problem, although the analysis and principles discussed are equally relevant to large-scale damages from other Western-supported nonproliferation activities in Russia, such as the destruction of chemical weapons. Special attention will be given to the perspectives of two Western donor states, the United States and Norway. The United States is the donor state pursuing the widest array of assistance programs, with annual expenditures amounting to roughly \$1 billion. Norway typifies a smaller Western donor state, but one that has played a prominent role in this arena because of its strong interest in minimizing transboundary

radioactive pollution from the retired Russian nuclear submarines and their nuclear wastes located on the Kola Peninsula.

The costs of nuclear damage—that is, personal, economic, and environmental injury caused by the release of radioactivity from activities involving nuclear materials and facilities—can be very high, indeed.¹ The Organization for Economic Cooperation and Development (OECD) has estimated that the costs of a single nuclear catastrophe, such as a repeat of the 1986 Chernobyl disaster, could run as high as \$100 billion.² Damage from lesser incidents, such as localized nuclear waste spills or accidents involving the transportation of radioactive materials, would be of a lower magnitude, but could nonetheless run from tens to hundreds of millions of dollars.

Who is to stand responsible for nuclear damages triggered by an incident involving Russia that might be linked to Western assistance programs, such as the detonation in a European city of a Russian nuclear weapon stolen from a site that had relied upon a Western-supplied security system, or the radioactive contamination caused by an accident at a Russian nuclear power plant that had

relied upon Western-provided safety controls? How is payment for reparations to be provided? So far, states themselves, have largely been the de facto guarantors. Where this compensation fails, it ultimately is the uncompensated victims who bear the costs. In the case of cooperative nonproliferation assistance programs with Russia, including projects involving the transportation, storage, and destruction of nuclear weapons; safety assistance to nuclear power plants; as well as the dismantling of Russian nuclear submarines and securing their spent fuel, donor states have been afraid to expose themselves to risks and have insisted on protection from liability as a condition precedent for their aid.

In the early 1990s, Russia acquiesced to provisions in a central nonproliferation assistance agreement with the United States on Cooperative Threat Reduction (CTR) that made Russia solely and unconditionally liable for damage, including nuclear damage, arising from activities under that agreement.³ In negotiating other nonproliferation assistance agreements with Western governments during this period, as well as more recently, however, Moscow has balked at employing the liability terms found in the CTR Umbrella Agreement. While compromise arrangements were negotiated in various agreements completed during the 1990s,⁴ the United States continues to demand that Russia accept full and unconditional responsibility for damage claims on these terms. This policy has placed major new Western nuclear assistance programs in jeopardy, including the multibillion dollar Plutonium Disposition Program to eliminate 34 tons of Russian weapons-grade plutonium; has impeded the renewal of agreements set to expire in 2003, such as the Nuclear Cities Initiative Agreement;⁵ and has paralyzed efforts to expand a number of existing nonproliferation assistance programs.

Indeed, the issue has been of such concern, that it was the subject of a major negotiation at the June 26-27 Kananaskis G8 Summit. At that meeting, the participants announced the establishment of the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction, an umbrella under which the G8 members and the European Union agreed to contribute up to \$20 billion over the coming decade to finance a wide range of cooperative nonproliferation programs in Russia.⁶ The participants also agreed to a set of guidelines to govern the provision of assistance under the G8 Global Partnership, including one stating that, "All governments will take necessary steps to ensure that adequate liability pro-

tections from claims related to the cooperation will be provided for donor countries and their personnel and contractors...."⁷

According to a senior U.S. official present at the meeting, the liability provision was among the most contentious and was negotiated at the last moment, only after the G8 meeting had begun.⁸ He also made clear in commenting on the Guidelines that expanded Western assistance to Russia will be contingent upon Russia's fully implementing these principles and implied that this must include Russia's unconditional acceptance of liability for nuclear and other damage arising from activities under Western-sponsored assistance programs.⁹ (Although the United States is pursuing this approach to liability in current negotiations, the European partners may accept the compromise arrangements they have previously employed.)

As pending nonproliferation assistance negotiations proceed under the G8 Global Partnership and other auspices, one reality is clear: The bilateral liability agreements currently in force between Western donor states and Russia appear unusually one-sided.¹⁰ This factor and others raise questions about the future enforceability of these agreements and, thus, their effectiveness in immunizing donor states and their contractors from costs associated with damage stemming from these programs. At least as important is that the agreements fail to ensure adequate compensation for the victims suffering such damage.

Russia's fledging insurance markets, lack of capital at the national level for providing compensation, and rather capricious judicial system, raise serious questions about Moscow's ability to cover future claims for severe nuclear damage. Indeed, it may be argued that 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. These factors have often led Western companies to confine their activities to projects involving minor exposure to liability, despite Russia's pledges in its nuclear assistance agreements to indemnify them.

Given these realities, there is reason for concern that the approach favored by Western governments of placing liability solely on Russia may, itself, be flawed. This is because the availability of funds to pay the costs of potential compensation in cases of severe harm is not guaranteed. Thus, it is fair to ask whether by taking this approach, the Western donor governments have not, in fact, set the stage for shifting, at least partially, the risk to the victims of nuclear damage, a group that would include

not only Russians, but also Europeans and Asians in nearby states.

Moreover, as presented in detail below, existing liability and compensation arrangements for Western nonproliferation aid programs, and the agreements that the Western donors are currently seeking for such programs, represent only one of several models for addressing these issues. Alternative approaches are most fully developed in the field of liability for damages from civilian nuclear power activities, where the potential risk of large-scale damages has been recognized since the earliest days of this industry. In this field, the more widely adopted models provide not only for the clear assignment of liability, but also include limits on liability for private parties operating nuclear facilities, rules for streamlining the adjudication of claims, and, most importantly, arrangements for financing compensation through private insurance, public funds, and/or pooling arrangements. Under pooling arrangements, a large number of parties undertaking comparable nuclear activities agrees to share the costs of large-scale nuclear damage claims incurred by any pool member stemming from such activities.

Significantly, even as the Western donor states demand, with the United States in the lead, that pending bilateral nuclear assistance agreements provide for unconditional Russian liability without arrangements for assured financing of compensation, many of these same states—including the United States and Norway—are simultaneously championing alternative liability/compensation models in other international settings that incorporate pooling arrangements. This fact raises further questions as to the appropriateness of the Western approach vis-à-vis Russia and suggests that alternatives that build upon other existing models or on fresh approaches might be worth exploring as a means for ending the current negotiating impasse between Russia and the nuclear assistance donors. Russia has expressed support for international conventions that include pooling arrangements to cover liability, but has not yet become a party to one.

Norway's difficulties in negotiating satisfactory liability arrangements with Russia typify the challenges confronting Western aid donors. Norway shares a border with Russia and has sought to pursue a number of cooperative projects to reduce the environmental hazards on the Kola Peninsula posed by retired Russian nuclear attack submarines and their spent nuclear fuel (see Figure 1).¹¹ These activities were undertaken under the Norway-U.S.-Russia Arctic Military Environmental Co-operation (AMEC)

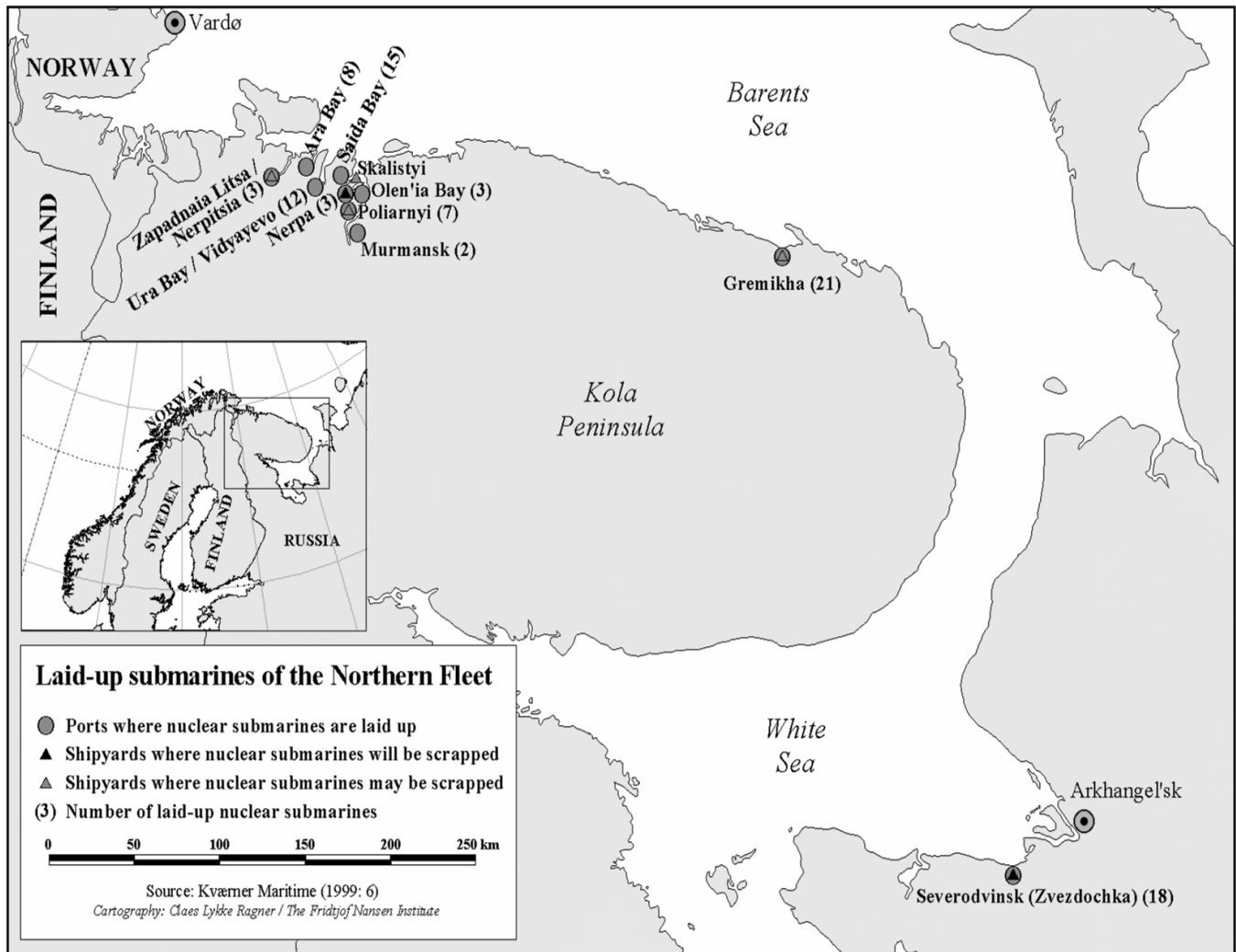
program,¹² which, in turn, was linked to the 1992 CTR Umbrella Agreement.¹³ By linking the two programs, U.S. activities within AMEC were governed by the liability provisions contained in the CTR Umbrella Agreement, which, as noted, place all liability on Russia for damage arising from activities under the agreement, as long as those activities are expressly connected to CTR's objectives. For Norway, liability has been governed by the Norwegian-Russian Agreement;¹⁴ one AMEC project was initially included under this agreement.

Norway's lack of liability coverage for its remaining AMEC projects hindered substantially its participation in the program, however.¹⁵ Following a long period of negotiations, five additional AMEC projects were added to the Norwegian-Russian Agreement in early 2000,¹⁶ but some liability issues remain unresolved. The AMEC Parties have attempted to negotiate a trilateral agreement in hopes of resolving these questions with little success.¹⁷ The current U.S. involvement in AMEC expired on September 30, 2002, in part because of the lack of a new agreement governing liability. Norway has declared that continued U.S. involvement is essential for its own participation.¹⁸ Recently, however, the U.S. State Department has indicated that the United States will remain an active participant providing leadership to the trilateral process, "even if negotiations do not produce an acceptable trilateral agreement in the near term."¹⁹

Norway is also pursuing assistance programs through another, multilateral vehicle, the 12-country Multilateral Nuclear Environmental Program in the Russian Federation (MNEPR),²⁰ dealing with international cleanup of military nuclear waste and spent fuel in northwest Russia. This agreement, long under negotiation among 12 states,²¹ is expected to be signed in mid-2003. Here, too, disputes over liability, among other issues, stalled progress, although recent developments have been somewhat more positive.²²

This article will explore these issues in depth, providing an overview of developments concerning nuclear liability relevant to international nuclear cooperation with Russia. Background information, related to both policy and legal issues, establishes a framework for assessing the liability and compensation provisions of Western nuclear assistance with Russia. The article then examines these agreements in depth, comparing them with nuclear liability and compensation arrangements seen in other settings, and studies liability and compensation arrangements between Norway and Russia. Finally, drawing on the fore-

FIGURE 1
LAI D-UP SUBMARINES OF THE NORTHERN FLEET



going analysis, the article concludes that existing liability and compensation arrangements in Western nuclear assistance agreements with Russia have significant deficiencies and suggests two approaches, based on innovative insurance arrangements, to better address them.

BACKGROUND CONSIDERATIONS

Parties and Interests

In the analysis that follows, diverse parties and interests will be at issue. Although space does not permit a detailed examination of all of these, it is worth quickly sketching some of them to understand better the impact of alterna-

tive liability and compensation schemes discussed later. An ideal approach to liability would optimize the distribution of costs and benefits among these various players.

Donor Governments

Donor governments have multiple interests in providing assistance to reduce nuclear proliferation, improve the safety of nuclear power plants, and reduce environmental dangers in Russia. Most basically, the donors are seeking to reduce nuclear threats to themselves, including dangers that might emerge from the leakage of Russian fissile material to third parties, transboundary radioactive contamination from an accident at a Russian nuclear power

plant, and radioactive pollution from nuclear wastes that may leak across borders or into common areas, such as the Barents Sea.

Donors, however, perceive themselves as disinterested benefactors, prepared to provide aid in varying amounts, but reluctant to accept assistance arrangements that may expose them to open-ended liability for Russian actions over which they have no day-to-day control. In particular, they wish to avoid increased risk exposure from their grants. 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. But if assistance the United States provided 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.

Donor governments may also argue that since Russia would be liable for domestic and transboundary nuclear damage in the absence of assistance, and since assistance is intended to reduce the likelihood of such nuclear damage occurring, it is reasonable for the donors to ask Russia to assume the liability for the remaining risk, which would be less than would have been the case without their aid.

Even if all liability is assigned to Russia, however, donor 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. Merely assigning all liability to Russia does not address this concern. As suggested earlier, once nuclear damage reaches a certain threshold, it is impractical to imagine that Russia would be able to pay the necessary compensation. Thus, it may be reasonable to expect Russia to self-insure up to a certain point, but thereafter other mechanisms may be needed to guarantee adequate compensation for victims. Where this line might be drawn is not obvious, but existing international nuclear compensation systems incorporate such thresholds and might provide relevant benchmarks.

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—from the Russian government, donor governments, or both—that protect them from these economic risks. Alternatively, they have limited their activities to low-risk areas. As discussed below, it is not clear whether a letter from the Russian government confirming that it will accept liability for nuclear damage and indemnify affected parties will be fully effective in protecting suppliers, even if issued under a bilateral aid agreement in which Russia also assumes such liability. This situation places a premium on the supplier or contractor obtaining assurances from the donor state that *it* will indemnify the supplier for any losses it suffers from successful claims for nuclear damage.

Victims of Nuclear Damage

Donor-state or non-donor-state victims of nuclear damage are primarily interested in simplified litigation procedures, including those that clarify the appropriate jurisdiction for bringing lawsuits, designate the proper defendant, and establish the relevant standard of care. Of even greater importance, however, is the availability of monies from which successful claims can be paid. While many domestic and international nuclear liability/compensation schemes provide both simplified procedures and assurance of financial resources, standing alone, bilateral nuclear assistance agreements between Russia and donor states offer neither.

The Russian Government

The Russian government's core interest in receiving international assistance to reduce nuclear dangers on its territory is to enhance the well-being of its own citizens, and, secondarily, that of the wider international community. But Russia may have legitimate concerns that equipment or services provided by donor states may be defective and lead to incidents causing significant nuclear damage. 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. In other areas, however, it is hard to imagine how Russia could protect itself against defects or negligent acts by foreign equipment suppliers or contractors implementing donor-state programs. In some cases, for example, the foreign supplier/contractor will employ equipment of an advanced type never manufactured in Russia or which is so complex that the supplier is not aware of defects it may contain. This was the case with a flawed

computer code for nuclear materials accounting that the United States supplied to Russia in 1995.²³ 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.

Certainly, donor states may argue that their assistance is working to reduce nuclear dangers in Russia overall and thereby Russia's exposure to claims for nuclear damage. But often, Russia and various donor states do not agree on the underlying level of risk before assistance arrives. Russia long insisted, for example, that its nuclear power reactors were safe and that foreign safety assistance was unnecessary. Nor did Russia consider its nuclear weapon materials to be poorly secured, believing instead that the United States, for one, was greatly exaggerating security dangers. Against this background, Russia may argue that some Western assistance, by altering the status quo, exposes Russia to increased, not decreased, liability and that, accordingly, acceptance of liability should not fall exclusively to the Russian side.

The Russian government would also appear to have an interest in establishing a domestic nuclear liability and compensation scheme comparable to those seen in Western states to mitigate the impact of a nuclear incident, whatever its cause, through the rapid compensation of victims. As detailed below, however, Russia has yet to enact legislation to implement such arrangements.²⁴

Operators of Russian Nuclear Facilities

Virtually all enterprises conducting nuclear activities in Russia are linked to the Russian state. Defense-related activities are conducted by government entities, such as the Russian Navy, the Strategic Rocket Forces, or the Ministry of Atomic Energy (Minatom). Major civilian activities are conducted by government-owned nuclear enterprises, which are distinct from Minatom but under its ultimate authority. The organizations include Rosenergoatom, which now operates the country's civilian nuclear power plants, and TVEL, a company which produces the nuclear fuel used in them.²⁵ Nuclear research is conducted in government-funded laboratories and centers. Thus, ultimately, the Russian government could bear responsibility for compensating victims of nuclear incidents involving all of these entities, unless, in the case of the civilian enterprises, a court refused to look behind the

corporate entity to the role of the Russian government as sole shareholder. In this context, operators of Russian nuclear facilities would share the objectives and interests of the Russian government and, presumably, would favor the establishment of workable insurance arrangements to meet nuclear damage claims.

In sum, both donor states and Russia have equity in reducing their respective exposure to liability for nuclear damages arising from the assistance programs under discussion. How an impartial observer might divide these risks is by no means obvious. At the same time, it appears that *all* parties would benefit from the establishment of an assured compensation arrangement. Indeed, were an assured compensation arrangement in place, Russia and the donor states might be expected to show greater flexibility with respect to the division of liability than is the case today.²⁶

The Magnitude of Nuclear Damage

A separate issue is that the 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. The current impasse between donor states and Russia would no doubt be easily resolved if only a few million dollars were at risk, rather than many billions. Given the reality that the size of the stakes will influence the behavior of all parties, it may be useful to categorize activities in terms of the potential magnitude of nuclear damage they may engender. This exercise may, in turn, provide insights into the scale of assured compensation arrangements that may be necessary to protect potential victims.

The possible incident with the highest level of risk is the detonation of a nuclear device. Next would be an accident at a major nuclear power plant and other various scenarios in which large areas are contaminated by the dispersion of radioactive materials. Examples include the use of a radiological dispersion device, "dirty bomb," or the destruction of a nuclear waste facility. In all of these potential outcomes, claims for damages could reach many billions of dollars.

Far lower levels of damage are likely from localized accidents—for example, from the accidental dropping of a radioactive spent fuel rod during placement in a transportation cask or the loss into the sea of a disused naval nuclear propulsion reactor. 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 nuclear power plant accidents than for damage arising from accidents involving nuclear equipment and materials in other contexts (see Box 1).²⁷

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—such as AMEC or MNEPR—whose potential for nuclear damages falls toward the lower end of the scale, while insisting upon shared liability for programs with potentially graver consequences. The Plutonium Disposition Program, which involves the processing and use of nuclear weapon materials and modifications of operating nuclear power plants, might fall into the latter category.

Military versus Civilian Nuclear Activities

The major categories of aid programs that may lead to accidents causing nuclear damage include those aimed at

- Eliminating strategic missiles, bombers, silos, and submarines
- Upgrading storage and transport security for nuclear warheads
- Reducing excess weapons-grade plutonium
- Upgrading storage security for fissile material
- Improving safety of civil nuclear reactors
- Dismantling retired general-purpose submarines, as well as managing their radioactive equipment and materials
- Improving the management of defense-origin radioactive wastes and spent fuel.

These assistance programs thus address a range of military and civilian activities within the Russian nuclear sector. Military activities are conducted under the control of the Russian Ministry of Defense and the various Russian armed forces, as well as by Minatom, which manufactures and maintains Russia's nuclear weapons and provides fuel for its nuclear-powered submarines. Civilian activities are conducted by other elements of Minatom, by parastatal (government-owned) entities, or by private enterprises.

Many nuclear activities in Russia are easily characterized as either military—the production of nuclear

weapons—or as civilian—the operation of reactors whose sole purpose is to generate electricity. Many Russian nuclear activities receiving Western assistance, however, overlap both categories. A salient example is the Plutonium Disposition Program, under which 34 tons of military-origin plutonium with certain classified characteristics will be processed to remove those characteristics and then moved into civilian facilities for ultimate use as fuel in civilian Russian nuclear power plants. The management of certain low-level radioactive wastes from Russian nuclear submarines may also fall into this category. Once they are removed from the vessel, they may lose their military character and be treated in the same fashion as nonmilitary wastes.

It is not obvious which activities might give rise to the greatest liability. Undoubtedly, the gravest consequences would be those from the detonation of a nuclear weapon in a major city, whether in Russia or abroad. Such an action might be the result of the theft of a nuclear weapon from a military facility, or of plutonium or weapons-grade uranium from a civilian nuclear processing plant that was subsequently fabricated into an improvised nuclear device. Similarly, the consequences of an accident at a reactor operated under the military side of Minatom to produce plutonium for nuclear weapons might be indistinguishable from those of an accident at a purely civilian nuclear power facility.

The liability provisions of Western assistance agreements with Russia do not distinguish between military and civilian nuclear activities, as such. That is, Russia has agreed to accept liability under these agreements, generally, without regard to whether nuclear damage is caused by a nuclear incident involving military or civilian nuclear activities. However, the distinction is critical to the existing and planned international regimes governing liability for and compensation of nuclear damage. All of these regimes have covered only damage arising from civilian nuclear activities.²⁸ Thus, any adaptation of such regimes to address Western assistance to Russia would have to include modifications that also extend the scope to military and hybrid activities.

In considering approaches for regulating liability incurred from Western nuclear assistance programs to Russia, one needs to be attentive to the equities of the numerous players, the magnitude of potential damages associated with a given activity, and, finally, the context—military or civilian—in which damages might occur.

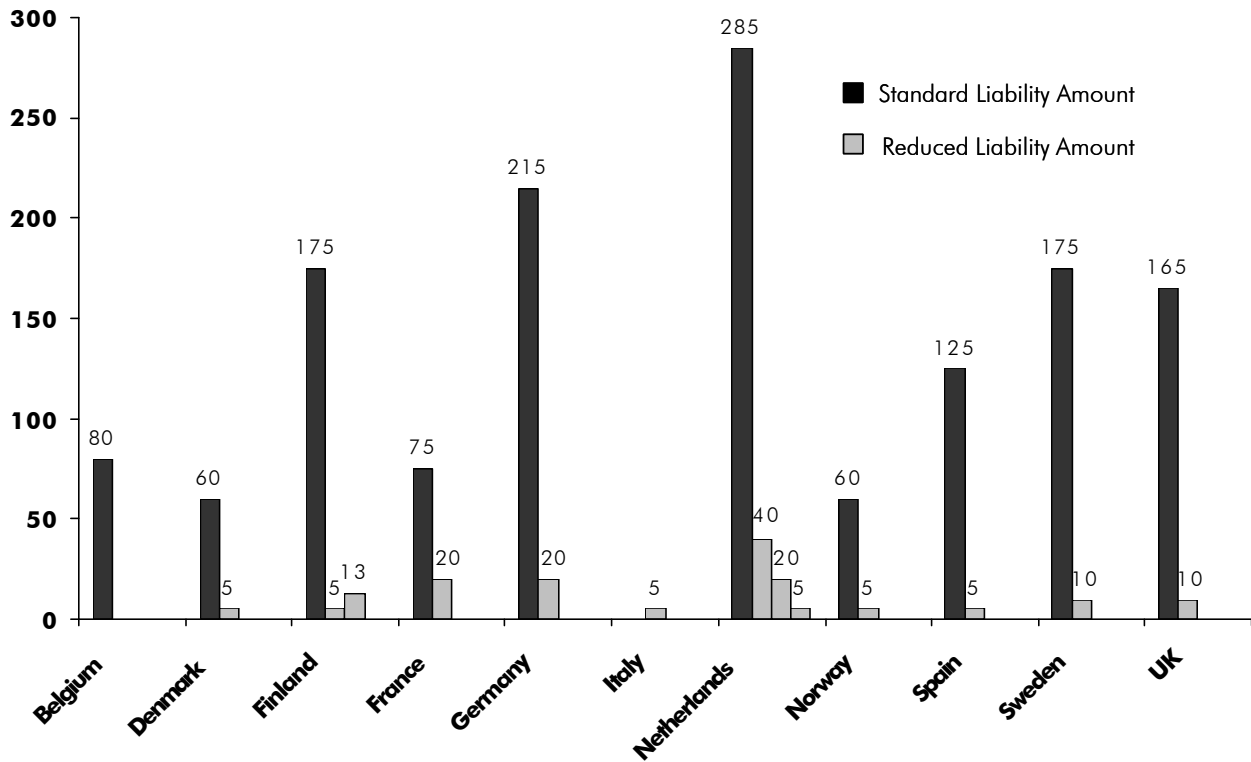
Box 1
LIABILITY AMOUNTS UNDER NATIONAL LEGISLATION

The bar graph below reflects national legislative requirements with respect to liability for third-party nuclear damage in all countries party to the Paris Convention, with the exception of Greece, Portugal, and Turkey, which have no relevant legislation. The Special Drawing Rights (SDR) calculations are based upon the rate of exchange of national currency units per SDR as of November 30, 1998, and have been rounded off to the nearest 5 million SDRs.

Black bars indicate the standard liability amounts applicable to nuclear power plants and other major nuclear installations.

Grey bars indicate the reduced liability amounts for equipment and materials. The assessment of such risks takes into account the nature of the nuclear installation or nuclear materials involved and the likely consequences of an incident. Neither Belgium nor Italy have legislated a reduced liability amount, whereas Finland and the Netherlands have adopted several reduced liability amounts corresponding to variations in the level of risk.

For Germany, where the liability amount is unlimited, the bars indicate the amounts of required security.



Source: 1998 Annual Report of the Organization for Economic Cooperation and Development, NEA, p. 27.

THE LEGAL LANDSCAPE

The controversy surrounding liability and compensation arrangements in Russia's assistance agreements with donor states must be examined in the context of other common approaches to these issues. Two such approaches will be considered here, following a review of the baseline legal principles, including the role of tort law and customary international law that apply in the absence of specialized laws or treaties. The first model is the most extensive and widely adopted—that is, the approach seen in specialized domestic and international legal instruments with respect to nuclear damage arising from civilian nuclear activities. In particular, the coverage in these instruments includes the operation of civil nuclear power plants, related civil nuclear fuel cycle facilities, and the related transportation of nuclear materials. The second model that will be examined was used to address liability and compensation issues in a major international nuclear assistance initiative of the mid-1990s outside the post-Soviet context. This program, whose future is now increasingly uncertain, is to provide two civilian nuclear power plants to North Korea through the Korean Peninsula Energy Development Organization (KEDO) in return for North Korea's freezing certain dangerous elements of its nuclear weapons program. As will be seen, this initiative utilized a variant of the specialized law approach and differed significantly from that employed in the contemporaneous bilateral nuclear assistance agreements with Russia.

The Baseline Legal Approach: Tort Law and Customary International Law

Before examining these models, it is worth briefly reviewing the regimes that would apply if no provision were made for liability, and instead, traditional legal practice applied to lawsuits for damage arising, for example, from a nuclear incident involving Western assistance to a Russian nuclear program. These traditional legal regimes are relevant not only to help understand various international regimes addressing the liability problem, but also because the rules are the ones that apply today in settings where these specialized systems are not applicable. At issue are suits by private parties, public (governmental) entities, and governments themselves. The targets of the lawsuits may be the same, although governments and some governmental entities at times may be immune from suit under the final point below.

- **Parties sued.** Following an incident in Russia causing nuclear damage, under 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—that is, not only against the “operator” in charge of the installation or activity causing the injury, but also against suppliers, contractors, and others whose actions might have been a factor in causing the injury (for example, the supplier of a defective part). Since all Russian nuclear operators are linked to the Russian government, the government would undoubtedly be one of the parties sued. Those seeking relief would normally sue parties with “deepest pockets,” (with the greatest financial resources) and that are “amenable to suit” (subject to the jurisdiction of an appropriate court and not able to assert the defense of sovereign immunity, as explained below).
- **Jurisdiction.** The suit could be brought in *any court* with jurisdiction over the party being sued, including not only the courts of the country where the incident occurred (the “installation state”) but also the courts of any other country where the sued party did business and had assets that might be seized and used to pay potential claims. Minatom, for example, was sued in U.S. courts in 2000 because, at the time, it had assets in the United States that the suing party sought to obtain through the lawsuit as payment of monies it was allegedly owed.²⁹
- **Applicable law.** The “conflict of laws” rules used in the country where the lawsuit was brought would determine which domestic law would apply to decide the case—for example, that of the installation state, that of the state where damage occurred, or some other option. This factor creates considerable legal uncertainty and encourages plaintiffs to deliberately select favorable jurisdictions.
- **Negligence versus absolute liability.** Also depending on the law that might apply, those seeking damages might be required to prove both that the party or parties sued had caused the damage in question *and* that this damage occurred through their negligence or deliberate action, an element that might be difficult to establish. Alternatively, the relevant law might provide that because an inherently dangerous activity was involved, those sued were “absolutely” liable and those seeking damages therefore needed only to establish that those sued caused the injury at issue.

Activities involving nuclear materials and facilities would usually be considered inherently dangerous, leading to the application of absolute liability, but the issue would need to be decided by the court exercising jurisdiction over the matter.

- **Exposure to claims.** Potential liability for nuclear damages would be open-ended. Depending on the law that might apply, secondary participants in the incident might be at risk of being liable for its entire cost—that is, at risk of being held “jointly and severally” liable, even if the profit they had made was far smaller, a type of exposure of great concern to suppliers and contractors. In addition, exposure might extend for thirty years, or longer, to allow recovery of damages for delayed effects.
- **No requirement for insurance or “financial security.”** Parties that are at potential risk of being sued are not required to carry insurance to meet potential claims, and no advance arrangements are made by their governments to make funds available to compensate such claims.
- **Sovereign immunity.** Traditionally, states themselves, are considered immune from lawsuits, unless they waive this privilege. This immunity might limit the opportunity to recover damages caused by certain state-run nuclear activities, especially those in the military sector.

The bilateral assistance agreements between Western donor states and Russia operate within the context of these general rules and do not change them. They seek to protect the donors and their suppliers and contractors, however, because in the agreements, with certain exceptions, Russia has undertaken that it will not, itself, sue these donors and related entities for damages (including nuclear damages) arising from joint programs. Russia has also agreed to (1) defend these parties (or pay defense costs) against claims brought by others and (2) pay any successful claims against these parties brought by others. The shorthand characterization of these arrangements is that Russia has agreed, respectively, to “hold harmless” and “indemnify” the donor governments and their suppliers and contractors. In agreements signed since the 1992 CTR Umbrella Agreement, however, Russia has usually insisted on language in liability provisions declaring that nothing in them may be interpreted as a waiver of its right to assert the defense of sovereign immunity or as granting jurisdiction to any court outside of Russia over third-party claims.

Customary international law—the behavior of states with respect to other states—may be developing and may also be relevant in this context, principally for nuclear damages that occur beyond the borders of the installation state. In the absence of specialized international conventions governing nuclear liability issues between an injured state and the installation state, customary international law would provide any basis for claims by the one against the other—including claims raised by victims of nuclear incidents but forwarded by their state. Despite some reluctance to recognize a customary international rule of strict state responsibility for injurious transboundary actions, under customary international law the concept of territorial sovereignty requires states to accept the general obligation that no state may act or permit the use of its territory in a manner contrary to the rights of other states. As a corollary, breach of this duty may entail international responsibility, calling for compensation.³⁰

Customary international law and other general principles are of considerable significance in dealing with the issue of nuclear damage because of the weaknesses in the treaty regimes discussed below. Specifically, the treaties do not contain clearly defined standards of conduct, and their implementation is dependent on existing or emergent standards of conduct under general international law. A significant number of states may opt out of the treaty regimes, and the rights and duties of those that do depend upon customary law. Performance and interpretation of treaties, moreover, are subject to emergent standards of international conduct, where applicable standards and “best practice” are constantly changing to take account of scientific developments. Additionally, since treaties require consent from all parties for amendment, the development of general principles of customary law, which can be adapted to changing situations, is important. The very serious nature of various air pollution obligations may entitle all states to resort to remedies under general international law, including self-help in the event of breach under the concept of *erga omnes*—rules applicable to all states and enforceable by all states. Finally, the moral appeal presented by customary norms is significant, reinforcing the fundamental importance of environmental obligations, which do not disappear in the absence of treaty commitments. These developments will not be elaborated upon further, but the possible evolution of customary international norms governing liability with regards to Russia is planned to be the subject of further study.³¹

Specialized Laws and International Conventions Governing Liability for Nuclear Damages from Civilian Nuclear Activities

The domestic and transboundary consequences of accidents from *civilian* nuclear activities have been addressed in numerous domestic laws and in various international and multilateral treaties. The leading principles of nuclear liability law have been under development since the mid-1950s, when they were introduced as a public policy to support nuclear energy as a part of national energy plans.³² (See Box 2.) Principles include the following concepts:

- Liability for nuclear damage is channeled exclusively to the operators of nuclear installations; that is, lawsuits may be brought only against these parties.
- Liability of the operator is absolute. The operator is held liable irrespective of fault. The party seeking damages needs only show that injury arose from radioactivity coming from the facility or material in question.
- Liability of the operator is limited in amount. (See below).
- Liability is limited in time. For example, under some relevant international conventions compensation rights may be extinguished if an action is not brought within ten years from the date of the nuclear incident.
- The operator must maintain insurance or other financial security for an amount corresponding to its liability. If such security is insufficient, the state where the installation is situated may be obliged to make up the difference, up to the limit of the operator's liability. (This is not a formal waiver of sovereign immunity, but has the effect of making public resources available to pay claims.)
- Jurisdiction over lawsuits lies exclusively with the courts of the contracting party in whose territory the nuclear incident occurred.
- Victims may not be discriminated against on the grounds of nationality, domicile, or residence, although within the international treaty arrangements discussed below, preference may be given to other treaty parties.³³

Domestic laws in many nuclear-power-producing states, particularly those in the West, incorporate these principles with respect to nuclear incidents occurring at facilities on their territory. Japan's relevant statute, for example, channels liability for damages from nuclear

incidents involving Japanese nuclear facilities to the facility operator, requires that the facility operator establish financial security at 60 billion yen (roughly \$500 million), and provides that the state will assist the operator in paying claims in excess of this amount.³⁴

The U.S. Price-Anderson Act with its amendments³⁵ also reflects these concepts, with certain variations. It provides for "economic channeling," rather than legal channeling, of claims through the facility operator, using the strict liability standard for large-scale damages together with strong financial coverage.³⁶ Under economic channeling any person, whether or not a nuclear facility operator, can be held liable for damages, but the facility operator bears the eventual economic burden of that damage, since the operator is obligated to indemnify any liable party.³⁷ The law limits the operator's overall liability to the level noted in the next paragraph. Thus, the end result for both economic and legal channeling is the same. (The person to which liability is channeled will carry the economic consequences of liability under economic channeling indirectly and under legal channeling directly, since no one else can be held liable. However, under economic channeling the general rules of law will still be applicable, whereas under legal channeling those rules will cease to apply.)

Financial coverage under the Price-Anderson Act begins with two layers of insurance: Each U.S. nuclear reactor operator is required to purchase \$300 million in private insurance and then, if additional reparations are required, all U.S. reactor operators must pay retroactively into a pool, up to \$88.1 million per reactor—the limit of their liability. The combined resources that might be available to compensate victims of a catastrophic nuclear power plant accident would total roughly \$9.5 billion, the largest liability limit of any country associated with a mandated financial security arrangement. If this total proves inadequate, Congress must step in to serve as "the insurer of last resort" and appropriate public monies for compensation of victims. Significantly, Price-Anderson also provides nearly \$10 billion in financial security for U.S. Department of Energy facilities and associated shipments, including coverage for incidents involving military activities.

Both the Japanese and U.S. domestic laws permit claims for transboundary damages and make the financial security noted above available to cover such claims, as well as those for damages occurring within the two states' respective national borders.

Box 2**COMPARISON: SPECIALIZED NUCLEAR LIABILITY TO TRADITIONAL LIABILITY IN TORT**

With respect to liability for nuclear damage from civilian nuclear activities, most states, regardless of whether they ratify and implement the international liability regime or rely upon a domestic regime, deviate from traditional liability principles in tort. In the former, as seen, liability is strict, channeled to the operator, and limited; insurance or equivalent financial security is mandatory.¹ Traditional liability in tort is based on fault unless the activity in question is found to be inherently dangerous, in which case, strict liability applies, any entity sharing responsibility for the injury may be liable, liability is unlimited, and insurance is voluntary.

There are several reasons for the deviation. First, strict liability strengthens the reparative function of liability—i.e., the provision of compensation to victims by making it unnecessary for victims to prove that the entity sued behaved irresponsibly through negligence or design. Persons engaging in activities that are inherently dangerous, such as the transport of explosives, however, are normally held to a strict liability standard, even under traditional tort principles, and it is most likely that implementation of this rule would apply the strict liability standard to virtually all nuclear activities even under traditional tort principles. The domestic nuclear liability laws and international nuclear liability conventions described earlier, however, adopt this standard unambiguously as a matter of domestic or international law, creating an added degree of certainty.

Second, the channeling of liability to one subject² in these nuclear instruments narrows the number of entities that may be sued, but this is balanced by the imposition of strict liability and the requirement for compulsory insurance. Therefore, the negative effect on reparation from channeling will usually be small. Channeling has other implications, as well. Without channeling of nuclear liability, the suppliers of goods and services would risk incurring open-ended liability for the potentially catastrophic harm caused by defects in their products or services, and they would therefore, in turn, have to insure. Nuclear damage would then be doubly insured, thus raising costs of civil nuclear activities. More importantly, channeling, like strict liability, simplifies the evidentiary burden necessary to establish the right to compensation, so that victims must demonstrate only causation—that the harm they have suffered is caused by the nuclear facility or materials of the operator.

Among the arguments against channeling is that insurance costs to the operator would be reduced because liability would often be shared. In certain cases the negative aspects of redundant insurance can be mitigated through the adjustment of insurance rates. In such cases traditional tort principles may be preferable because they provide for joint and several liability, which would extend to suppliers, allowing liability to be transferred to others beyond the operator in the event the operator exhausted its assets and insurance.³ This would prevent the use of channeling to minimize the total liability for the group of suppliers and the operator taken together, which could, under Western conditions, enhance incentives for safety.⁴ However, as seen, Western suppliers and manufacturers would be discouraged from projects upgrading safety at Central and Eastern European nuclear facilities because of the undue risk and real possibility they would stand responsible for the total compensation. Undercontributory negligence, if allowed, a claim could be raised against suppliers and manufacturers, but limited to the value of the supply, including possible profits.⁵

A third difference between domestic and international nuclear liability schemes and traditional tort law is that the former limit the liability of the operator. Limiting liability would appear to lessen the reparative function of tort

Internationally, the treaty most directly relevant to Western nonproliferation assistance programs in Russia is the 1963 Vienna Convention,³⁸ which entered into force in 1977 and is open to all states. It addresses nuclear damage from civil nuclear reactors, as well as from related fuel

production and management facilities, and provides that parties may limit the liability of operators of such installations on their territory to no less than \$5 million, but may establish higher limits if they wish. (The \$5 million was linked to the price of gold in 1963 and today is set at

Box 2 (CONTINUED)

law. However, in practice, unlimited liability in tort law does not exist. In reality, the amount of liability is ultimately limited to the amount of coverage provided by existing liability insurance plus the net worth of the entities that are sued. These two together under tort law often prove severely inadequate for full compensation of catastrophic damage. If nuclear liability is limited and the level is set at that acceptable to insurers, it will probably be below the amount that might be available under tort law, which also means victims will not receive full compensation. In practice, however, when states adopt the non-tort approach to nuclear liability, they assume liability for nuclear damage *above the liability limitation* and for providing compensation accordingly. Thus liability limits protect the operator from bankruptcy, but as a practical matter, may also provide adequate protection for victims.

A fourth difference is that compulsory insurance is not required under traditional tort. This fact does not influence liability in tort. However, since liability insurance increases the ability of the nuclear operator to fulfill its obligation, compulsory insurance promotes the reparative function of the liability. At the same time, it clearly limits the freedom of action of each nuclear operator. The duty to insure against liability or to provide equivalent financial security clearly imposes a burden on the nuclear power industry as a whole, as well as on state parties to the nuclear liability treaties.

¹ Marcus Radetzki, "Limitation of Third Party Nuclear Liability: Causes, Implications and Future Possibilities," *Nuclear Law Bulletin* No. 63 (June, 1999), p. 10-11, regarding the nuclear power industry. The same arguments are also maintained to apply to nuclear cooperation agreements between Western States and Russia since the subject matter is nuclear damage.

² As seen in the United States, an economic channeling approach was adopted rather than legal channeling. See Ben McRae, Assistant General Counsel, U.S. Department of Energy, "Recent Developments: New Legislation and Adherence to Conventions (USA)," paper delivered to Budapest Symposium, sponsored by OECD/NEA Legal Affairs, in cooperation with the IAEA and the European Commission, Budapest, May 31-June 3, 1999 (*Budapest Symposium*), p. 539. Tom vanden Borre, "Channeling of Liability," in Nathalie L.J.T. Horbach, ed., *Contemporary Developments in Nuclear Energy Law/Harmonizing Legislation in CEEC/NIS* (The Hague: Kluwer Law, 1999), p. 21 and 27 notes economic channeling, "a very wide and vague term," means the person causing the damage is in principle liable, but only one designated person will bear the eventual economic burden of that damage. Other persons than those to which liability is economically channeled can be held legally liable, in that they can reclaim amounts paid from the one who is economically liable. *The end result for both economic and legal channeling is the same.* The person to which liability is channeled will carry the economic consequences of liability under economic channeling indirectly and under legal channeling directly, since no one else can be held liable. However, under economic channeling the general rules of law will still be applicable, whereas under legal channeling, those rules will cease to apply.

³ See Michael Trebilcock and Ralph Winter, "The Economics of Nuclear Accident Law," p. 235. Tom vanden Borre, "Channeling of Liability: A Few Juridical and Economic Views on an Inadequate Legal Construction," in Horbach, ed., *Contemporary Developments in Nuclear Energy Law*, p. 21, notes that under the U.S. legislation without legal channeling and with *established coverage* following the Three Mile Island Accident both the designer and constructor of the installation were sued, but U.S. nuclear insurance pools covered both. See also Marc Beyens, "Damage to "On-Site" Property," *Budapest Symposium*, p. 508, who questions whether channeling under the Paris and Vienna Conventions applies equally to *contractual and extra contractual liability* and consequently whether the operator can invoke the general liability of one of his suppliers in the event of nuclear damage to on-site property caused by that supplier's negligence. Henrik Seland, Legal Office, Norwegian Ministry of Foreign Affairs, interview by Douglas Brubaker and Jildou Dorenbos, Oslo, December 17, 2001, indicated a belief that in such circumstances suppliers and manufacturers of a nuclear installation could be sued under contract by the operator in spite of channeling under the international regimes. Marc Beyens, "Damage to "On-Site" Property," *Budapest Symposium*, p. 508, concludes that an institutional decision is necessary in order to put an end to the legal uncertainty.

⁴ In addition to the danger of loss of the installation, the possibility for ensuing liability is felt to represent a real incentive to safety. The more remote a supplier or manufacturer is from an installation, the potential for carelessness would seem to increase. Potential liability supplies direct linkage.

⁵ Norbert Pelzer, "Comments," *Budapest Symposium*, pp. 578 and 583. Steve McIntosh, "Comments," *Budapest Symposium*, p. 581. See also Walter Gehr, "Comments," *Budapest Symposium*, p. 580.

roughly \$80 million, the figure that will be used hereinafter.)³⁹ The operator must maintain insurance coverage to the nationally established limit, or the installation state must make up the difference. In 1997, a protocol to the Vienna Convention (1997 Vienna Protocol) was opened

for signature that would gradually increase the minimum liability of installation operators to roughly \$400 million, but it has not yet entered into force.⁴⁰ Parties to the Vienna Convention and comparable arrangements must pass domestic legislation to bring domestic legal rules into confor-

mity and to establish the required financial security arrangements. Russia has signed, but not ratified the Vienna Convention and has not adopted related domestic legislation. The United States is not a party to the treaty principally because the Price-Anderson Act adopts the somewhat different approach to the channeling of liability. As also noted, however, the U.S. law effectively adopts the overall approach of the Vienna Convention and, indeed, provides for compensation at a far higher level than the treaty requires, even as amended by the 1997 Vienna Protocol. Norway is not a party to the Vienna Convention, but is a party to the regional Paris/Brussels Conventions and 1988 Joint Protocol, discussed next.

The Paris Convention, which in 1960 focused on member states of the European Community and is now restricted to members of the OECD, was the template for the Vienna Convention and originally carried roughly comparable liability limits. In 1963, however, it was augmented through the adoption of the Brussels Convention to provide far more generous minimum compensation protection, now at 300 million special drawing rights (SDR), or \$410 million per incident (for nuclear power plant accidents). The Brussels Convention specifies that the installation state must provide SDR 175 million of this amount and that the remainder must be contributed by other parties to the convention, collectively, on the basis of their installed nuclear electric generating capacity, a pooling arrangement akin to that used in the United States in the Price-Anderson Act. In 2002, the parties to the Paris/Brussels Conventions agreed to a new amendment (the "pending Paris Amendment") with minimum limits on liability and financial security, totaling roughly 1.5 billion euros.⁴¹ Individual operators were to provide 700 million euros in insurance coverage, the installation state was to provide 500 million euros from public monies, and collective contributions from all parties to the conventions (according to installed nuclear capacity) would provide the remaining 300 million euros. This amendment is not in force, but parties expect this change to be ratified in the next several years.⁴² Russia is not eligible to join the Paris/Brussels Conventions because it is not a member of the OECD. The United States is unwilling to join because the U.S. approach to channeling liability differs from that which the treaties require. As of this writing, the pending Paris Amendment still awaits approval by the European Union and has not been formally opened for signature.

The 1988 Joint Protocol seeks to harmonize the Vienna and Paris/Brussels Conventions by linking the two

regimes. Under the 1988 Joint Protocol, members of the two convention systems are, in effect, accorded reciprocal privileges. A Vienna Convention state that suffers nuclear damage from an incident in a Paris/Brussels Conventions state is eligible to pursue remedies under the latter conventions, and vice versa, including potential receipt of compensation from any insurance and pooling resources established under the treaty to which the installation state is a party.

The 1997 Convention on Supplementary Compensation for Nuclear Damage establishes a liability/compensation system for nuclear damages arising from civilian nuclear power incidents, which builds upon that in the Vienna Convention and Paris/Brussels Conventions. This system includes the channeling of liability to the installation operator, exclusive jurisdiction in the courts of the installation state, and strict liability. An annex to the 1997 Supplementary Convention, however, provides that the "economic channeling" approach used in the United States would satisfy the instrument's channeling requirements, thus making it possible for the United States to join. Indeed, the United States led the effort to develop the 1997 Supplementary Convention, in the hope of creating a unified international civil nuclear damage compensation regime. The United States was the first signatory of the 1997 Supplementary Convention, and the treaty is now before the Senate for ratification. Under the 1997 Supplementary Convention, parties agree to a two-tiered system of compensation for nuclear damage. Individual parties are responsible for the first tier of coverage for SDR 300 million (\$410 million) in claims, which the installation state might provide, for example, through an appropriation, private insurance, or the separate pooling arrangement specified in the Paris/Brussels Conventions. The 1997 Supplementary Convention permits a country to establish a lower level of first-tier coverage, to be no less than SDR 150 million (\$162 million), during the period through September 2007, an amount that reflects the current availability of private insurance.⁴³ The 1997 Supplementary Convention then establishes a pooling arrangement for second-tier coverage, under which parties are to provide additional monies to compensate claims, with pool contributions to be made on the basis of installed nuclear capacity and UN rate of assessment of each party. Eventually, the second-tier pool coverage will be SDR 300 million (\$410 million) as the principal nuclear-power-producing states join the agreement. Like the 1997 Vienna Protocol, however, the 1997 Supplementary Convention, as well as the pending Paris Amend-

TABLE 1
SUMMARY OF COMPENSATION PROVISIONS OF MULTILATERAL CONVENTIONS
FOR COMPENSATION FOR NUCLEAR DAMAGE

Convention ¹	Total Minimum Coverage Required	Operator	Installation State	Pool
1963 Vienna Convention	\$5 million (linked to the price of gold; now \$80 million)	Operator or state to provide		None
1997 Vienna Protocol*	\$400 million	\$400 million (or \$200 million if state provides difference)	\$200 million if operator provides only this amount	
1960 Paris Convention with 1963 Brussels Convention	SDR 300 million	SDR 175 million	Difference to SDR 175 million (if operator less than this amount)	SDR 125 million (according to installed nuclear capacity)
Same, with 2001 Amendment*	€1.5 billion	€700 million	€500 million	€300 million (according to installed nuclear capacity)
1997 Supplementary Convention*	\$200 million to 2007; \$400 million thereafter plus pool amount. Ultimate expected total \$800 million	Operator or State to provide \$200 million to 2007 \$400 million thereafter		Additional amounts to be provided (according to installed nuclear capacity and rate of UN assessment) Ultimately, \$400 million to be available

¹ The 1988 Joint Protocol unifies the Vienna and Paris/Brussels Conventions. Endnote 38 lists the parties to each of the foregoing international treaties.

* These conventions are not in force.

SDR = Special Drawing Rights. SDR calculations are based upon the rate of exchange of national currency units per SDR as of November 30, 1998, and have been rounded off to the nearest 5 million SDRs.

€ = Euros

ment, are not yet in force because they have not been ratified by the requisite minimum number of states.⁴⁴

In all of the foregoing treaties, it should be stressed, the special legal provisions governing damage claims and access to compensation funds provided by the installa-

tion state party, or by the member state pools, are available only to satisfy claims for nuclear damages occurring in the installation state or on the territory of other parties to the respective treaty. Persons in nonparty states who suffer nuclear damage must seek compensation through

other means. They may find that, in pursuing lawsuits in the installation state, the domestic laws of that state governing nuclear liability may limit their remedies. Other states, such as Austria and Ireland, which are non-nuclear, have chosen to remain outside the nuclear liability regime, relying upon their domestic tort law.⁴⁵ The 1997 Supplementary Convention, however, is designed to encourage widespread membership so that its approach might eventually become universal among nuclear-power-producing countries and non-nuclear-power producing states, especially those most likely to be affected by a nuclear incident in one of the former.⁴⁶

It must also be underscored that the foregoing treaties apply only to the *peaceful* (i.e., civilian) uses of nuclear energy and would not provide a scheme of compensation for accidents arising from military nuclear activities, such as the production, transport, or deployment of nuclear weapons. In addition, the Vienna Convention, the Paris/Brussels Conventions, and by extension, the 1997 Supplementary Convention, exclude coverage for accidents stemming from maritime propulsion reactors, including those used for peaceful civilian purposes, such as those on Russian icebreakers. The treaties also exclude damage from "armed conflict, hostilities, civil war, or insurrection."⁴⁷ Legal experts believe, however, that the international instruments *would* extend to nuclear damage caused by acts of terrorism against civil nuclear installations. The insurance mechanisms these conventions set up would thus appear available to provide compensation to victims of radioactive releases from a nuclear power plant caused by an act of terrorism, but not releases caused by an act of war.⁴⁸

In spite of these developments, the dual system (based on the Vienna Convention and the Paris/Brussels Conventions, respectively) is still in place, and the 1997 Supplementary Convention, as well as the 1988 Joint Protocol, may have increased the complexity of conventional relations between states in this arena.⁴⁹ This seems particularly so since the 1988 Joint Protocol itself also likely needs amending to ensure harmonization.⁵⁰ Further, it remains uncertain whether a global and unified regime for civil nuclear liability will emerge in the future, given that, at least for now, the main civil nuclear powers are not parties.⁵¹

Importantly, as noted earlier, Russia is not a party to any of these instruments, nor does it yet have in place a domestic law to provide compensation for nuclear damages. Russia, of course, is not alone in remaining outside the Vienna Convention system. The major civil nuclear

powers—including the United States, Canada, China, South Korea, and Japan—are also not parties to the treaties on civil nuclear liability.⁵² All of these, however, have domestic laws, such as the U.S. Price-Anderson Act, establishing arrangements for compensating damages caused by civil nuclear activities.⁵³

The governments of the United States, the United Kingdom, and Norway, as well as the International Atomic Energy Agency (IAEA), have urged Russia to join the Vienna Convention and associated international nuclear liability conventions.⁵⁴ Initially, Russia appeared ready to move in this direction.⁵⁵ Between 1995 to 1997, Russia enacted a law, "On the Use of Atomic Energy,"⁵⁶ signed the Vienna Convention, drafted a proposed law "On Indemnification for Nuclear Damage and Nuclear Insurance,"⁵⁷ and submitted to the Duma, the lower house of the Russian Parliament, a bill to ratify the Vienna Convention.⁵⁸ However, since that time, Moscow appears to have taken only minor steps in this direction,⁵⁹ while at the same time several of the former Soviet republics, including Ukraine, have ratified the Vienna Convention and other treaties governing liability.⁶⁰ For the moment, the process appears to be stalled in Russia, and exactly when legislation may be enacted cannot be predicted.⁶¹

As a practical matter, Russia's joining the Vienna Convention and the 1988 Joint Protocol and adopting domestic legislation to implement these particular instruments would have only a modest impact on the issues of liability and compensation for nuclear damages related to Western-sponsored nuclear assistance programs. 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. Russia might address this by adopting higher minimum limits of liability and financial responsibility, but it has indicated little interest in moving in that direction.⁶² In addition, many potentially affected states, including China, Japan, and most Central Asian states, are not parties to the Vienna Convention and are outside of the geographic scope of the Paris/Brussels Conventions; thus, they would not necessarily be eligible to take advantage of the expedited legal procedures under the Vienna Convention or assert claims against any financial security fund that Russia might establish. Most importantly, as discussed above, the Vienna Convention does not cover damages from military nuclear activities or from nuclear propulsion systems. Most of these problems would also limit the utility of Russia's joining the 1997 Supplementary Con-

vention at this time. Even though that instrument contemplates more generous liability limits and financial security levels, and also provides a pooling arrangement that makes large payouts practical for states in Russia's uncertain economic situation, it does not cover nuclear incidents caused by defense activities.

Russian officials state that despite Moscow's failure to ratify the Vienna Convention and its failure to enact domestic legislation providing for compensation for nuclear damage, Russia complies with the indemnity requirements of the Western donor states by means of the bilateral liability agreements currently in force.⁶³ These include the agreements mentioned above with the United States,⁶⁴ Norway,⁶⁵ the European Bank of Reconstruction and Development (EBRD),⁶⁶ Germany,⁶⁷ the Commission of European Communities,⁶⁸ France,⁶⁹ and the Nordic Environment Finance Corporation.⁷⁰ A trilateral agreement between Russia, France, and Germany may also be mentioned.⁷¹ Negotiations with the United Kingdom and the Netherlands may be under way.⁷² The liability provisions of the representative agreements are discussed in the section, Liability Provisions in Russia's Bilateral Nonproliferation Assistance Agreements with Western States.

In all of these accords, however, the relevant provisions merely address the extent to which Russia will accept liability for nuclear damage arising from joint activities under the agreement in question. In none of the agreements has Russia committed to establishing an insurance and indemnification system that would ensure the compensation of those suffering nuclear damage within Russia or abroad stemming from the relevant cooperative program.⁷³ The same pattern is evident in Russia's negotiations on a liability provision in a framework agreement for AMEC and to support the MNEPR initiative.

Although the international civil nuclear liability regimes do not provide a complete alternative solution for protecting Western donor states from liability for nuclear damages arising from their nuclear assistance programs with Russia, they do provide important benchmarks for understanding this problem. In particular, the treaties, either as in force, or as currently open for signature, provide guidance as to what may be reasonable to expect from a state engaging in nuclear activities capable of causing large-scale nuclear damage.

The evolving consensus, seen in the 1997 Vienna Protocol, the 1997 Supplementary Convention, and the pending Paris Amendment, appears to be that following

a major nuclear incident, a state may expect to face, at the least, many hundreds of millions of dollars in damage claims. In addition, a state, through private insurance and appropriated funds, can be expected to take financial responsibility for \$400 million or more of such claims, although states with weaker economies may approach this target gradually. Above a certain level of nuclear damage and financial coverage, it is reasonable for a state to seek to share costs with other states exposed to similar risks, under pooling arrangements whereby pool participants make retrospective payments to assist the state suffering the calamitous loss. Above this, a state may still be liable under customary international law.

It is also worth noting that the approach taken by many Western donor states in supporting the international liability regimes for nuclear damage is rather at odds with the stance they have adopted with respect to nuclear assistance to Russia, which places full responsibility for nuclear damage on Russia, alone, irrespective of the magnitude. As mentioned, the United States is the chief proponent of the 1997 Supplementary Convention, with its pooling arrangements for damage claims above the level of SDR 300 million (\$410 million), while Norway is a member of the Paris/Brussels Conventions and the 1988 Joint Protocol, which likewise contemplate the pooling of resources to meet catastrophic nuclear incidents. These issues will be addressed further in the concluding sections of the article.

The KEDO-DPRK Agreement—An Additional Model

As the United States and Norway were entering into new nuclear assistance agreements with Russia during the mid-1990s, the United States was also engaged in negotiations regarding a nuclear assistance program for North Korea. Under the 1994 Agreed Framework,⁷⁴ North Korea agreed to freeze elements of its nuclear program that provided it the ability to manufacture plutonium for potential use in nuclear weapons. In return, the United States agreed to lead an international consortium that would provide North Korea with two commercial light water nuclear power plants, installations that would be more resistant to proliferation than the frozen elements of the North Korean nuclear program.

In March 1995, the United States, South Korea, and Japan established the Korean Peninsula Energy Development Organization (KEDO) to arrange for the financing and construction of the nuclear power plants.⁷⁵ Because of controversies concerning North Korea's continued

development of nuclear weapons, in late 2002 both parties to the 1994 Agreed Framework declared the pact to be void, and it appeared as of early 2003 that KEDO might shortly end its operations. The KEDO-DPRK Agreement⁷⁶ to supply the light water reactors, however, provides a model that may be relevant in considering how to address liability arrangements for Western nuclear assistance programs for Russia.

Article XI of the KEDO-DPRK Agreement outlines the principles that are to govern liability issues. In brief, it provides that the DPRK is to indemnify all successful claims for nuclear damage, phrasing roughly comparable to that provided in a number of Western donor state agreements with Russia. The KEDO-DPRK Agreement, however, also contains a major requirement not seen in those agreements, which aligns the pact with the rules for nuclear liability *and compensation* seen in specialized international treaties and/or the domestic law of most Western nuclear-power-producing states. Specifically, the KEDO-DPRK Agreement includes provisions for the channeling of liability to the operator and strict liability, as well as the requirement that North Korea obtain insurance or other security to ensure its ability to pay future claims for nuclear damage.⁷⁷

In effect, the liability arrangement is a hybrid, including elements frequently seen in the bilateral liability arrangements *and* crucial elements of the specialized international regime for nuclear liability. These provisions were reiterated in July 1997 in the agreement providing for the accession of the European Community to KEDO.⁷⁸ Several rounds of negotiations on the liability protocol have taken place, but no agreement had been reached by the time North Korea's nuclear weapon activities called the future of the KEDO project into doubt in late 2002.⁷⁹

Thus, contemporaneously with their negotiation of several new nuclear assistance agreements with Russia—under which the principal Western donor states sought to place all responsibility for nuclear damage on Russia, while making no provision for financial security to cover the costs of compensation—these very donor states were implementing, and then reaffirming, a different approach with North Korea. Under this approach, not only was North Korea to accept responsibility for damages arising from nuclear cooperation with the West, but was it also required to provide for the assured financing of compensation, which contemplated possible pooling arrangements with KEDO member governments.⁸⁰

It must be noted that although many key suppliers under the KEDO-DPRK Agreement were prepared for

participation, despite the fact that the liability protocol remained to be negotiated, one important potential U.S. supplier, General Electric Company, found the remaining uncertainties unacceptable and requested indemnity protection from the U.S. government. The Clinton administration considered offering such coverage, but key members of the U.S. House of Representatives objected, and a U.S. government indemnity was never offered. As a result, General Electric withdrew its participation, requiring KEDO to identify another supplier of the equipment involved.⁸¹ The episode underscores the importance of these issues in international nuclear assistance programs, as well as the need for credible and reliable arrangements to induce wide participation in them by private entities.

LIABILITY PROVISIONS IN RUSSIA'S BILATERAL NONPROLIFERATION ASSISTANCE AGREEMENTS WITH WESTERN STATES

The background provided in the preceding sections offers a number of valuable benchmarks for assessing the liability provisions in nuclear assistance agreements between Western donor states and Russia. As noted, these agreements fall into roughly three groups. The first comprises the agreements—the 1992 CTR Umbrella Agreement and derivative agreements—in which Russia appeared to accept liability for nuclear and other damage from joint activities unconditionally.⁸² The second group consists of agreements signed in the subsequent decade, including the 1993 U.S.-Russia International Nuclear Safety Program Agreement, the 1998 U.S.-Russia Nuclear Cities Initiative Agreement, and the 1998 U.S.-Russian Plutonium S&T Agreement, as well as Russian agreements with the Commission of European Communities (1995), the EBRD (1995), Germany (1998), Norway (1998), France and Germany (1998), France (2000), and the Nordic Environment Finance Corporation (2002). In these agreements, Russia objected to the unconditional approach to liability of the CTR Umbrella Agreement and most often succeeded in gaining modifications.⁸³ The third group consists of the currently pending agreements, where negotiations on this issue have continued. These include the U.S.-Russia-Norway AMEC Agreement, the multi-party MNEPR Agreement, the U.S.-Russian 2000 Plutonium Agreement (where a liability protocol must be concluded), and the renewals of the U.S.-Russian 1998 Plutonium S&T Agreement and the Nuclear Cities Initiative Agreement.⁸⁴ This section will take a closer look at the liability provisions of a number of representative

bilateral agreements from the first two categories that are currently in force.

Liability provisions under the CTR Umbrella Agreement, the EBRD Agreement, the Norwegian-Russian Agreement, the German-Russian Agreement, and the Franco-Russian Agreement all seek to minimize the risk of liability to the Western partner but achieve this goal to varying degrees. The strongest protection for the donor government and its suppliers is in the CTR Umbrella Agreement, while the others contain provisions that rather weaken such protections.

Briefly, the CTR Umbrella Agreement is concerned with the dismantling and transport of military nuclear material and equipment and covers both military and civilian activities. Specifically, this work involves the destruction of nuclear, chemical, and other weapons of mass destruction (WMD); the safe and secure transportation and storage of these prior to their destruction; and the establishment of additional verifiable measures against the proliferation of weapons that pose such a risk. The U.S. Department of Defense and the Russian Minatom and the Ministry of Defense are the parties responsible, with the Russian Ministry of the Economics responsible for elimination of strategic offensive arms and chemical weapons production facilities. The agreement applies to all material, training, or services provided under it or implementing agreements, and to all related activities and personnel.⁸⁵

The pertinent liability provisions attempt to provide for the *complete removal from liability* of the United States and U.S. companies and personnel with respect to CTR program activities carried out in Russia. Russia must hold harmless⁸⁶ and bring no legal proceedings against the U.S. government or U.S. employees, contractors, or contractors' personnel for damage to Russian property or death or injury to Russian personnel arising out of activities under the agreement. Legal actions against these U.S. parties involving contracts are permitted, however. Claims by third parties arising out of acts or omissions of U.S. employees, U.S. contractors, or contractors' personnel performed as official duties are, however, the "responsibility of the Russian Federation," a phrase that the United States believes requires Russia to indemnify all claims paid by the U.S. government and/or its suppliers. Russia must thus reimburse the United States for any successful claims against it. The parties may provide compensation in accordance with their domestic laws, and the parties may consult as appropriate on claims and proceedings. The above may not be interpreted to prevent legal proceed-

ings against Russian citizens or permanent residents of Russia. Despite termination of the CTR Umbrella Agreement or the implementing agreements, Russia's obligations with respect to liability and ownership continue to apply without respect to time, unless decided otherwise. Sovereign immunity is not mentioned, nor does the provision state that it cannot be construed as acknowledging the jurisdiction of any court, nor is an exception made for premeditated actions. As noted earlier, several additional U.S.-Russia nonproliferation agreements also employ this language.

U.S.-Russian nonproliferation agreements that are not directly linked to the CTR Umbrella Agreement employ a different set of provisions to address liability, provisions that are quite similar to those used in the Western European agreements with Russia. Briefly, the agreements explicitly provide that Russia shall "indemnify" successful third-party claims against the U.S. government and its contractors; some observers consider this language to be stronger than the CTR Umbrella Agreement formulation (under which Russia accepts "responsibility" for such claims). The agreements also provide that Russia shall cover defense costs. However, agreements in this group also contain a number of limitations in the form of provisions stating that Russia does not accept liability for nuclear damages where individuals are sued for injuries arising from their "premeditated actions," that the agreement cannot be construed as waiving Russia's sovereign immunity, and that the agreement cannot be construed as acknowledging the jurisdiction of any court (in some cases, any court outside of Russia).⁸⁷

Contractors have not been fully confident in these provisions, however. Department of Defense officials and contractors operating under the CTR Umbrella Agreement have, for example, tried to ensure that activities most likely to involve exposure to large-scale liability—such as the construction of rail cars for transporting nuclear weapons or the dismantlement of nuclear submarines—are undertaken by Russian contractors. Such actions focus potential liability for the most serious accidents on Russian organizations, rather than on U.S. entities.⁸⁸ In the case of other U.S.-Russian nonproliferation assistance agreements, major U.S. contractors, including many in the Department of Energy National Laboratories, have demanded express indemnities from the United States government before undertaking work in Russia. Such indemnities were provided to a number of national laboratories (which are owned by the U.S. government and operated by universities or private corporations), but

indemnities were not offered to purely private firms. As a result, many of the latter organizations declined to participate in certain DOE programs.⁸⁹ As seen below, contractors operating under Western European nonproliferation assistance agreements with Russia have also expressed reservations about the effectiveness of liability provisions in these instruments.

The 1995 EBRD Agreement is similar to the CTR Umbrella Agreement but is somewhat less extensive and differently structured. The EBRD Agreement addresses assistance, provided through the Nuclear Safety Account (NSA), to improve the safety of the Kola, Novovoronezh, and Leningrad nuclear power plants; thus, it involves only nonmilitary activities. Liability is addressed in one provision, which states that, with the exception of claims for damage arising from premeditated actions, Russia irrevocably guarantees full and effective indemnification for the EBRD administrator and its employees, agents, and subcontractors, both during and following the term of the agreement.⁹⁰ The indemnity is from and against all actions, claims, losses, liabilities, expenses, or damages in connection with a project or relevant grant agreement, whether inside or outside Russia. A rather more comprehensive *Indemnity Statement* is attached to the EBRD Agreement, which the Russian government states to be binding and irrevocable and in favor of contractors, consultants, and suppliers of equipment or services financed through grant funds from the NSA. This addresses liability in much the same manner as does the 1992 CTR Umbrella Agreement, including the provision that legal proceedings may be brought against Russian nationals or permanent residents.

The EBRD Agreement notes, however, that it is needed as an interim measure pending Russian adherence to the Vienna Convention or a similar internationally accepted nuclear liability regime. Other differences with the CTR Umbrella Agreement include a statement in the EBRD Agreement that it may not be construed as acknowledging the jurisdiction of any court outside Russia over third-party claims—except for Stockholm for arbitration—or as waiving the sovereign immunity of Russia with respect to third-party claims. The EBRD Agreement requires that Russia adopt a domestic law addressing nuclear liability and providing financial security, and its invocation of the desirability of Russia's ultimately joining the Vienna Convention and 1988 Joint Protocol suggests the EBRD's recognition of the importance of the issue. Unlike a number of other Western nonproliferation assistance agreements, the EBRD agreement

focuses exclusively on civilian nuclear power facilities, so that the Vienna Convention would cover all activities under it that might lead to significant damage claims. Unless Russia chose to limit liability well above the \$5 million minimum requirement, however, its joining the convention might do little to ensure adequate compensation of potential victims of a nuclear incident.

Attached to the "Indemnity Statement" in the EBRD Agreement is a model Confirmation Letter of Indemnity in favor of suppliers financed by the NSA. Under this letter, the Russian Government agrees to indemnify and bring no claims against specified contractors, subcontractors, consultants, suppliers, and subsuppliers of equipment or services and their personnel. Minatom appears as the representative of the Russian Government. These letters appear similar to the *Specific Confirmation Letters* addressed below and were developed pursuant to the Indemnity Agreement under the 1995 European Commission (EC) Memorandum⁹¹ to alleviate the initial problems surrounding insufficient coverage.⁹²

The Norwegian-Russian Agreement, in relevant part, substantially resembles the Indemnity Statement given by Russia attached to the EBRD Agreement,⁹³ including provisions stating that Russia does not accept liability for nuclear damages where individuals are sued for injuries arising from their "premeditated actions," that the agreement cannot be construed as waiving sovereign immunity, and that the agreement cannot be construed as acknowledging the jurisdiction of any court outside Russia, except under UNCITRAL arbitration rules. In addition, the Norwegian agreement drops the declaration that Russia will hold Norway "harmless"—a provision included in a number of other agreements to ensure that Russia will pay the legal defense costs of the other party and its contractors—and instead states that Russia "shall provide for the adequate legal defense" of Norway and its contractors. The principal difference between the Norwegian-Russian and EBRD-Russian Agreements is that the former includes military projects and lacks specific reference to Russian ratification and implementation of the Vienna Convention and the 1988 Joint Protocol. (The former also notes that the liability provisions shall not prevent indemnification by the parties for damage in accordance with their national laws, which, however, has a counterpart under the CTR Umbrella Agreement and the other bilateral agreements.)

Of the other bilateral agreements, the agreements between Germany and Russia, and France and Russia, govern civilian nuclear installations in Russia, and essen-

tially reflect the same contours as the EBRD and Norwegian-Russian Agreements above, as well as the EC Memorandum.⁹⁴ Differences include a premeditated action exception is narrowed to “deliberate action on the part of the German/French party or supplier,” anticipated ratification of an international nuclear liability treaty, and a requirement for immediate notice to Russia of judicial action against the parties. The Franco-German-Russian Agreement dealing with the civil use of plutonium resulting from dismantled Russian nuclear weapons follows similar lines, but without reference to ratification or immediate notice. The Nordic Environment Finance Corporation-Russian Agreement governs on the Kola Peninsula the dismantling of the *Lepse* nuclear waste storage vessel, the development and production of a prototype spent nuclear fuel transport and storage cask, and the establishment of a liquid radioactive waste treatment facility. Its liability provisions are substantially similar to those of the Norwegian-Russian Agreement. Most of these agreements refer to utilization of UNCITRAL arbitration rules. It is likely that the draft bilateral agreements between the U.K. and Russia, and the Netherlands and Russia, governing liability for nuclear damage will reflect generally the same approach, as will liability arrangements associated with the trilateral framework agreement under negotiation by the AMEC parties and with the MNEPR framework agreement.⁹⁵ (See Appendix I.)

Although these broad provisions in the agreements between Western European states and Russia have satisfied the respective government partners, before carrying out work involving the Russian nuclear industry, private Western suppliers of equipment and services have required additional guarantees from the Russian government. These usually take the form of a specific Confirmation Letter of Indemnity or other guarantee by the Russian state, which provides explicit coverage under Russian domestic law, ensuring the extension to private parties of the protections embodied in Russia’s international obligations.⁹⁶ Thus, like many of their U.S. counterparts under several U.S.-Russian nonproliferation agreements, Western European suppliers have not been prepared to rely on the liability terms of the agreements themselves, but have sought additional protection.

As noted, Russia’s still-developing insurance markets, lack of state capital for providing compensation, and unpredictable judicial system have often limited companies to activities involving minor exposure to liability. The Indemnity Agreement under the EC Memorandum was considered insufficient by European firms that carried out

work under that instrument, and they refused to release results achieved in E.U. technical assistance programs in the Commonwealth of Independent States (TACIS) projects.⁹⁷ Project reports, recommendations, and assessments were withheld from distribution to Russian beneficiaries for fear of ensuing liability, because they were not confident that Russia’s pledges made under public international law would be effectively translated into contractual obligations under civil law.⁹⁸ A “comfort letter” was then provided by the Commission, guaranteeing that the EC would undertake to induce Russia by any legal or diplomatic means to meet its obligations under the EC Memorandum. However, the nuclear industry continued to maintain its embargo on the release of reports, without provision of a “specific confirmation letter” setting forth that Minatom confirms *for each contract* concerning deliverables that the same obligations Russia made under public law will apply with regard to civil law. These problems appear to have been partially alleviated, however, and Confirmation Letters of Indemnity have apparently been provided for each contract.⁹⁹ Even so, many Western suppliers continue to confine their involvement in nuclear assistance projects to areas where the risk of liability remains low.

Russia’s ratification of an international liability instrument will likely not end Western companies’ insistence on letters of indemnity. The Ukraine and several other former Soviet republics, although parties to the Vienna Convention, are still required to provide these letters to ensure coverage acceptable to Western companies.¹⁰⁰ Thus, so far, these letters seem to represent a necessity in international nuclear cooperation with Russia, and the relevant indemnity provisions may set a precedent. Even then, Western suppliers and contractors remain uneasy. Despite the availability of Confirmation Letters of Indemnity, many suppliers limit their involvement in projects with these countries to reduce exposure to significant damage claims, while others insist on promises of indemnity from the donor governments.

On the Russian side, some officials also appear unsatisfied with this approach. As one has stated:

Unfortunately, our Western partners do not wish to notice such progress in the Russian legislation and are very insistent in requiring additional assurances from the Russian Federal Government. In so doing, they considerably complicate co-operation in the nuclear field. It is clear that the lack of a mechanism in Russia similar to that of the 1963 Vienna Convention complicates the Court procedures for decision-making on

nuclear indemnity issues, but the practice of the assurances of the Russian Federal Government, which is being imposed, is unlikely to simplify them.¹⁰¹

Finally, it is worth emphasizing that similar to the CTR Umbrella Agreement and other U.S.-Russian nuclear assistance understandings, none of the Western European nuclear assistance agreements specifically requires that Russia provide financial security to ensure its ability to meet its indemnification commitments, nor do the agreements offer other mechanisms, such as pooling arrangements, to cover nuclear damage from catastrophic nuclear incidents.¹⁰² No less important, except for the CTR Umbrella Agreement and derivative agreements that come under its liability provisions, in all of the U.S. and Western agreements, Russia has explicitly reserved the right to assert the defense of sovereign immunity, a factor that could make law suits in Russian or other courts a useless exercise.¹⁰³

How would the above liability arrangements work in practice? Imagine that an accident led to an explosion aboard a nuclear submarine being dismantled on the Kola Peninsula with U.S. assistance under the CTR Umbrella Agreement and that the accident sent a cloud of radiation downwind many of hundred miles. Imagine then that lawsuits were brought by affected Russian and foreign nationals in the amount of \$500 million against all parties potentially responsible for the event: the Russian Navy, the relevant privately owned Russian shipyard, the U.S. government, and the U.S. contractor assisting with the dismantlement activities. If the suit against the U.S. contractor successfully established that it was at fault, or if a strict liability rule applied and all involved parties were deemed to share responsibility, and if a judgment were rendered against the U.S. contractor requiring it to pay hundreds of millions of dollars in nuclear damages, under the CTR Umbrella Agreement, Russia would then be required to indemnify the U.S. contractor for the costs of satisfying these claims.

If Russia agreed to make this payment and had the resources to do so, a rather strange situation would unfold. Given the absence of sufficient insurance or pooling arrangements for damage awards of this kind, the monies would have to come from Russian public funds. For the next decade, however, Russia is expected to need, and to receive, \$400 million in CTR assistance annually, funds that the United States deems essential to support nonproliferation and disarmament activities in Russia. In the year that Russia made the indemnity payment, how-

ever, Russia would be paying an amount to the U.S. contractor that might equal or exceed the assistance it was receiving from the U.S. government, suggesting that some or all of such assistance was being diverted to pay claims—or that Russia possessed disposable funds in the amount of the U.S. aid and thus did not need the assistance in the first place. On the other hand, if Russia refused to pay the indemnity on the grounds of sovereign immunity or on the grounds that it lacked the necessary funds, the liability provisions of the CTR Umbrella Agreement would have proved ineffective, an equally unpalatable outcome. The U.S. contractor might then invoke its indemnity agreement with the U.S. government, if it had one, and obtain financial relief through that mechanism, but the U.S. government would have little effective recourse against a Russian plea of immunity or impoverishment.

If Russia were able to obtain sufficient insurance or could participate in a pooling arrangement that would help substantially to pay off the claim, these issues could be avoided and the valuable contribution of U.S. assistance, as well as the assets of the U.S. contractor and/or the U.S. government, would be protected. At present, however, Russia appears unlikely to obtain the necessary insurance domestically; international pooling arrangements to cover the damages from Western assistance programs for civilian activities, such as the 1997 Supplementary Convention, are not yet in effect; and no such pooling arrangements exist to cover damages arising from assistance programs involving military nuclear activities.

The Russian insurance industry, it may be noted, generally seems rather sophisticated, but is lacking in capital.¹⁰⁴ One expert notes succinctly,

While nuclear liability limits of operating organizations for incidents at a nuclear facility and in transportation can be estimated as 1.2 trillion rubles (\$38 billion) and 400 billion rubles (\$12.6 billion), respectively, [in the Russian insurance market,] pool capacity may be 100 billion rubles (\$3.2 billion), at best. Insurance pool capacity will directly affect the solution of the issue on risk liability reinsurance when risks exceed the capacity.¹⁰⁵

In Russia, a nuclear liability pool has been set up consisting of ten insurance companies, including Ingostrakh, MAKS, Voenno-strakhovaya kompaniya (Military Insurance Company), ROSNO, and VESTA, with intended coverage of nuclear damage up to \$80 million.¹⁰⁶ Nevertheless, it appears that most liability of nuclear operators in Russia will need to be covered by a state guarantee. This situation raises the anomalies described in the pre-

ceding paragraph, unless new insurance or pooling arrangements can be established.

Questions of Russia's ability to indemnify claims against Western entities may also render the indemnity provisions, themselves, legally unenforceable. Given Russia's financial straits, a Western court might accept jurisdiction, find against the Western supplier, and then disregard the indemnification provisions in bilateral nuclear assistance agreements, overturning them as lacking good faith because they were the product of grossly unequal bargaining power between the United States and Russia at the time they were signed. U.S. courts, at least, consistent with *In re Union Carbide Corp. Gas Plant Disaster at Bhopal*,¹⁰⁷ and following traditional tort and contract law, are noted for deciding cases under principles of equity and fairness, against parties who have relied upon an "unfair bargaining position" to gain acceptance of one-sided contract provisions.¹⁰⁸

Although the indemnity provisions of the bilateral Western nuclear assistance agreements with Russia appear to be bulwarks protecting Western governments and their suppliers and contractors, attempts to utilize these, in practice, raise a number of serious questions and could well prove fruitless.

CONTINUING NEED FOR BILATERAL AND MULTILATERAL LIABILITY AGREEMENTS—NORWEGIAN ISSUES

Norway is a party to the Paris/Brussels Conventions and the 1988 Joint Protocol. Thus, if Russia were to ratify the Vienna Convention and enact domestic implementing legislation, and should a nuclear incident in Russia covered by the treaty cause nuclear damage in Norway, Norwegian citizens would be able to use the Vienna Convention's streamlined damage settlement procedures and financial security provisions to recover damages, up to a total of at least \$80 million. In addition, because of the convention's channeling provisions, any Norwegian suppliers and contractors involved in the incident would be protected from claims.¹⁰⁹

Russia's participation in the Vienna Convention, however, might have little actual impact on other issues of great interest to Norway, such as the potential damage to the Arctic environment from Russian nuclear submarines and their radioactive wastes. This matter is the subject of the bilateral Russia-Norway nuclear assistance agreement, the AMEC initiative, and the MNEPR negotiations. One problem would be that the Vienna Conven-

tion does not cover damages arising from nuclear incidents caused by propulsion reactors, which are excluded from the treaty's definition of "nuclear installation." Thus accidents occurring during the dismantlement, storage, or disposal of vessel reactors, including submarines, would appear not covered, and treaty provisions would not be available to protect Norwegian suppliers and contractors or to facilitate claims for damages by Norwegian citizens.

The exclusion of propulsion reactors does not extend to spent fuel or other radioactive wastes from these propulsion reactors. Roughly 75 percent of the projects under the Norwegian-Russian Agreement and AMEC deal with permanent nuclear installations and storage facilities. Thus, accidents involving materials from these "nuclear installations" would not be excluded from treaty coverage, although they originated in propulsion reactors. They might, however, be excluded under other provisions of the Vienna Convention.

These rules relate to the treatment of nuclear materials originating from the defense sector, since the treaty regime is restricted to damages arising from the "peaceful uses" of nuclear energy. The restriction clearly excludes damage caused by incidents involving nuclear weapons and weapon components under military control. It would also appear to exclude damage caused by incidents involving nuclear material within military and defense programs—for example, contamination originating from a storage facility for spent submarine nuclear reactor fuel.

It may be possible to argue, however, that the term *peaceful uses*, as used in the Vienna Convention, should be interpreted as including activities under nonproliferation, weapons elimination, and disarmament programs, such as programs to secure or eliminate nuclear weapons material being permanently removed from military uses. This interpretation might allow the treaty to apply even to material under military control, provided the material in question clearly was no longer involved in supporting military programs and there was no "dual use" of the material for defense purposes. Extension of the treaty to nuclear material transferred from military and defense programs to civilian control would seem to come within the scope of "peaceful use" even more easily, again, as long as the material was not "dual use."¹¹⁰ This interpretation could apply to much of the nuclear material in Northwest Russia, especially since supervisory control for scrapping Russia's nuclear-powered submarines and warships was transferred from the Russian Navy to Minatom in 1998, although most submarines have yet to be transferred

to that ministry.¹¹¹ All of the nuclear projects within AMEC and most of the projects governed by the Norwegian-Russian Framework Agreement would seem to fall within this category (if they satisfy the propulsion reactor exception).¹¹²

Even if the Vienna Convention were interpreted to cover most joint Norwegian-Russian nonproliferation projects, however, it is not clear that the minimum level of liability and financial security, \$80 million, would be sufficient to eliminate the need in relevant assistance agreements for provisions that placed all liability on the Russian state. New parties to the liability regime often go through a transitional period, during which they gradually build up to accepting, and insuring against, this minimal limit of liability. Should Russia accede to the Vienna Convention and 1988 Joint Protocol, for example, and be accorded this transitional option, a number of years might then pass during which its financial obligations and coverage could remain well below \$80 million. Bulgaria and Lithuania, for instance, established liability and coverage levels of \$18.7 million during their transition period. That Russia might be considered for such transitional status only underscores its inability to meet the actual damage claims from affected parties and the inherent impracticality of arrangements that place all liability for nuclear incidents upon Russia, again highlighting the need for new mechanisms to address this issue.

Were Russia and other parties to the Vienna Convention to agree upon an expansive interpretation of the definition of “peaceful uses” and to agree that reactors in disabled submarines scheduled for dismantlement were not excluded since they were no longer reactors “with which a means of sea or air transport is equipped for use as a source of power,” as required, it might better be able to address the foregoing uncertainties. If Russia passed domestic indemnity legislation that adopted these interpretations, and provided reasonable liability limits and financial security,¹¹³ most accidents that might arise from Norway’s nuclear assistance programs could be adequately addressed. Indeed, the package might be sufficiently strong to allow all Western donor states to be more flexible with respect to bilateral negotiations on liability arrangements, insofar as assistance for submarine dismantlement and related nuclear waste clean up was concerned. Under such a system, U.S. courts would also be less likely to accept jurisdiction for claims against U.S. companies for damages arising from nuclear accidents connected with nonproliferation assistance.¹¹⁴

However, until such arrangements surrounding the Vienna Convention are in place, it appears that donor governments will continue to require stringent bilateral or multilateral liability provisions in agreements with Russia in these and other areas. In addition, Western companies will probably continue to require letters of indemnity from Russia and/or their own governments. Even these measures may be insufficient for some suppliers and contractors, a state of affairs that may continue to restrict their willingness to participate in various high-liability-risk projects.

Finally, it is possible that nonlegal issues may also be playing a role in Russia’s reluctance to accept responsibility for liability arising from Western nonproliferation projects. The nuclear projects covered by AMEC—as well as many of those under CTR, and likely MNEPR—may be perceived by various Russian officials as part of a broader effort by the United States and its allies to disarm Russia in the name of nonproliferation, while at the same time the United States proceeds to develop National Missile Defense (NMD) systems with the potential eventually to neutralize Russia’s remaining strategic deterrent.

Specifically, in the summer of 1999 the United States installed the HAVE STARE (Globus II) radar in Northern Norway near the Russian border.¹¹⁵ Russia raised objections at various times, including in talks between Norwegian Foreign Minister Thorbjørn Jagland and his Russian counterpart Igor Ivanov in Moscow, which also dealt with work carried out under AMEC.¹¹⁶ Russian and U.S. officials as high as the assistant secretary level discussed HAVE STARE several times during the Clinton administration, while under the Bush administration, efforts to promote ballistic missile defense have been even more assertive,¹¹⁷ even though questions remain concerning the technical effectiveness of NMD in practice.¹¹⁸ Since many Russians believe U.S. missile defenses are an anti-Russian system, just 1 ½ years ago, U.S. missile defense policy raised the possibility of terminating the U.S. and Russian strategic arms reduction process.¹¹⁹ However, following the terrorist attacks of September 11, 2001, viewed by both Washington and Moscow as a watershed event in international relations, the dispute over the ABM Treaty was quickly resolved.¹²⁰ Washington made cuts in its nuclear arsenal Moscow had been seeking as a trade-off for U.S. withdrawal from the ABM Treaty and Russia’s acquiescence to an accelerated U.S. missile defense program.¹²¹ These negotiations ended in the Treaty of Moscow,¹²² allowing for steep nuclear arms cuts by both states.¹²³

Thus, while the security relationship between the West and Russia may not be unstable or volatile, it certainly is variable. Although it is difficult to ascertain the degree of influence security issues may have had in impeding liability negotiations conducted during the same general time period, it is certainly possible that they played a role. They may have contributed, for example, to the recalcitrance of the Russian Ministry of Defense and Minatom to settle liability issues with Norway concerning AMEC, a point the Norwegian defense attaché in Moscow may have had in mind, when he argued that the Globus II radar weakened Norwegian-Russian cooperation in security and other areas.¹²⁴ This possibility may also apply to the trilateral negotiations among the AMEC states.¹²⁵ The influence security issues play in liability negotiations under MNEPR, or in bilateral liability agreements with other Western states, is unclear, though certainly among some Russian officials a general mistrust of NATO¹²⁶ continues in spite of the recent partnership arrangement.¹²⁷

At the same time, Russia's support for the Treaty of Moscow, under which it will reduce its deployed nuclear forces to two-thirds of current levels, a significant measure of mutual disarmament would seem to at least mitigate the weight Russian officials may give to security considerations.¹²⁸ The more mundane consideration of simple exposure to financial risk may well be as paramount in motivating Russian refusal to accept Western demands for total protection from liability stemming from joint nuclear programs.

NEW APPROACHES FOR ADDRESSING ISSUES OF DONOR STATE-RUSSIAN NUCLEAR LIABILITY

The foregoing discussion has identified a number of significant flaws in Western donor state efforts to reduce liability risks from nuclear assistance programs in Russia.

Existing arrangements and those now being sought by the donor states are not likely to be effective.

- For large-scale nuclear and non-nuclear incidents with damages significantly in excess of \$1 billion, no insurance or pooling arrangements are currently available to pay victims or to indemnify donor states and their private entities facing damage judgments, and Russia appears to lack the public funds necessary to cover them. The latter point is implicit in the very fact of the Western aid programs; if Russia had funds

on this scale at its disposal, the aid programs would not be necessary.

- For smaller incidents, Russia may be able to acquire private insurance domestically up to \$80 million and, internationally, from \$150-\$300 million, at least for incidents involving non-defense-related activities.¹²⁹ For incidents above these levels and up to, perhaps, \$1 billion, public Russian funds might be made available to indemnify Western suppliers and contractors and through them, victims. This, scenario however, would create the anomalous situation that Russia would be paying donor states even as it continued to receive aid in comparable amounts from them; in effect, the donor states would be paying themselves.
- Many private Western suppliers and contractors do not believe that existing liability arrangements in donor-state nuclear assistance agreements with Russia protect them adequately. Many U.S. contractors have either insisted upon indemnification guarantees from the United States government before providing goods and services, or have limited their participation in the various nonproliferation programs.¹³⁰ Western European entities, operating under the Norwegian, EBRD, and other agreements have demanded letters from Russia confirming indemnity arrangements, as well as "comfort letters" from the relevant donors, and many have limited their activities to those with low-liability exposure, even when such reassurances have been available.
- Whether the liability provisions in all of the agreements would be enforceable in U.S., Russian, and other courts is under considerable question, especially given Russia's apparent retention of its right to assert the privilege of sovereign immunity. Russia has insisted on this right in *every* agreement outside the CTR Umbrella Agreement and its derivatives, a defense, it should be recalled, that might be asserted not only by Minatom or other elements of the Russian government, but also by entities wholly owned by them. Although the provision desired by Russia in non-CTR-type agreements reserving the right to assert the defense of sovereign immunity is lacking in the CTR Umbrella Agreement, that agreement also lacks an explicit undertaking that Russia will not assert the sovereign immunity privilege. Russia's unvarying insistence on protecting this defense to indemnification in other contexts since 1992 leaves little doubt that it will attempt to raise this barrier to indemnification should an incident arise causing sig-

nificant damages under the CTR Umbrella Agreement and the derivative U.S.-Russia agreements that incorporate its liability provision. The role of the UNCITRAL Arbitration Rules, for those agreements containing this position, remains to be seen.

The approach to liability taken by the Western donor states in their nuclear assistance agreements with Russia is inconsistent with that supported by these same states in other settings, such as the Paris/Brussels Convention (and the pending Paris Amendment), the 1997 Supplementary Convention, and the KEDO-DPRK Agreement.

- The emerging consensus in the recent negotiations of modifications to the international conventions is that liability for nuclear damage can be expected to reach many hundreds of millions of dollars, or more (and must take the possibility of nuclear terrorism into account); that individual states cannot be expected to provide financial security for the entire amount; and that pooling arrangements with other similarly situated states are necessary to cover much of these costs. The Western nuclear assistance agreements with Russia make no provision for pooling or other internationalized measures to defray the cost of large-scale liability.
- The KEDO-DPRK Agreement provided not only for North Korea to accept full liability for nuclear damages from joint activities with the KEDO partners and their private entities, but also required North Korea to provide financial security for these potential costs through the acquisition of insurance or other means. It also anticipated that donor countries and third countries would be part of a pooling arrangement to compensate claims from catastrophic incidents. The Western nuclear assistance agreements with Russia contain no specific requirement for Russia to obtain insurance or to take other measures to ensure the availability of funds to meet future damage/indemnity claims, nor are pooling arrangements contemplated. (These demands for North Korea or Russia to obtain insurance or other coverage would, of course, have to be adapted to their circumstances in order to provide genuine financial security.)

The insistence of the Western donor states on Russia accepting liability unconditionally has stymied new bilateral and multilateral nuclear assistance programs, further suggesting that existing approaches are not workable.

Given the deadlock over liability provisions and the flaws in existing approaches, new tools are needed to address this challenge. The main goals are to attempt to provide increased security to the West, including Norway; ease pressure on Russia state resources; and increase nuclear safety and security measures, including the predictability of compensation for victims. A successful approach would also ease Russian apprehensions related to liability agreements, encourage growth in Russian insurance markets, and encourage growth of capital in Russia for providing state compensation. Admittedly, questions may be raised as to whether financial concepts may be readily transferred from the West, with its large and sophisticated financial markets, to Russia with its fledgling democracy and market system. Nevertheless, creativity appears needed here, and measures that may ease the difficulties for Russia to provide genuine liability coverage, in relation to both Western states and Russia, itself, are very much worth investigating.¹³¹

As suggested throughout this article, a carefully crafted insurance plan to cover nuclear damage from Western assistance programs would go far toward addressing many of the challenges noted. With a reliable, generous insurance arrangement, for example, all parties could have greater confidence that claims would be paid and that financial burdens would be manageable. Russia would likely be more comfortable providing airtight indemnity guarantees, and Western donor states and private entities would likely take greater comfort from such guarantees than is the case today.

Two insurance alternatives will be suggested here: a retrospective payment pool and catastrophic nuclear incident insurance bonds. They borrow concepts from other arrangements now in use, but would be free-standing, although they could be crafted as complements to the Vienna Convention, covering risks and offering protection levels beyond those provided by that treaty, should Russia choose to accede.

In negotiating future nuclear assistance agreements, Western states would adopt the approach followed in the KEDO agreement and insist upon provisions in which Russia not only agreed to accept liability but also to establish insurance arrangements of this general kind. The flow of assistance under the relevant agreement would be contingent upon confirmation that Russia had fulfilled this insurance requirement. In addition, importantly, the Western states could include financial support for a portion of the necessary insurance premiums in their aid packages for Russian nuclear assistance, in effect treating this

support as a “cost of doing business” or as one more component of needed aid.

Both insurance schemes would cover risks from peaceful *and* military activities; would explicitly cover risks from terrorism; and would apply not only to work conducted in the context of assistance programs, but to *all* nuclear and CBW incidents in Russia leading to significant damage. Both insurance schemes would also adopt the tiered approach seen in the majority of national laws and in the system of international nuclear liability conventions. For the purposes of discussion here, the first tier in both schemes might be set at \$400 million, the level used in the 1997 Supplementary Convention and the 1997 Vienna Protocol. The insurance industry in the West is generally unwilling to insure third-party liability for nuclear damage in excess of a few hundred million dollars in the most optimum case, because of the size of its market.¹³² However, when states such as Germany, Switzerland, and Japan have increased or removed the limits on nuclear liability, insurance capacity appears to have responded with increased coverage up to this maximal level, a few hundred million dollars, which is generally 10 to 50 times as large as coverage for those states with limited liability, although the advanced technical status of these Western states may also have been a factor enabling higher insurance levels.¹³³ A first tier of insurance coverage of several hundred million dollars, it should be noted, would likely be sufficient to cover damage claims from many cooperative nonproliferation programs—for example, from an accident involving the dismantlement of Russian naval reactors, the storage of fuel from such reactors, or possible liability arising from job creation programs under the Nuclear Cities Initiative Agreement.

Russia would assume responsibility for the first tier of insurance, purchasing the maximum amount available on the private market and pledging to make up the rest of the first tier of coverage from public monies. If necessary, this level of coverage could be phased in gradually, as under the 1997 Supplementary Convention. The second tier might be set at \$400 million, the 1997 Supplementary Convention level; at 1.5 billion euros, the new combined limits for the Paris/Brussels Convention; or at some other level. But here, as in those instruments, it would be recognized that meeting the higher level of payment should be a multination responsibility, not solely that of Russia. Although other contributors would not, strictly speaking, be in situations that paralleled Russia’s, as is the case in the other multination insurance arrangements, these other contributors share with Russia the desire for

the success of the collaborative nonproliferation and environmental assistance programs, whether to secure nuclear material, enhance nuclear power plant safety, eliminate chemical weapons, or serve other mutually beneficial ends. In effect, all players would be agreeing that in order to advance a common cause, the high-end risks would be shared.

Retrospective Payment Pool

The first option would be to establish a pooling arrangement in which donor states would agree to make retrospective payments to cover, collectively, damages from a catastrophic incident arising from joint nuclear, or other, activities. The level of retrospective payment could be set according to a formula, perhaps related to the level of a state’s assistance and/or to their physical proximity to Russia, with closer states paying a higher “insurance premium” because of the likelihood of their suffering greater damages from a nuclear or other WMD incident. The states represented at the Kananaskis Summit—the G8 plus the EU—might comprise the members of the pool, along with Norway and a handful of additional donor states, 20 to 30 states, in all, as the EU expands. This scheme would provide for an average retrospective payment of \$3.3 to \$5 million per \$100 million in paid damage claims, above the first tier coverage provided by Russia. In the United States, similar pools, with contributions by reactor operators, can bring damage payments up to \$9.5 billion, under the Price-Anderson Act.

Although the non-Russian contributing states might, in the end, pay themselves for liabilities that should be Russia’s, the reality is that these states would be insuring themselves against liabilities that Russia could not meet. This burden would be shouldered in order to permit critically important work in the area of nonproliferation and environmental protection to progress smoothly. The insurance scheme, moreover, would also protect donor states against nuclear damage risks from Russia unrelated to assistance programs, providing additional value. In effect, as suggested, the insurance would, itself, amount to a new assistance program, covering a critically important lacuna that Russia cannot manage on its own.

Finally, it might be possible to formalize this arrangement in a specialized multilateral assistance agreement and accompanying domestic legislation within the participating countries. This strategy might avoid the need for more cumbersome treaty ratification processes. Although the nontreaty approach might not legally restrict the jurisdictions where private parties could

attempt to bring lawsuits for damages, the availability of the pool insurance could be restricted to plaintiffs who used the process outlined in the assistance agreement and related legislation, a powerful incentive for future litigants to follow this path.

Catastrophic WMD Incident Insurance Bonds

The second approach to insuring the high-end risk would be to transfer these risks to the international financial markets through reliance on new financial instruments.¹³⁴ Although this option is being investigated in the United States and by the OECD, relevant variations might also be considered for Russia, in spite of its state ownership of WMD installations, its rather precarious economic and political situation, and such problems as corruption. At the same time, since prospects are increasing for economic growth and political stability in Russia, the conditions for introducing new measures have probably not been better since the demise of the Soviet Union.

Specifically, the idea envisions transferring the top risks to hedge funds, pension funds, and other institutions that manage diversified capital portfolios. These institutions might be not only Russian but also international, if an interest can be shown generally for attempting these measures in spite of Russian conditions. Including international institutions would spread the risk at a time of increased economic integration with the West. These institutions handle capital on a larger scale than insurers and hence are better able to absorb the risks. The capital and surplus of insurers and re-insurers of property and casualty in the United States have been assessed at \$230 billion, while the U.S. capital market is 60 to 80 times larger, representing a total value of \$15 trillion to \$20 trillion. The OECD area as a whole is about twice as large, although its exact extent has not been assessed. The size of the Russian capital market is unknown to the authors.

Using the calculation for the OECD area as an example, how might it be possible to manage and permanently maintain \$1 billion to \$100 billion on standby for compensation of damages from a possible disaster involving nuclear or other instrumentalities? For Russia, significantly lower amounts of funds might be necessary to ensure sufficient coverage for damage from accidents not involving nuclear power stations or similarly dangerous chemical or biological weapons facilities. The top amount, it may be noted, corresponds to more than 20 percent of the total capital of the global insurance industry, and setting aside such an amount would place a substantial strain

on that industry. On the *capital* market, however, such security equates to approximately 0.3 percent of total assets, which would hardly impose a strain at all. The arrangements might include a catastrophic WMD incident bond, with the principal to be forfeited as necessary for damage compensation if a nuclear or other WMD catastrophe occurs with costs above the first tier of coverage, or perhaps at a higher level, such as \$9.5 billion. As seen, this figure is the level for which insurance and risk pooling arrangements could likely provide.

For nuclear incidents, the issuer might be a group of insurers of nuclear operations, a pool of nuclear operators, or a dedicated intergovernmental institution. The money raised through the issue of the catastrophic WMD incident bond could be placed in government bonds, with the annual difference between interest paid the bondholders of the catastrophic incident bond and that received from the government bonds, paid by the Western donor states as a surcharge to their aid programs. For each percentage point of annual interest above the normal government bond rate, the costs would be \$10 million per billion dollars of bonds issued. Divided among 20 countries, the average charge would be \$500,000 annually for each percentage point required per \$1 billion in bonds. Were the United States to pay the entire differential cost for the first \$1 billion in bonds, it would pay out only a tiny fraction—one percent—of the \$1 billion in aid that it provides Russia annually, for each percentage point required above the government bond rate. With the capital invested in low-risk assets, the only risk carried by the catastrophic incident bondholder would be the damage claims following a large nuclear or other disaster that exceeded other tiers of coverage.

Problems with this concept include that if the amounts of coverage for WMD damage available through insurance or reinsurance are currently limited, this may be because investors are reluctant to become involved. If this is the case, it may be questioned whether investors would invest in nuclear catastrophe bonds, or bonds protecting against other WMD catastrophes, except at extremely high premiums. Additionally, while the idea may be feasible in the civilian nuclear sector, it may not be applicable in the military nuclear or CBW sectors, where states generally assume all liability. The state is generally considered large enough to self-insure and the use or non-use of commercial components may not be directly appropriate. However, even if international finance mar-

kets are unable or unwilling to provide coverage for the defense sector, better liability coverage for civilian nuclear operations would reduce the overall burden currently borne by Russia, thus also improving its ability to cover risks for catastrophic incidents arising from cooperative activities outside of the civil nuclear power sector.

Either of these approaches would go far to resolve the current impasse over liability.

- Adequate funds would be available to compensate victims and to indemnify private Western suppliers and contractors, providing confidence to the latter group, which will encourage greater participation in nuclear and other high-risk assistance programs.
- Provisions of aid agreements that placed liability solely on Russia would appear fairer in the context of a broader insurance arrangement and would be more likely to withstand legal challenge, because multiple parties were agreeing to share the burden of large-scale payouts.
- The approach would be consistent with those that Western donor governments are pursuing in other contexts.
- The availability of funds and the sharing of compensation for catastrophic incidents would provide Russia confidence that it could meet the indemnity demands of the donor states without suffering ruinous economic losses.

CONCLUSION

It should be recalled that the underlying purpose of Western nuclear aid to Russia is to stave off catastrophic damages from nuclear and other weapons of mass destruction. To date, the donor states have concentrated on practical programs to reduce dangers from various elements of Russian nuclear and other high-risk WMD activities. Such risk reduction efforts are widely recognized as valuable—indeed, critical—to international security and well-being.

There is, however, a second method for reducing risk, and that is to *share* it. This method is fully appreciated in the international civil nuclear community, where a range of risk-sharing arrangements are in place or unfolding. The approach of risk-sharing needs to be adapted to the unique circumstances of Western nonproliferation assistance programs to Russia. In this setting, risk-sharing will not only reduce the impact of a nuclear or other WMD calamity on individual actors, but will also facilitate the expansion

of the practical risk reduction programs, easing the impasse over liability and encouraging wider participation by Western enterprises.

¹ “Nuclear damage” has been given a number of meanings in domestic law and various international conventions. For the purposes of this article, it will be given the expansive interpretation found in the “Convention on Supplementary Compensation for Nuclear Damage,” *International Legal Materials* 36 (September 1997), (hereinafter, **1997 Supplementary Convention**), p. 1473. This interpretation, not in force, includes damage caused by ionizing radiation to the environment, the costs of preventive or mitigating measures, and economic loss, in addition to the more traditional costs from death, personal injury, and property destruction. A similar definition, also not in force, is used in the “1997 Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage,” with annex, *International Legal Materials* 36 (September, 1997), p. 1462, (hereinafter, **1997 Vienna Protocol**).

² Marcus Radetzki, “Limitation of Third Party Nuclear Liability: Causes, Implications and Future Possibilities,” *Nuclear Law Bulletin* No. 63 (June, 1999), p. 11. This estimate was calculated for the area covered by the OECD, but provides a rough idea of potential costs in other settings. The statistical probability of a core meltdown followed by lethal radioactive releases (within the OECD, where about 350 reactors are operating) was calculated to be one in 350 to 6000 years, with potential damage costs from less than \$1 billion to more than tens of billions of dollars, reaching \$100 billion in very exceptional cases (one in more than a million years). It may be noted that the Soviet Union never paid any compensation to victims of the Chernobyl accident outside of that country.

³ See, “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,” June 17, 1992, as amended by the Protocol of June 15-16, 1999. The original is found at *Treaty and Other International Acts Series (TIAS)* No. 7025.000 (hereinafter, **1992 Cooperative Threat Reduction [CTR] Umbrella Agreement**). The 1999 Protocol was obtained from the Bureau of Non-Proliferation, Office of the Senior Co-coordinator of Nuclear Safety, U.S. State Department, Washington D.C. The text of the agreement’s liability provision is as follows:

ARTICLE VII

1. The 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.

2. Claims by third parties arising out of 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.

3. The provisions of this Article shall not prevent the parties from providing compensation in accordance with their national laws.

4. The Parties shall consult, as appropriate, on claims and proceedings under this article.

5. Nothing in this Article shall be construed to prevent legal proceedings or claims against nationals of the Russian Federation or permanent residents of the Russian Federation.

For a review of liability provisions in the 1992 CTR Umbrella Agreement, see Jack M. Beard, “Recent Development: A New Legal Regime for Bilateral Assistance Programs: International Agreements Governing the ‘Nunn-Lugar’ Demilitarization Program in the Former Soviet Union,” *Virginia Journal of International Law* 35 (Summer 1995), p. 894.

⁴ Negotiations on the December 1993 “Agreement Between the Government of the United States of America and the Government of the Russian Federation Concerning Operational Safety Enhancements, Risk Reduction Measures and

Nuclear Safety Regulation for Civil Nuclear Facilities in the Russian Federation," *Nuclear Safety Related Cooperation Agreements Concluded with the Federation of Russia and with Ukraine*, 2nd ed. (Issy-les-Moulineaux: AEN/NEA OECD, March 2001), p. 15, (hereinafter, **1993 International Nuclear Safety Program Agreement**), resulted in the following compromise language regarding liability: Article IV

1. With 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 arising from activities undertaken pursuant to this Agreement against the Government of the United States of America and its personnel or its contractors, subcontractors, consultants, suppliers or sub-suppliers of equipment or services at any tier and their personnel, for indirect, direct or consequential damage 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 is a party.

2. With 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, indemnify, and shall bring no claims against, the Government of the United States of America and its personnel and its contractors, subcontractors, 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 arising from activities undertaken pursuant to this Agreement for injury or 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. 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.

3. The Parties may, as necessary, conduct consultations regarding claims and legal proceedings concerning this Article.

4. The provisions of this article shall not prevent the Parties from providing compensation in accordance with their national laws.

5. Nothing in this article shall be interpreted to prevent legal proceedings or claims against nationals of the Russian Federation or permanent residents of the Russian Federation.

6. The Government of the United States of America shall strive to ensure delivery of equipment and services of high quality and their performance in accordance with mutually acceptable specifications. The Government of the Russian Federation shall accept final delivery after determining conformity with mutually acceptable specifications.

7. The obligations undertaken by the Government of the Russian Federation pursuant to this Article relating to nuclear power reactors it owns at the time this Agreement enters into force shall remain in effect regardless of any subsequent transfer of ownership of those reactors, and, pursuant to Article VI, shall remain in effect notwithstanding the termination or expiration of this Agreement.

In this agreement, CTR Umbrella Agreement liability provisions are generally incorporated, with several important exceptions: Russia does not accept liability for nuclear damages in cases where individuals are sued for injuries arising from their "premeditated actions"; Russia's indemnity obligations for third-party claims apply only to damages arising from a "nuclear incident occurring within the territory of the Russian Federation"; the agreement cannot be construed as "waiving sovereign immunity"; the term "hold harmless" is dropped; the requirement that Russia "provide for the adequate defense" of U.S. personnel is substituted; and, with respect to third-party claims, the article states that it does not amount to an acknowledgement of the jurisdiction of any court.

See also, U.S. Department of Energy, "Agreement Between the Government of the United States of America and the Government of the Russian Federation on the Nuclear Cities Initiative," September 22, 1998, (copy obtained from the U.S. Department of Energy), (hereinafter **1998 Nuclear Cities Initiative Agreement**). Article 8 contains liability provisions largely identical to those of the International Nuclear Safety Agreement, except that Russian undertakings apply to any injury or damage arising from activities under the agreement, not only to those arising from nuclear incidents on the territory of Russia. (The Nuclear Cities Initiative is a program designed to facilitate the consolidation of the Russian nuclear weapons complex, by creating nondefense employment opportunities in three Russian cities that are currently dependent on nuclear-weapons-related work: Sarov, Snezhinsk, and Zheleznogorsk.)

A third U.S.-Russia agreement with compromise provisions on liability that departs from those in the CTR Umbrella Agreement is the "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," July 24, 1998, (hereinafter, **1998 Plutonium S&T Agreement**), <<http://www.usembassy.ro/.../500/98-07-24/eur518.htm>>. The agreement established a framework for the United States and Russia to examine approaches to the disposition of excess weapons plutonium in both countries so as to make the material unsuitable for nuclear weapons.

A somewhat different compromise approach was adopted in the "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 Co-operation—Annex on Assistance," September 2, 2000, (hereinafter, **2000 Plutonium Agreement**), <<http://www.nti.org/db/nisprofs/russia/fulltext/plutdisp/pudisptf.pdf>>. Under the 2000 Plutonium Agreement (Section II.1) liability arrangements are to be contained in a separate protocol on which negotiations continue.

Finally, a compromise more favorable to the United States was struck in the case of the "Agreement between the Government of the United States of America and the Government of the Russian Federation Regarding Cooperation in the Area of Nuclear Material Physical Protection, Control and Accounting," October 2, 1999, (hereinafter, **1999 MPC&A Agreement**), <http://www.nti.org/db/nisprofs/russia/fulltext/doe_mpc/doe1999/mpcatext.htm>. Here, after initial negotiations broke down over liability and certain other issues, a compromise was reached to make the MPC&A Agreement subsidiary to the CTR Umbrella Agreement and to employ the liability provisions in that accord, on the grounds that the activities covered by the agreement had originated as part of the CTR program. The same approach was adopted in the Agreement between the Government of the United States and the Government of the Russian Federation on the Elimination of Weapons-Grade Plutonium Production, March 12, 2003 (**2003 Elimination of Plutonium Production Agreement**), which also was brought under the CTR Umbrella Agreement.

See also the "Declaration on Arctic Military Environmental Co-operation between Russia, the United States of America, and Norway" (AMEC), April 7, 1997; copy obtained from the Norwegian Ministry of Defense, under which Norway required long negotiations over liability issues to bring its projects within the Agreement between the Government of the Kingdom of Norway and the Government of the Russian Federation on Environmental Cooperation in Connection with the Dismantling of Russian Nuclear Powered Submarines Withdrawn from the Navy's Service in the Northern Region, and the Enhancement of Nuclear and Radiation Safety. *Overenskomst med Fremmede Stater*, No. 7 (May 1998), p. 568-82. (hereinafter, **1998 Norwegian-Russian Agreement**). This contains similar exclusions as the International Nuclear Safety Program Agreement.

⁵ See note 4.

⁶ U.S. Department of State Factsheet, "G8 Chair Cites Accomplishments of Kananaskis Summit," June 27, 2002, <<http://www.g8.gc.ca/kananaskis/globpart-en.asp>>.

⁷ "Statement by G8 Leaders—The G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction," Kananaskis, June 27, 2002, G8 Information Center, <http://www.g8.gc.ca/2002Kananaskis/kananaskis/gp_stat-en.pdf>.

⁸ "Assistant Secretary of State for Nonproliferation John Wolf Provides Details on G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction," interview by Leonard Spector, Center for Nonproliferation Studies, Research Story of the Week, <<http://www.cns.mis.edu/>>.

⁹ Ibid.

¹⁰ The authors have not previously observed such "lopsided" agreements, internationally or domestically.

¹¹ See Figure 1. For an overview of the terms in existing Western agreements with Russia governing liability for nuclear damage, including those agreements listed below, see the section entitled, "Liability Provisions in Russia's Bilateral Nonproliferation Assistance Agreements with Western States," herein.

¹² See <<http://osiris.cso.uiuc.edu/denix/Public/Intl/AMEC/amec.html>>. According to the AMEC Declaration, nuclear projects include the following, and Projects 1.1. and 1.2. were completed while Projects 1.3., 1.4., and 1.5. were to be completed before September 30, 2002.

Naval spent nuclear fuel management

Project 1.1 Development of a prototype container and storage pad for interim storage and transport of naval spent nuclear fuel.

Naval liquid radioactive waste treatment

Project 1.2 Development of mobile technology for treatment at remote sites of liquid radioactive waste associated with Nuclear Submarine decommissioning.

Solid radioactive waste volume reduction

Project 1.3 Review and implementation of technology for solid radioactive waste volume reduction.

Solid radioactive waste storage

Project 1.4 Advanced Interim Solid Radioactive Waste Storage Technologies. Radiation monitoring, and personnel and environmental safety

Project 1.5 Co-operation in Radiation Monitoring and Environmental Safety See Steven Sawhill and Anne Kristin Jørgensen, *Military Nuclear Waste and International Co-operation in Northwest Russia*, (Military Nuclear Waste), Fridtjof Nansen Institute Report, December 2001, pp. 23-28 and 30-35 for the above information obtained from the U.S. Department of Defense, and complete descriptions of CTR and AMEC, respectively.

¹³ See note 3. The CTR Umbrella Agreement provides the legal basis for the implementation of the Cooperative Threat Reduction program in Russia, sometimes referred to as the Nunn-Lugar Program, after its principal sponsors in the United States Senate. See U.S. Department of Defense, Office of Environmental Security, *Program Plan and Proposed Obligations for the Arctic Military Environmental Co-operation Program FY1999*, Washington, D.C. The Co-operative Threat Reduction Act of 1993, U.S. Code, vol. 22, sec. 5951 (1993). The CTR is the U.S. legislation regarding U.S. funding for Russia to carry out its disarmament obligations under the Treaty between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms, July 31, 1991, *United Nations Disarmament Yearbook*, Vol. 16, (New York: Office for Disarmament Affairs, 1992), Appendix II, (START I), pp. 450-476. See Sawhill and Jørgensen, *Military Nuclear Waste*, pp. 41-43.

¹⁴ See Sawhill and Jørgensen, *Military Nuclear Waste*, pp. 36-41, for a listing and description of projects under the Norwegian-Russian Framework Agreement, funded by the Norwegian Plan of Action for Nuclear Safety, obtained from the Norwegian Ministry of Foreign Affairs.

¹⁵ Kjell Dragnes, "Atom-samarbeid i stampe, [Nuclear Cooperation Stuck]," *Aftenposten*, April 9, 2000, p. 7, notes additionally that taxes and fees on grants, lack of privileges and immunities for state personnel and Norwegian contractors' personnel, and lack of control and inspection of the Norwegian projects have been problems. (Translation of Norwegian literature is by Douglas Brubaker.) Geir Hønneland and Arild Moe, "Mislykket atomsamarbeid? [Unsuccessful Nuclear Cooperation?]," *Aftenposten*, March 8, 2001, p. 22, makes the same point, but notes that rather than following usual Norwegian principles in carrying out projects, a goal may be flexibility so as not to injure Russian pride. The principles include project quality control, clear division of roles governing project funding and project execution, and clear program objectives supporting interrelated projects. Ambassador Torbjørn Norendal, Norwegian Ministry of Foreign Affairs, interview by Douglas Brubaker and Steven Sawhill, Oslo, November 29, 2000, states these issues to have been solved in relation to Norwegian projects.

¹⁶ Ambassador Torbjørn Norendal, interview by Douglas Brubaker and Steven Sawhill, Oslo, November 29, 2000.

¹⁷ Captain Dieter Rudolph, U.S.N., Ret., AMEC Program Director, U.S. Department of Defense, interview by Steven Sawhill, Oslo, May 11, 2000. The intent is to reach an agreement that covers both AMEC and other trilateral cooperation, that is not limited to strategic security as under the 1992 CTR Umbrella Agreement, and that is more flexible than the project-specific approach taken by the Norwegian-Russian Agreement.

¹⁸ Thomas Nilsen, "AMEC survives despite lack of liability agreement," July 2, 2002, <<http://www.bellona.no/en/international/russia/navy/co-operation/24815.html>>.

¹⁹ Ibid., citing a letter from Deputy Secretary of State Armitage to Senator Lugar, June 26, 2002. Ambassador Torbjørn Norendal, interview by Douglas Brubaker and Jildou Dorenbos, Oslo, December 17, 2001, indicated an unofficial draft for a new AMEC declaration had been prepared at that time and had been distributed. Ibid. also indicated the United Kingdom might be interested in channeling its £8 million commitment to nuclear safety in Northwest Russia through AMEC. Ambassador Torbjørn Norendal, email correspondence with Douglas Brubaker,

Oslo, July 10, 2002, indicated a unified draft Article encompassing issues of liability, as well as access, taxation, importation and personnel status, was delivered by the Norwegian Ministry of Foreign Affairs and the U.S. State Department to the Russian Foreign Ministry in February 2002. This was not accepted. However, the Russian side indicated new negotiations would be possible, and both the Norwegian Ministry of Foreign Affairs and the U.S. State Department initiated negotiations August 2002 in Oslo.

²⁰ The principal focus of MNEPR is a series of largely civilian projects to improve management of spent nuclear fuel and radioactive waste, including material originating from the Russian defense sector, but now under civilian control. The draft AMEC agreement, on the other hand, anticipated that the program would concentrate on military projects, but the distinction between the two is viewed as rather flexible. Ambassador Torbjørn Norendal, interview by Douglas Brubaker and Jildou Dorenbos, Oslo, December 17, 2001. Within Russia, civilian projects are administrated by the Ministry of Atomic Energy and military projects by the Ministry of Defense. Ambassador Torbjørn Norendal, email correspondence with Douglas Brubaker, Oslo, July 10, 2002, indicated that on July 9, 2002, the Northern Dimension Environmental Partnership Support Fund (NDEP) was established, in association with MNEPR, to finance nuclear cleanup and general environmental projects in Northwest Russia. The EU will contribute 50 million euros (US\$55.3 million), while Denmark, Finland, Netherlands, Norway, Russia, and Sweden will contribute 10 million euros (US\$11.1 million) each. Of the 110 million euros (US\$121.7 million), 62 million euros (US\$68.6 million) will be channeled to nuclear cleanup. Ariane Sains, "Nordic-Russian Arctic Clean-Up Pact Nears Final Hurdle at Last," *Nucleonics Week*, January 23, 2003, p. 12, notes MNEPR will pave the way for \$20 billion over ten years to be provided from the G8 Global Partnership Fund—half from the United States—to deal with cleanup, decommissioning nuclear weapons, and related projects. However, the sponsors have required that MNEPR and other assistance agreements be ratified prior to any transfer of funds. See "Assistant Secretary of State for Nonproliferation John Wolf Provides Details on G-8 Global Partnership," interview by Leonard Spector.

²¹ "Declaration of Principles Regarding a Multilateral Nuclear Environmental Program (MNEPR) in the Russian Federation," March 5, 1999, *Nuclear Law Bulletin* No. 63 (June 1999), pp. 95-96, (hereinafter, **1999 MNEPR Declaration**). This declaration was signed by Denmark, Finland, France, Germany, Iceland, Italy, Norway, Russia, Sweden, the Netherlands, the United Kingdom, and the United States. Ambassador Torbjørn Norendal, interview by Douglas Brubaker and Jildou Dorenbos, Oslo, December 17, 2001, notes that in June 2001 the parties broke MNEPR negotiations because of disagreement on issues of liability as well as taxation, revolving around the term "hold harmless and indemnify." Russia proposed trading its proposal regarding liability in exchange for the West's proposal concerning taxation. By December 2001 the West had deleted "hold harmless," and the proposal was sent for the second time to the Russian Prime Minister's Administration for acceptance, which was expected. Ole Reistad, Adviser, Norwegian State Radiation Bureau, Oslo, correspondence with Fridtjof Nansen Institute, August 23, 2001, notes that the liability issue in June 2001 was to be moved to a separate protocol, making it possible for all states to reach an understanding on the main issues, while allowing the United States stricter liability coverage under separate agreements, probably similar to the CTR Umbrella Agreement and the 1999 Protocol. In April 2002, unexpectedly, in unrelated negotiations, the leader of the Russian team delivered a new proposal related to taxation issues. Since this was the Western part of the trade proposal, such new formulations were found unacceptable; the final negotiations in May 2002 were cancelled, and the planned ratification ceremony in Sweden postponed. Ambassador Torbjørn Norendal, email correspondence with Douglas Brubaker, Oslo, July 10, 2002.

²² Sains, "Nordic-Russian Arctic Clean-Up," p. 12, notes agreement was reached on the MNEPR over January 11-12, 2003, in Kirkenes, Norway. Ambassador Torbjørn Norendal, email correspondence with Douglas Brubaker, Oslo, July 10, 2002, noted Russia is under considerable pressure to compromise on the issue of taxation of assistance under the MNEPR because of the linkage of this agreement to the G-8 Global Partnership and NDEP, where additional assistance is at issue. Ambassador Torbjørn Norendal, telephone interview with Douglas Brubaker, Oslo, March 11, 2003, noted additionally, in the February 26 and 27, 2003, negotiations on the MNEPR, U.S. Under Secretary of State John Bolton proposed a liability approach similar to that of the 1992 CTR Umbrella Agreement, but this was rejected by all other MNEPR parties. In April 2003, agreement was reached that the non-U.S. participants would address liability issues through the protocol,

which now deviated from the approach of the CTR Umbrella Agreement, while any United States activities would be pursued under the CTR Umbrella Agreement, with its more stringent liability terms. U.S. State Department official (name withheld on request), interview by Leonard Spector, Washington, D.C., April 16, 2003. The principal differences between the MNEPR Liability Protocol and the CTR Umbrella Agreement are discussed in the text, below.

²³ Bruce Blair, "Nukes: A Lesson from Russia," *Washington Post*, July 11, 2001, p. A19; Sam Costello, "U.S. Nuclear Tracking Software Had Glitch," *InfoWorld Daily News*, July 24, 2001, <<http://www.nwfusion.com/news/2001/0724nuclear.html>>.

²⁴ See section herein, Specialized Laws and International Conventions Governing Liability for Nuclear Damages from Civilian Nuclear Activities.

²⁵ For additional information on Rosenergoatom, see <<http://www.rosatom.ru/english/concern/index.html>> and on TVEL, see <<http://www.tvel.ru/index.html>>.

²⁶ Even donor-state suppliers, which may be able to immunize themselves from liability today through letters of indemnification, might find it easier to obtain such protections if those providing such indemnifications had confidence that an effective insurance arrangement were available to cover such indemnified claims.

²⁷ See Box 1 for national legislative requirements with respect to liability amounts for parties to the Paris Convention.

²⁸ See section herein, Specialized Laws and International Conventions Governing Liability for Nuclear Damages from Civilian Nuclear Activities.

²⁹ See "A lawsuit against the Russian Federation...", *FreshFUEL*, May 8, 2000, p. 1 in Uranium Institute News Briefing, May 9-16, 2000, <<http://www.world-nuclear.org/nb/nb00/nb0020.htm>>; Nuclear Threat Initiative, NIS Profiles Database, entries for June 6, 2000, June 23, 2000, and July 7, 2000, <<http://www.nti.org/db/nisprofs/russia/fissmat/heudeal/heudev.htm>>.

³⁰ Phoebe Okowa, *State Responsibility for Transboundary Air Pollution in International Law* (Oxford: Oxford University Press, 2000), pp. 65 and 99-130. This doctoral work was carried out under the supervision of Ian Brownlie, a renowned international jurist and may indicate a change of view favoring the development of a customary norm of strict liability. See Ian Brownlie, *Principles of Public International Law*, 5th ed. (Oxford, Clarendon Press, 1998), p. 478, and Ian Brownlie, *Principles of Public International Law*, 4th ed. (Oxford, Clarendon Press, 1990), p. 433.

³¹ Legal and nonlegal issues possibly hindering negotiations surrounding liability are planned to be investigated more thoroughly by author Douglas Brubaker, and will also include the related issues of taxes, fees, privileges, immunities, control, and inspection.

³² See Tom vanden Borre, "Channeling of Liability: A Few Juridical and Economic Views on an Inadequate Legal Construction," in Nathalie L.J.T. Horbach, ed., *Contemporary Developments in Nuclear Energy Law—Harmonizing Legislation in CEEC/NIS* (The Hague: Kluwer Law, 1999), pp. 17-21. The advantages and disadvantages of the specialized approach to nuclear liability, in comparison to traditional tort remedies, are further examined in Box 2.

³³ Patrick Reyners, "Modernization of the Civil Liability Regime for Nuclear Damage: Amendment of the Vienna Convention and Adoption of the New Convention on Supplementary Compensation for Nuclear Damage," *Advanced Training Seminar on Nuclear Law: Compendium, Tallinn, 24-8 August 1998* (Paris, OECD, Nuclear Energy Agency (NEA), 1998), p. 8, notes that the principle of nondiscrimination was modified by an amendment to the Vienna Convention. It is now possible to refuse victims' requests for compensation where the compensation comes from public funds, above SDR 150 million (U.S.\$200 million), or where the damage is suffered in the territory of a nuclear state that does not give reciprocal benefits to the installation state.

³⁴ Omer F. Brown II, "Nuclear Liability: A Continuing Impediment to Nuclear Commerce," paper delivered to the Twenty-Fourth Annual International Symposium of the Uranium Institute, London, September 9-10, 1999, <<http://www.world-nuclear.org/sym/1999/brown.htm>>.

³⁵ The Act was initially passed as an amendment to the Atomic Energy Act. The body of the Act appears in 42 U.S.C. §2210 (Indemnification and Limitation on Liability) with relevant definitions appearing at 42 U.S.C. §2014 (Definitions). The most recent amendments, the 1998 Amendments, appear at Pub. L. No. 100-408, 102 Stat. 1067.

³⁶ See Brown II, "Nuclear Liability." See also Ben McRae, Assistant General Counsel, U.S. Department of Energy, "Recent Developments: New Legislation

and Adherence to Conventions (USA)," paper delivered to Budapest Symposium, sponsored by OECD/NEA Legal Affairs, in cooperation with the IAEA and the European Commission, Budapest, May 31-June 3, 1999, p. 539, and vanden Borre, "Channeling of Liability," pp. 21 and 27.

³⁷ vanden Borre, "Channeling of Liability," p. 27.

³⁸ "Vienna Convention on Civil Liability for Nuclear Damage," May 21, 1963, *Treaties and International Agreements Registered or Filed or Reported with the Secretariat of the United Nations*, 1063, no. 16197 (1977): 265. [hereinafter, **Vienna Convention**]. The 33 Parties as of March 2003, are: Argentina, Armenia, Belarus, Bolivia, Bosnia and Herzegovina, Brazil, Bulgaria, Cameroon, Chile, Croatia, Cuba, Czech Republic, Egypt, Estonia, Hungary, Latvia, Lebanon, Lithuania, Mexico, Niger, Peru, Philippines, Poland, Republic of Moldova, Romania, Slovakia, Slovenia (withdrew December 11, 2002), The Fmr. Yug. Rep. of Macedonia, Trinidad and Tobago, Ukraine, Uruguay, Yugoslavia; see <http://www.iaea.org/worldatom/Documents/Legal/liability_status.pdf>.

In addition to the Vienna Convention, the complete regime includes the following (note that various instruments shown in italics are not in force): 1960 Paris Convention on Third Party Liability in the Field of Nuclear Energy, with annex, July 29, 1960, as amended by the additional Protocol of January 28, 1964, and the Protocol of November 16, 1982, *UNTS*, Vol. 956 (1974), No. 13706, pp. 251 and 335, and Vol. 1519 (1988), No. 13706, p. 329 [hereinafter, **Paris Convention**]; the 15 Parties as of October 2001 are, Belgium, *Denmark, *Finland, *France, *Germany, *Greece, *Italy, *Netherlands, *Norway, *Portugal, *Slovenia, Spain, *Sweden, *Turkey, and the United Kingdom. *The states followed by an asterisk (*) are also Parties to the Brussels Convention; the states underlined are also parties to the 1988 Joint Protocol. See <<http://www.nea.fr/>>; the 1963 Brussels Convention Supplementary to the Convention on Third Party Liability in the Field of Nuclear Energy, January 31, 1963, as amended by the additional Protocol of January 28, 1964, *UNTS*, Vol. 1041 (1977), No. 13706, p. 358 [hereinafter, **Brussels Convention**]; the 1988 Joint Protocol Relating to the Application of the Vienna Convention on Civil Liability for Nuclear Damage and the Paris Convention on Third Party Liability in the Field of Nuclear Energy, September 21, 1988, *UNTS*, Vol. 1672 (1992), No. 28907, p. 301 [hereinafter **1988 Joint Protocol**]; the 24 Parties as of March 2003 are: Bulgaria (V), Cameroon (V), Chile (V), Croatia (V), Czech Republic (V), Denmark (P), Egypt (V), Estonia (V), Finland (P), Germany (P), Greece (P), Hungary (V), Italy (P), Latvia (V), Lithuania (V), Netherlands (P), Norway (P), Poland (V), Romania (V), St. Vincent and the Grenadines, Slovakia (V), Slovenia (withdrew V, December 11, 2002), Sweden (P), Ukraine (V). Ratification of Paris and Vienna Conventions are indicated by (P) and (V), respectively. See <<http://www.iaea.org/worldatom/>>; the 1997 Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage, with annex, 29 September 1997, *International Legal Materials*, Vol. 36 (1997), p. 1462, (not in force) [hereinafter, **1997 Vienna Protocol**]; and the 1997 Convention on Supplementary Compensation for Nuclear Damage, September 29, 1997, *International Legal Materials* 36 (September, 1997), p. 1473, (not in force), [hereinafter, **1997 Supplementary Convention**]. These instruments are discussed in the text immediately below.

³⁹ SDR 60 million (US\$80 million) was the value used when the 1997 Vienna Protocol and the 1997 Supplementary Convention were adopted.

⁴⁰ Parties may limit the liability of the operator to SDR 100 million (US\$150 million) for the first fifteen years after the revised Vienna Convention enters into force and thereafter may limit it to SDR 300 million (US\$400 million). The 1997 Vienna Protocol additionally gives jurisdiction over nuclear transport cases to states with exclusive economic zones; however, it may introduce legal uncertainty. Nuclear transport often passes through several exclusive economic zones; hence, a floating jurisdiction is introduced. Questions may also be raised regarding the relation of jurisdiction to the "installation state" under the original Vienna Convention, as well as this issue related to the general application of the Paris and Vienna Conventions involving states governed solely by the Paris Convention, States governed solely by the Vienna Convention, and states linked by the 1988 Joint Protocol.

⁴¹ For a short description see *Nuclear Law Bulletin*, No. 70 (December, 2002), p. 68. Full information on the amendment will become available on <<http://www.nea.fr/html/law/legal-documents.html>> when revised instruments are formally adopted.

⁴² Fiona Wagstaff, email correspondence with Douglas Brubaker, February 18, 2003, notes problems in relation to competence of the EU regarding jurisdiction.

A solution has been found, and the EC is currently finalizing procedural requirements to allow Paris Convention States which are also EU Member States to sign the Amending Protocols. Finalization of these instruments is expected within the next three to six months.

⁴³ Ben McRae, "The Compensation Convention: Path to a Global Regime for Dealing with Legal Liability and Compensation for Nuclear Damage," *Nuclear Law Bulletin*, No. 61 (June 1998), pp. 26-27 and 29-30.

⁴⁴ The International Atomic Energy Agency (IAEA) has prepared a précis of these instruments. See <<http://www.iaea.or.at/worldatom/Documents/Legal/liability.shtml>>.

⁴⁵ See generally, William J. Leigh, "The Nuclear Liability Convention: The Only Word on Liability?" in *Contemporary Developments in Nuclear Energy Law*, pp. 509-519.

⁴⁶ See generally, McRae, "The Compensation Convention," pp. 25-38.

⁴⁷ See, for example, Paris Convention Article 9 which states, "The operator shall not be liable for damage caused by a nuclear incident directly due to an act of armed conflict, hostilities, civil war, insurrection, or, except in so far [sic] as the legislation of the Contracting Party in whose territory his nuclear installation is situated may provide to the contrary, a grave natural disaster of an exceptional character."

⁴⁸ Nathalie L.J.T. Horbach, Omer F. Brown II, and Tom vanden Borre, "Terrorism and Nuclear Damage Coverage," *Journal of Energy and Natural Resources Law* 20 (July 2002).

⁴⁹ Patrick Reyners, "Modernization of the Civil Liability Regime," p. 10.

⁵⁰ *Ibid.*, pp.10-11. It may be noted that one of the objectives of the 1997 Vienna Protocol, in addition to increasing the level of compensation, was to help harmonize liability arrangements with in the states of Eastern Europe and the former Soviet Union with those of the community of states that had previously agreed to adopt international liability standards. See Nathalie L.J.T. Horbach, "Lacunae," in *Contemporary Developments in Nuclear Energy Law*, pp. 77-85, who calls the result "a labyrinth of international agreements on nuclear liability..." and that the Paris Convention and 1988 Joint Protocol also need revision. As seen, the pending Paris Amendment accomplishes the former.

⁵¹ Patrick Reyners, "Modernization of the Civil Liability Regime," p. 10.

⁵² *Ibid.*

⁵³ Norbert Pelzer, "Focus on the Future of Nuclear Liability Law," *Reform of Civil Nuclear Liability, International Symposium, Budapest Symposium*, p. 424, notes these states, as well as Switzerland, have implemented these principles with certain variations at a national level. See also "Civil Liability for Nuclear Damage," Uranium Information Center, Nuclear Issues Briefing Paper No. 70, <<http://www.uic.com.au/nip70.htm>>.

⁵⁴ Fiona Wagstaff, telephone conversation with Douglas Brubaker, March 16, 2000. Charles Allen, "International Principles of Nuclear Liability: Western Group's Comments on the Draft Law on the Compensation of Nuclear Damage and Nuclear Insurance," in *International Seminar on Nuclear Damage Compensation and Nuclear Insurance: Compendium, Moscow, 15-17 April 1997* (Paris: OECD, Nuclear Safety Agency, 1997), [Moscow Seminar], p. 163-166; Anne Troy, "Statement for the International Seminar on Nuclear Liability and Insurance Issues in Russia," in *Moscow Seminar*, p. 171; Carol Kessler, Senior Co-coordinator for Nuclear Safety, U.S. Department of State, "Address at the Intergovernmental Working Group (IWG) Meeting on Nuclear Waste Problems in Russia," Washington D.C., March 1, 2000. Ambassador Torbjørn Norendal, interview with Douglas Brubaker and Steven Sawhill, Oslo, June 29, 2000.

⁵⁵ *Ibid.*; M.A. Zhuchkov, et al., "International Civil (Legal) Nuclear Liability Regime and Conceptual Features of the Russian Federation Nuclear Insurance System," *Moscow Seminar*, pp. 144-159.

⁵⁶ "Federal Law on the Use of Atomic Energy of 20 October 1995," *Supplement to Nuclear Law Bulletin* No. 57 (June, 1996). Numerous legal instruments have been enacted under the statute to regulate the use of nuclear energy.

⁵⁷ A.A. Matveev, "Conceptual Draft of the Federal Law, 'On Indemnification for Nuclear Damage and Nuclear Insurance,'" *Moscow Seminar*, pp. 139-143.

⁵⁸ Although the draft provides for full compensation by the Russian government for loss and damage caused by radiation, a number of provisions appear to be inconsistent with those of the Vienna Convention. The draft contains special rules governing transboundary damage that may be contrary to the Vienna Convention's prohibition of discrimination among victims on the basis of their nationality, domicile, or residence. It is also unclear as to whether its provisions or

those of the Vienna Convention would take precedence in the event that Russia brings both into force. Ambiguous provisions, moreover, leave the extent of the operator's liability unclear. In addition, certain provisions suggest that it may cover damages from defense-sector nuclear activities, while other provisions suggest that it does not. See Charles Allen, "International Principles of Nuclear Liability," *Moscow Seminar*, pp. 163-166 for a more comprehensive discussion, as well as citations. Nathalie L.J.T. Horbach, "Nuclear Energy Law and Regulation in Central and Eastern Europe and the NIS," in *Contemporary Developments in Nuclear Energy Law*, pp. 206-210 and Olga A. Supataeva, "New Russian Legislation on Civil Liability for Nuclear Damage and Nuclear Insurance," in *Contemporary Developments in Nuclear Energy Law*, pp. 256-257 note there were two drafts, and the State Duma in 1998 supported the variation, which appeared to be rather more consistent with the Vienna Convention, though several procedural hurdles remained.

⁵⁹ Progression of these bills through the Duma is unclear, although several hearings have occurred. "Overview of Nuclear Legislation in Central and Eastern Europe and in the NIS Year 2000 Edition—Russian Federation," (Paris, OECD, Nuclear Safety Agency, 2000), (OECD, *Overview of Nuclear Legislation*), 8. Obtained from Fiona Wagstaff, March 16, 2000. Fiona Wagstaff, email correspondence to Douglas Brubaker, February 18, 2003, notes since March 16, 2000, new developments relate only to reorganization of Rosenergoatom and the law allowing the import of spent nuclear fuel for storage and reprocessing. Ambassador Torbjørn Norendal, email correspondence with Douglas Brubaker, July 10, 2002, indicated this issue was discussed in the Norwegian-Russian Commission, June 13, 2002, and also noted a liability draft consistent with the Vienna Convention formulated by the Russian Ministry of Atomic Energy and the Russian Nuclear Regulatory Authority (Gosatombnadzor) was through the first hearing in the Duma and cleared for a second hearing. Following adoption of this domestic legislation, the Duma could approve ratification of the Vienna Convention.

Russia would seem to gain various advantages through ratification with respect to damage claims arising from its civilian nuclear activities, in particular vis-à-vis other countries participating in the Vienna Convention regime. The advantages include the protection, at least against other Vienna Convention states, of a lower fixed ceiling of liability than under general international tort law and the right to have all damage claims heard exclusively in Russian courts. One reason Russia may have declined to ratify the treaty may be that its domestic nuclear liability law, like that of the United States, is anticipated to be inconsistent with treaty requirements. Or, the convention may simply have received lower priority on the Russian legislative agenda.

Why the Western states have encouraged Russia to join the pact is also unclear, particularly when Western governments believe themselves to be protected from liability by their bilateral nuclear assistance agreements with Moscow. The answer to this question may lie partly in the view that Russia's endorsement of international treaties is seen as a means for Russia to provide confidence to its Western partners that it is taking its liability responsibilities seriously and as well as representing an important contribution to international standards. Kessler, "Address at the IWG meeting," March 1, 2000. Western donors may also believe that a Russian treaty commitment would have greater legal weight than a bilateral agreement, a factor that may also help to encourage additional participation by private industry in Western-supported nuclear programs. In addition, Western governments may have the more self-serving interest of trying to shield Western suppliers, who would be better protected under the Vienna Convention than under traditional tort law. See section herein, Liability Provisions in Russia's Bilateral Nonproliferation Assistance Agreements with Western States.

⁶⁰ Fiona Wagstaff, telephone conversation with Douglas Brubaker, March 16, 2000.

⁶¹ The OECD/NEA Legal Affairs Section indicates that it has not received any recent information as to the contents or progress of the draft legislation. Fiona Wagstaff, telephone conversation with Douglas Brubaker, February 18, 2003.

⁶² V. Luntsevich, Duma member and deputy chairman of the IWG, "Address at the IWG," March 1, 2000, claimed at that time that Russia lacked the financial capacity to meet the requirements under the Vienna Convention and could not afford to ratify it.

⁶³ Andrei V. Karasev, "Nuclear indemnity regulations in the Russian Federation," *Budapest Symposium*, pp. 624-625.

⁶⁴ See notes 3 and 4.

⁶⁵ See note 4.

⁶⁶ "Agreement between the Government of the Russian Federation and the European Bank for Reconstruction and Development [EBRD] relating to Nuclear Safety Account Projects in the Russian Federation, with Annexes," June 9, 1995, OECD, Nuclear Safety Related Co-operation Agreements, 39-62 (hereinafter **1995 EBRD Agreement**), Obtained from EBRD, One Exchange Square, London EC2A 2EH, U.K. The EBRD Agreement governs assistance to improve the safety of various civilian nuclear power plants.

⁶⁷ "Agreement between the Government of the Russian Federation and the Government of the Federal Republic of Germany on Nuclear Liability in connection with deliveries from the Federal Republic of Germany for Nuclear Installations in the Russian Federation," June 8, 1998, *Nuclear Law Bulletin*, No. 63 (June, 1999), pp. 105-110 (hereinafter, **1998 German-Russian Agreement**).

⁶⁸ "Indemnity Agreement under the 1995 Memorandum of Understanding between the Commission of the European Communities and the Russian Federation on the Implementation of the Technical Assistance Programs in the field of Nuclear Safety," February 27, 1995, 3rd ed., *Compendium of Nuclear Safety Related Cooperation Agreements concluded with the Federation of Russia and with Ukraine* (Issy-les-Moulineaux, AEN/NEA OECD, February 2003), pp. 27-42, (hereinafter, **1995 EC Memorandum**).

⁶⁹ "Agreement between the Government of the French Republic and the Government of the Russian Federation on Third Party Liability for Nuclear Damage Caused in Connection with Deliveries from the French Republic for Nuclear Installations in the Russian Federation," June 20, 2000, *Compendium of Nuclear Safety Related Cooperation Agreements concluded with the Federation of Russia and with Ukraine* (Issy-les-Moulineaux, AEN/NEA OECD, February 2003), pp. 111-125, (hereinafter, **2000 Franco-Russian Agreement**).

⁷⁰ "Agreement between Nordic Environment Finance Corporation and the Government of the Russian Federation on Corporation in Nuclear Environmental Issues, July 5, 2002, 3rd ed., *Compendium of Nuclear Safety Related Cooperation Agreements concluded with the Federation of Russia and with Ukraine* (Issy-les-Moulineaux, AEN/NEA OECD, February 2003), pp. 151-164 (hereinafter **2002 NEFCO-Russian Agreement**).

⁷¹ "Agreement between France, Germany and Russia on Cooperation in the Field of the Civil Use of Pu Resulting from the Dismantling of Russian Nuclear Weapons," June 2, 1998, 3rd ed., *Compendium of Nuclear Safety Related Cooperation Agreements Concluded with the Federation of Russia and with Ukraine* (Issy-les-Moulineaux, AEN/NEA OECD, February 2003), pp. 87-96, (hereinafter **1998 Franco-German-Russian Agreement**).

⁷² Fiona Wagstaff, telephone conversation with Douglas Brubaker, February 27, 2001. Fiona Wagstaff, email correspondence with Douglas Brubaker, February 18, 2003, notes no information has been received regarding new developments.

⁷³ This is with the implicit exception that recommendations appear in several of the accords that Russia accede to the Vienna Convention or other equivalent indemnity arrangement.

⁷⁴ "Agreed Framework between the United States of America and the Democratic Peoples' Republic of Korea (DPRK)," October 21, 1994, (hereinafter **1994 Agreed Framework**), <<http://kedo.org/pdfs/AgreedFramework.pdf>>.

⁷⁵ See <http://kedo.org/au_history.asp>. Later that year New Zealand, Australia, and Canada joined by accepting the principles within the Charter, and in 1996 Indonesia, Chile, and Argentina also became members. In 1997 the European Atomic Energy Community joined KEDO with representation on the Executive Board for a term to coincide with their substantial and sustained support. Poland became a member later the same year, and the Czech Republic and Uzbekistan became members in 1999 and 2000, respectively. KEDO welcomes other states that support its work as members and contributors, and has received material and financial support from 19 other nonmember, contributing states.

⁷⁶ See "Agreement on Supply of a Light-Water Reactor Project to the Democratic People's Republic of Korea between the Korean Peninsula Energy Development Organization and the Government of the Democratic People's Republic of Korea," December 15, 1995, <<http://kedo.org/pdfs/SupplyAgreement.pdf>>.

⁷⁷ The full text of Article XI is as follows: NUCLEAR LIABILITY

1. The DPRK shall ensure that a legal and financial mechanism is available for meeting claims brought within the DPRK for damages in the event of a nuclear incident (as defined in the Vienna Convention on Civil Liability for Nuclear Damage, done at Vienna, May 21, 1963) in connection with the LWR plants. The legal mechanism shall include the channeling of liability in the event of a

nuclear incident to the operator on the basis of absolute liability. The DPRK shall ensure that the operator is able to satisfy such liabilities.

2. Prior to the shipment of any fuel assemblies to the DPRK, the DPRK shall enter into an indemnity agreement with KEDO, and shall secure nuclear liability insurance or other financial security to protect KEDO, its contractors and sub-contractors, and their respective personnel in connection with any third party claims in any court or forum arising from activities undertaken pursuant to the Agreement in the event of nuclear damage or loss occurring inside or outside the territory of the DPRK as a result of a nuclear incident in connection with the LWR plants. Details concerning the indemnity agreement and insurance or other financial security shall be specified in a separate protocol between KEDO and the DPRK pursuant to the Agreement.

3. The DPRK shall bring no claims against KEDO, its contractors and subcontractors, and their respective personnel arising out of any nuclear damage or loss.

4. This Article shall not be construed as acknowledging the jurisdiction of any court or forum or as waiving any immunity of either side.

5. The domestic legal system of the DPRK may provide that, if the operator proves that the nuclear damage resulted wholly or partly either from the gross negligence of the person suffering the damage or from an act or omission of such person done with intent to cause damage, the operator may be relieved wholly or partly from his obligation to pay compensation in respect of the damage suffered by such person. The operator shall have a right of recourse only if the damage caused by a nuclear incident results from an act or omission done with intent to cause damage, against the individual acting or omitting to act with such intent. For purposes of this paragraph, the terms "person" and "individual" shall have the same meaning as in the Vienna Convention on Civil Liability for Nuclear Damage (done at Vienna, May 21, 1963).

⁷⁸ "Agreement on Terms and Conditions of the Accession of the European Atomic Energy Community to the Korean Peninsula Energy Development Organization," July 30, 1997, <<http://kedo.org/pdfs/EUAscension.pdf>>.

⁷⁹ For further analysis of the liability provisions, see, U.S. General Accounting Office, *Nuclear Proliferation: Implication of the U.S./North Korea Agreement on Nuclear Issues*, GAO/RCED/NSIAD-97-8, October 1996, <<http://www.gao.gov/archive/1997/rc97008.pdf>>.

⁸⁰ One factor that may have contributed to the readiness of the KEDO members to share liability costs in this fashion is that the reactors in question were new, Western-supplied reactors, which are generally viewed as considerably safer than Russia's Soviet-era units.

⁸¹ See Henry Sokolski, "Implementing the DPRK Nuclear Deal: What U.S. Law Requires," *Nonproliferation Review* 7 (Fall-Winter 2000), p. 146.

⁸² These are the CTR Umbrella Agreement, the subsidiary 1998 MPC&A Agreement, and most recently, the subsidiary 2003 Elimination of Plutonium Production Agreement See CTR Umbrella Agreement and International Nuclear Safety Program Agreement.

⁸³ See the 1993 International Nuclear Safety Program Agreement, the 1998 Nuclear Cities Initiative Agreement, and the 1998 Plutonium Science and Technology Agreement, discussed in note 4. See below for discussion of the 1995 EBRD Agreement, the 1995 EC Memorandum, the 1998 German-Russian Agreement, 1998 the Franco-German-Russian Agreement, the 2000 Franco-Russian Agreement, and the 2002 NEFCO-Russia Agreement.

⁸⁴ See International Nuclear Safety Program Agreement and MNEPR.

⁸⁵ See 1992 CTR Umbrella Agreement.

⁸⁶ See 1999 MNEPR Declaration for developments regarding the particular U.S. term "hold harmless" in recent negotiations.

⁸⁷ See, e.g., 1993 International Nuclear Safety Program agreement. The exception for premeditated actions has been a particular concern for U.S. negotiators, but one they accepted in three agreements covering activities implemented on the U.S. side by the U.S. Department of Energy. The agreements with this exception (and several others) are the 1993 International Nuclear Safety Program Agreement, the 1998 Nuclear Cities Initiative Agreement; and the 1998 Plutonium Science and Technology Agreement. The U.S. Defense Department attorney responsible for crafting the CTR Umbrella Agreement provided the following explanation as to why the United States sought to avoid this exception in that agreement and others Referring to the negotiation of CTR umbrella agreements with Belarus, Kazakhstan, Russia, and Ukraine, he stated, "Although recipient governments initially argued that their liability waivers should include exceptions for U.S. conduct that was 'reckless,' 'grossly negligent,' or 'inten-

tional,' the United States refused, 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. Jack M. Beard, "Recent Developments."

⁸⁸ U.S. Department of Defense officials, (names withheld by request) interviewed by Leonard Spector, Washington, DC, February 2003.

⁸⁹ U.S. Department of Energy officials, (names withheld by request) interviewed by Leonard Spector, Washington, DC, February 2003. In one example, in mid-1994, eight private U.S. firms, considering whether to provide goods and services to support the Department of Energy program to improve the safety of Russian nuclear power plants under the International Nuclear Safety Program Agreement, requested a U.S. government indemnity but were offered only a "comfort letter," signed by then Vice President Albert Gore. In essence, the letter declared that the U.S. government would use diplomatic channels to try to ensure that Russia fulfilled its indemnification obligations and would support U.S. firms in any litigation. Vice President Albert Gore, correspondence with eight U.S. nuclear supplier corporations, September 26, 1994 (copy on file with the *Nonproliferation Review*). Nonetheless, most of the firms considered the letter, together with the terms of the International Nuclear Safety Program Agreement, to provide inadequate protection against liability, and refrained from participating in this program. Largely because of this challenge, the program was refocused to concentrate on training of Russian nuclear power plant operators, rather than on the provision of equipment to Russian nuclear facilities.

⁹⁰ Section 5.01. Indemnity in Favor of the Administrator

(a) 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.

(b) The provision of this Section 5.01 shall be in addition to (and not in lieu of) any indemnity provided by other entities or persons in favor of the Bank in connection with NSA activities.

Section 5.02 Indemnity Statement

The Government of the Russian Federation shall maintain in force the Indemnity statement in favor of the contractors, consultants and suppliers of equipment or services financed through grant funds from the NSA.

⁹¹ See EC Memorandum.

⁹² See Appendix I for *Confirmation Letter of Indemnity*.

⁹³ Article 9

1. With the exception of claims for damage or injury against individuals arising from their premeditated actions, the Russian Party shall bring no claims or legal proceedings against the Norwegian Party and its personnel or contractors, subcontractors, consultants, suppliers of equipment or services at any tier and their personnel, for indirect, direct or consequential damage to property owned by the Russian Federation. This paragraph shall not apply to legal actions brought by the Russian Party to enforce the provisions of contracts to which it or a Russian national is a party.

2. With the exception of claims for damage or injury against individuals arising from their premeditated actions, the Russian party shall provide for the adequate legal defense of, indemnify, and shall bring no claims or legal proceedings against, the Norwegian Party and its personnel, contractors, subcontractors, consultants, suppliers of equipment 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 this Agreement for injury, loss or 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.

3. Without prejudice to paragraphs 1 and 2 of this article nothing in this article shall be interrupted to prevent legal proceedings or claims against nationals of the Russian Federation or permanent residents on the territory of the Russian Federation.

4. The provisions of this article shall not prevent indemnification by the Parties for damage in accordance with their national laws.

5. Nothing in this article shall be construed as acknowledging the jurisdiction of

any court or forum outside of the Russian Federation over third-party claims, for which paragraph 2 of this article applies, except as provided for in paragraph 9 of this article and in any other case where the Russian Federation has pledged itself to acknowledge and execute a legal decision on the basis of provision of international agreements.

6. Nothing in this article shall be construed as waiving the immunity of the Kingdom of Norway or the Russian Federation with respect to potential third-party claims that may be brought against either of the Parties.

7. The provisions of this article shall – if so requested by the contractor – be incorporated into the project agreements or contracts by the issue, by or on behalf of the Russian Party, of an indemnity confirmation letter to the contractor.

8. In case a nuclear incident has occurred which may lead to the fulfillment of the obligation to compensate damage, the Parties shall hold consultations upon request by one of the Parties.

9. As regards its obligations in this article to the contractors, subcontractors consultants, suppliers of equipment or services at any tier and their personnel, the Russian Party undertakes to have no conflict, controversy or claim arising out of or in relation to this article, if not settled amicably within three months, referred to and finally resolved by arbitration in accordance with the UNCITRAL Arbitration Rules. The national legislation of the Parties shall not be applied for the resolution of any conflict, controversy or claim. (United Nations Commission on International Trade (UNCITRAL), parentheses added).

10. Any payments related to the indemnification in paragraph 2 of this article shall be made promptly and in a convertible currency.

11. The obligations concerning liability for nuclear damage undertaken by the Russian Party in accordance with the present article shall be valid for objects which are the subject of cooperation under this Agreement, and shall remain in effect regardless of any subsequent transfer of ownership of these objects, termination of this Agreement or the expiry of its validity.

⁹⁴ The Indemnity Agreement under the EC Memorandum requires a commitment from Russia not to make any claims with regard to damage resulting from TACIS program activities and to hold harmless and indemnify all community contractors in connection with third-party claims.

⁹⁵ Norwegian Ministry of Defense, "Draft Protocol on Claims, Legal Proceedings and Indemnification to the MNEPR Framework Agreement," November 19, 2001, contains the same basic elements noted above. Russia does not accept liability for nuclear damages in cases where individuals are sued for injuries arising from their actions done with "intent to cause injury or damage," the agreement cannot be construed as "waiving sovereign immunity," "hold harmless" is dropped, and "non acknowledgement of court jurisdiction" outside Russia declared. The Vienna Convention and the 1988 Joint Protocol may be substituted, upon discretion, concerning liability following accession of both instruments by Russia. These basic points appear to continue to govern in the current draft. Enforcement is considered possible under the UNCITRAL Arbitration Rules with jurisdiction in Stockholm. Ambassador Torbjørn Norendal, telephonic interview by Douglas Brubaker, March 11, 2003. For a description, see Sawhill and Jørgensen, *Military Nuclear Waste*, pp. 67-70. See also generally Jildou Dorenbos, "Nuclear risks in the Russian Arctic, Who takes responsibility," Groningen Rijksuniversiteit Groningen, forthcoming). In the event the United States obtains a separate MNEPR Protocol paralleling the 1992 CTR Umbrella Agreement liability provisions, while this may limit Russian victims from raising claims against the United States and U.S. contractors for nuclear damage, the way may be open for Finnish victims to raise such claims. Henrik Seland, Legal Office, Norwegian Ministry of Foreign Affairs, interview by Douglas Brubaker and Jildou Dorenbos, Oslo, December 17, 2001. Russia, however, would still have the obligation to indemnify the Western parties for any claims they were obliged to pay.

Norwegian Ministry of Defense, "Draft AMEC Agreement," July 27, 1999, is less comprehensive, containing a sketch of the principles noted. No limitations are made regarding Russia not accepting liability in cases involving "premeditated actions," to ensure the agreement is not construed as waiving sovereign immunity, or to ensure that the agreement is not construed as acknowledging the jurisdiction of any court. On the other hand, the draft does incorporate the concept that Russia will hold the other parties "harmless."

⁹⁶ Fiona Wagstaff, telephone conversation with Douglas Brubaker, March 16, 2000.

⁹⁷ Bram Brands, "Nuclear Indemnity Agreement between the EC and Russia," *Moscow Seminar*, p. 176.

⁹⁸ Ibid, pp.175-176.

⁹⁹ BBC, "Europe to Help Process Radioactive Waste," February 9, 2001, in Russian Environmental Digest Files Editor, <<http://www.teia.org>>.

¹⁰⁰ Fiona Wagstaff, telephone conversation with Douglas Brubaker, March 16, 2000.

¹⁰¹ Karasev, "Nuclear Indemnity Regulations," p. 624.

¹⁰² Several agreements do suggest Russian ratification of an international liability instrument, which would subsequently encompass these measures.

¹⁰³ See Omer F. Brown II, "Bilateral Agreements with CEEC/NIS from the Perspective of the United States," in *Contemporary Developments in Nuclear Energy Law*, pp. 491-498, who believes this to be a fatal flaw. Ambassador Torbjørn Norendal, telephone interview by Douglas Brubaker, March 11 2003, stated the belief that some enforcement is possible under the UNCITRAL Arbitration Rules with jurisdiction in Stockholm for both the Norwegian-Russian Agreement and eventual MNEPR.

¹⁰⁴ Under the International Northern Sea Route Program (INSROP), the technically best bids in a moot round conducted for carriage of cargoes utilizing nuclear icebreakers came from the Moscow market. Edgar Gold, Oceans Institute of Canada, interview by Douglas Brubaker, Oslo, June 26, 1997.

¹⁰⁵ N.A. Levant, "Main Principles of Establishing a Russian Nuclear Insurance Pool," *Moscow Seminar*, p. 181; see, generally, pp. 177-181. A.E. Karpov and A.G. Karachevtsev, "Some Principles of Approach to Nuclear Risk Insurance," *Moscow Seminar*, pp. 182-183; V. Gubanov, "The Concept of the Development of Insurance Protection for Enterprises, Organizations and Employees of RF," *Moscow Seminar*, pp. 184-188; and M.E. Amelina, "Role of Nuclear Insurance Broker in Nuclear Hazardous Facilities Insurance in the Russian Federation," *Moscow Seminar*, pp. 191-195. In December 2002, U.S.\$1 was worth 31.6 Russian rubles.

¹⁰⁶ This is the minimum level required under the Vienna Convention. See Karpov and Karachevtsev, "Some Principles of Approach to Nuclear Risk Insurance," pp. 182-184 and Horbach, "Nuclear Energy Law and Regulation," p. 207.

¹⁰⁷ 809 F.2d 195, 202 (2d Cir.), cert. denied, 484 U.S. 871 (1987). In this case, U.S. courts accepted jurisdiction, but the matter was turned over to Indian courts on the grounds that they were a more "convenient" forum, where evidence could be more effectively taken, especially from the victims of the incident.

¹⁰⁸ This seems confirmed by McRae, "Recent Developments," *Budapest Symposium*, p. 540. Referring to the efforts of Indian victims to sue Union Carbide Corporation in U.S. courts following the 1984 toxic gas cloud catastrophe at the plant in Bhopal, India, the author noted that, were there a nuclear accident anywhere in the world involving a U.S. company, it could be expected that some victims would take their claims to a U.S. court and request it to take jurisdiction. This the court may do, following *In re Union Carbide Corp. Gas Plant Disaster at Bhopal*. The author noted further, "While ultimately the court [U.S. Supreme Court] declined to take jurisdiction, this was not because it doubted its capacity to do so: it basically waited to ensure that there was an adequate remedy available in India."

¹⁰⁹ The \$80 million fund would have to be shared, however, with any non-Norwegian parties who filed successful damage claims.

¹¹⁰ Measures attempting to increase civilian control are often promoted in order to further the elimination of nuclear weapons, to support nuclear disarmament measures, and to promote nuclear nonproliferation. See generally John W.R. Lepingwell and Nikolai Sokov, "Strategic Offensive Arms Elimination and Weapons Protection, Control, and Accounting," *Nonproliferation Review* 7 (Spring 2000), pp. 64-75.

¹¹¹ The question is a complicated one, however, because Minatom is, itself, a "dual-use" agency, conducting both civilian and defense-related activities. Of some relevance is the Joint Convention on the Safety of Spent Fuel Management and on Safety of Radioactive Waste Management, September 5, 1997, IAEA Information Circular 546 (Vienna, International Atomic Energy Agency, 1997), recently in force June 18, 2001, since it covers the possibility of such transfers from military to civilian control. That instrument, however, does not address liability, and Russia is not a party to it. Perhaps an argument could be made that the application of the IAEA safeguards signals civilian uses, but because Russia is a nuclear-weapon state, it is not required to accept IAEA monitoring on its nuclear activities and has so far permitted the agency to monitor only a handful of its civilian nuclear facilities. Thus, except in these cases, the presence of IAEA inspections would not be a standard that would help distinguish peaceful from military nuclear activities in Russia.

¹¹² Another problem affecting Norwegian interests regarding potential liability is related to the level of enrichment of uranium transferred from defense-related activities to civilian control. Higher enrichments, for example, are more susceptible to criticality accidents. The Russian government treats naval reactor fuel enrichment levels as classified information. Western governments and contractors, however, are reluctant to assume liability in projects where such essential details of the nuclear material are unknown. Some progress has been made on this issue, but a balance between transparency and the security needs of Russia remains a substantial problem. James Clay Moltz, Associate Director, Center for Nonproliferation Studies, Monterey Institute of International Studies, interview by Douglas Brubaker, Monterey, September 26, 2000, and email correspondence with Douglas Brubaker, October 15, 2002.

¹¹³ Limits of \$400 million, the level established in the 1997 Vienna Protocol, would probably be adequate.

¹¹⁴ If Russia presently were a party to the Vienna Convention reserving legal jurisdiction with Russian courts and channeling liability to the operator, U.S. courts might not accept jurisdiction; however, the point is not clear because, as noted, of Russia's questionable ability to cover liability involving substantial damages. McRae, "Recent Developments," *Budapest Symposium*, p. 540.

¹¹⁵ See Inge Sellevåg, "Vardø Exposed," and Theodore A. Postol, "The Target is Russia," *Bulletin of Atomic Scientists* 56 (March/April 2000), pp. 26-29 and pp. 30-35, respectively, as well as Elizabeth Becker, "Russians Challenge U.S. over Radar in Norway," *New York Times*, February 22, 2000, <<http://www.nytimes.com>>. See also Geoffrey Forden, "The Pentagon and the Professor: A Meeting of Unlike Minds," *International Herald Tribune*, September 1-2, 2001, <<http://www.iht.com>>, and William J. Broad, "M.I.T. Studies Accusations of Lies and Cover-Up of Flaws in Antimissile System," *New York Times*, January 2, 2003, <<http://www.nytimes.com>>.

¹¹⁶ Halvor Tjønn, "Vardø-radar uroer Ivanov, [Vardø radar disturbs Ivanov]," *Aftenposten*, May 19, 2001, p. 9.

¹¹⁷ Jane Perlez, "Rice on Front Lines as Adviser to Bush," *New York Times*, August 19, 2001, <<http://www.nytimes.com>>.

¹¹⁸ George Lewis, Lisbeth Gronlund, and David Wright, "National Missile Defense: An Indefensible System," *Foreign Policy*, Winter 1999-2000, pp. 120-137; Esther Schrader, "For Now, Pentagon to Keep Missile-Shield Tests Basic," *International Herald Tribune*, August 17, 2001, <<http://www.iht.com>>.

¹¹⁹ Ibid. See also Patrick E. Tyler, "U.S. Sets Deadline for Settlement of ABM Agreement," *New York Times*, August 22, 2001, <<http://www.nytimes.com>>.

¹²⁰ "Treaty on the Limitation of Anti-Ballistic Missile Systems," May 26, 1972, Treaties and International Agreements Registered or Filed or Reported with the Secretariat of the United Nations 944, no. 13446 (year of UNTS) 13, (ABM Treaty). See Patrick E. Tyler, "Russia and U.S. Optimistic on Defense Issues," *New York Times*, October 19, 2001, <<http://www.nytimes.com>>.

¹²¹ Ibid. The cooperative trade-off likely included, as well, Russia's aid in Afghanistan, including securing bases in bordering former Soviet republics and intelligence. See also David E. Sanger, "Bush and Putin Declare They Can Alter ABM Pact," *New York Times*, October 22, 2001, <<http://www.nytimes.com>>.

¹²² "Treaty between the United States of America and the Russian Federation on Strategic Offensive Reductions," (Treaty of Moscow), <<http://www.whitehouse.gov/news/releases/2002/05/20020524-3.html>>.

¹²³ David E. Sanger and Michael Wines, "Bush and Putin Sign Pact for Steep Nuclear Arms Cuts," *New York Times*, May 25, 2002, <<http://www.nytimes.com>>.

¹²⁴ "Samarbeidet med Russland er Svekket, [Cooperation with Russia is Weakened]," *Dagsavisen*, August 7, 2000, p. 14. In the article, Ragnar Bratland, Defense Attaché Norwegian Embassy, Moscow, is noted to state Denmark also was under strong pressure by Russia concerning plans to use the Thule base as a part of the NMD system.

¹²⁵ Pavel Felgenhauer, freelance specialist in Russian military affairs, interview by Douglas Brubaker, Bolkesjø, Norway, April 4, 2001, noted that, in the eyes of the Russian military leadership, Norway is a "Warsaw Pact country" under Washington, D.C.

¹²⁶ Halvor Tjønn, "Avvist i Moskva, [Rejected in Moscow]," *Aftenposten*, March 8, 2001, p. 10. The lack of a normal relationship between Russia and NATO since NATO's action in the former Yugoslavia was taken up in talks between the Norwegian Parliamentary Defense Committee, members of the Russian Duma,

and the Russian Minister of Defense. Sawhill and Jørgensen, *Military Nuclear Waste*, pp. 85-89, believe AMEC to have been more affected by the Kosovo crisis than the CTR. Under the latter, Ivan Safranchuk, ed., *Co-operative Threat Reduction Program: How Efficient?* (Moscow: PIR Centre, 2000) believed the program to be hardly affected, while under AMEC, Russia's contacts with Norwegian and U.S. principals were suspended for about a year.

¹²⁷ NATO brought Russia into a partnership, which is hailed as an immense step for international security. Russia will have an equal voice in consultations within NATO on a predetermined number of issues ranging from counterterrorism to the spread of nuclear weapons, but will have no possibility of blocking or vetoing decisions taken by the North Atlantic Council, NATO's highest authority. John Vinocur, "Russia, oldest NATO foe, becomes limited partner," *International Herald Tribune*, May 29, 2002, <<http://www.iht.com>>.

¹²⁸ Michael Wines, "What's behind Russia's stand," *New York Times*, March 7, 2003, p. 1 is more pessimistic. The author notes in relation to the Iraq question before the Security Council in the U.N. that the United States was due a come-uppance by Russia after years of steamrolling over Russian objections on many international issues. These include the NATO air war against Yugoslavia, the junking of the 1972 ABM Treaty, the NATO expansion and the basic tenets of the Moscow Treaty, which Russia grudgingly signed.

¹²⁹ McRae, "The Compensation Convention," p. 29.

¹³⁰ An "exception that proves the rule" is that U.S. contractors have not sought U.S. government indemnities for activities under the 1998 Nuclear Cities Initiative Agreement because of their recognition that providing private sector employment opportunities at Russian nuclear weapon complex sites is unlikely to expose them to significant liability.

¹³¹ The idea of extending liability for damages caused by nuclear and other

accidents from the operator alone to the Western service provider or component manufacturer, if their negligence contributed to the accident, also deserves to be investigated. This may contribute an important *psychological* element, which may assist in negotiations between Russia and the West. Under this approach, claims for liability could be raised against the operator, the service provider, or the component manufacturer, or all of them together, at the option of the claimant. The operator would remain subject to strict liability, and claims under this shared negligence approach against providers or manufacturers would be limited to the value of the supply, including possible profits. This would assist in augmenting the resources available for compensation in the event the operator's assets and insurance were depleted, and would also generally enhance incentives for safety on the part of these other participants. At the same time only minor amounts of money may be involved to augment those provided by the operator; a determination of the value and profits of the supply may be difficult; and competition between injured persons and the operator may arise over negligence claims against the supplier. However, such a measure may indicate good faith and contribute in easing the dissatisfaction of Russian officials with the present system.

¹³² Marcus Radetzki, "Limitation of Third Party Nuclear Liability," pp. 13-14.

¹³³ Michael Trebilcock and Ralph Winter, "The Economics of Nuclear Accident Law," *International Review of Law and Economics* 17 (1997), pp. 220-221. The authors note, "Switzerland is the prime example of a country which has, in fact, followed this pattern, whereby limits are up-dated in a regular assessment pattern (and now removed), and it is perhaps not surprising that this country has succeeded in attracting the highest amount of insured capacity for liability risks anywhere in the world." Geoffrey Warren, "Insurances for the Nuclear Industry," May 1 1993, p. 18, evidence in *Energy Probe et al. v. Canada*, (1994).

¹³⁴ See Marcus Radetzki, "Limitation of Third Party Nuclear Liability," pp.17-20.

APPENDIX I
FORM OF SUPPLIER'S CONFIRMATION LETTER

[Supplier's Letterhead]

Ministry of Atomic Energy of the Russian Federation
Attention: Minister of Atomic Energy
[Address]

[Date]

Dear Minister,

Re: Indemnity Statement in favour of Suppliers financed by the Nuclear Safety Account

We refer to the Indemnity Statement relating to the activities of the Nuclear Safety Account on the territory of the Russian Federation ("the Indemnity Statement") dated 9 June 1995, and attached as Annex 2 to the Agreement between the Government of the Russian Federation and the European Bank for Reconstruction and Development relating to Nuclear Safety Account Projects in the Russian Federation ("the NSA Agreement") dated 9 June 1995.

The Government of the Russian Federation has agreed pursuant to the terms of Article 2 of the Indemnity Statement to indemnify and bring no claims against contractors, sub-contractors, consultants, suppliers and sub-suppliers of equipment or services and their personnel, financed through grant funds from the Nuclear Safety Account, (therein referred to as "the Beneficiaries").

We hereby inform you that [Supplier] has entered into a [supply] [consultancy] contract with [insert name of Recipient] dated [insert date]. [The persons and entities identified in the attached list, are our sub-contractors, consultants and sub-suppliers.] [Insert sentence only if applicable.] Financing for said contract is being provided by the Nuclear Safety Account through a grant agreement between [Recipient] and the European Bank for Reconstruction and Development dated [9 June 1995].

We understand that, pursuant to the terms of the Indemnity Statement:

(a) [Supplier] [and the persons and entities identified in the attached list] are Beneficiaries for the purposes of said Indemnity Statement;

APPENDIX I (CONTINUED)

(b) The provisions of the Indemnity Statement, including the arbitration clause in Article 7 thereof, which are incorporated by reference into this letter-agreement, are binding on [Supplier] [and on each of the Beneficiaries] and the Government at the Russian Federation.

Please execute this document in the place indicated to confirm that the foregoing constitutes a binding agreement between us.

Yours faithfully,

[Authorised Representative of Supplier]

ACCEPTED AND AGREED

on behalf of

THE GOVERNMENT OF THE RUSSIAN FEDERATION:

By: _____
Minister of Atomic Energy

Date: _____

Attachment: List of Subcontractors

Source: European Bank for Reconstruction and Development (EDBR), Nuclear Safety Account.