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PRIVATE PARTY PROTECTION AGAINST TRANSNATIONAL RADIATION POLLUTION THROUGH COMPULSORY ARBITRATION: A PROPOSAL

by Ann Voorhees Billingsley*

The peaceful use of nuclear energy has produced dangers of a new and special kind. The risks which the use of nuclear energy involves can only be controlled by the use of complicated technical equipment and installations .... In addition, in the event of radiation accidents leading to radioactive pollution of the air and waters, damage affecting several countries may in many cases have to be reckoned with .... The peculiarities of radioactivity and its great potential danger seem to stress the importance of .... taking international measures against radiation accidents.¹

I. INTRODUCTION

The worldwide nuclear industry has grown tremendously over the past two decades and is expected to continue growing.² This growth

² Bauser, United States Nuclear Export Policy: Developing the Peaceful Atom as a Commodity in International Trade, 18 HARV. INT'L L.J. 227, 229 (1977). At the May 1977 London Summit, a conference held by the leaders of seven industrial countries, participants agreed that nuclear energy use should be increased. “We agree on the need to increase nuclear energy to help meet the world’s energy requirements.” Summit Communiqué Stresses Agreement on Economic Cooperation, Expanded Trade, 16 INT'L LEGAL MATERIALS 724, 724 (1977). “Our objective is to meet the world’s energy needs and to make peaceful use of nuclear energy widely available ....” Id. at 727. Although in recent years nuclear industry growth has slowed dramatically in the United States, it has continued to develop rapidly in
means that more nuclear power plants are operating around the globe, more spent nuclear fuel is being transported and reprocessed, more nuclear-powered ships are plying the oceans, and more nuclear wastes are being transported, stored, and disposed.

All of these activities result in the delivery of energy to millions of people. Unfortunately, all of these activities also carry enormous risks of radioactive pollution with resultant harm to persons and property. An accident at a nuclear power plant or at a reprocessing facility, such as a fire, an earthquake, or a cooling system failure, could release highly radioactive materials into the environment. A transportation accident, such as a truck crash, a train wreck, or a ship collision, could break open containers of highly radioactive spent fuel or radioactive waste, releasing those materials into the environment. A collision involving a nuclear-powered ship could break open the nuclear reactor on board, releasing its radioactive contents into the air and sea. A poorly planned or poorly supervised nuclear energy program could result in intentional releases of radioactivity from nuclear power plants and intentional dumping of inadequately contained or even uncontained nuclear wastes into the sea.

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3 "Spent fuel" is nuclear fuel which has been used over a period of months in a nuclear reactor to produce energy and is no longer useful for producing energy.

4 After several months of operation, a typical, large nuclear power plant may contain about one-third of a ton of gaseous or volatile, highly radioactive materials. UNION OF CONCERNED SCIENTISTS, THE RISKS OF NUCLEAR POWER REACTORS 1 (R. Hubbard & G. Minor eds. 1977). At reprocessing plants highly radioactive spent fuel is removed from its protective containers and passed through several operations to separate wastes from usable fuel materials. See generally id. for a thorough treatment of the probabilities of accidents occurring at these facilities.

5 "The possible damages which might result from accidents involving vessels propelled by nuclear reactors stagger the imagination . . . . The risks, even in proportion to the significant gains from nuclear ships, are well beyond the limits acceptable to the private sector.” A. FRYE, THE HAZARDS OF ATOMIC WASTES—PERSPECTIVES AND PROPOSALS ON OCEANIC DISPOSAL 29 (1962).

6 "Most [nuclear power plant] reactors routinely release effluents containing small quantities of radioactivity into the aquatic environment, and there have been incidents of accidental uncontrolled releases." R. SHINN, THE INTERNATIONAL POLITICS OF MARINE POLLUTION CONTROL 18 (1974). "The United Kingdom has continued to release liquid wastes [from its nuclear power plants], despite the possible danger of accidental discharges, from its three-mile-long pipeline at Windscale, Calder, into the Irish Sea, basing release limits on the average consumption of Welsh laver bread made of contaminated seaweed." Id. at 30.

7 From 1946 to 1971, the United States allowed low level radioactive wastes to be dumped at sea with little administrative or technical control. Most of the waste was contained in 55-gallon drums, many without tops, which were weighted with concrete and sunk. Id. at 21-22. No one is sure that the drums have not burst from the intense pressures existing at the lower levels of the ocean or from striking the ocean floor. A. FRYE, supra note 5, at 34. Nuclear-powered ships are still allowed to inject uncontained low level wastes into the
Since radioactive pollution can travel through the air, infiltrate waterways, or disperse in the sea, opportunities abound for persons of one State to suffer radiation damage caused by the activities of persons of another State (transnational radiation damage). For example, a power plant accident in one State might release highly radioactive gases into the air which could travel over the State’s border, injuring persons in an adjoining country. Operators of a power plant might intentionally release low-level wastes into the nearby sea (such as is done by power plant operators in the United Kingdom) and injure persons of another nationality who consume plant life harvested from the area. If consumers subsequently refuse to use that plant life, harvesters and food manufacturers from several countries may suffer business losses. If a nuclear power company or disposal operation carelessly dumps nuclear wastes at sea, several marine organisms might become contaminated. This could result in radioactively contaminated fish, which could injure consumers of several nations and in turn could hurt the fishing industries in many nations. The radioactivity could also damage organisms which occupy a low position in the marine food chain, reducing the number of higher ocean organisms, namely fish, and subsequently damaging the fishing industries. An accidental release of radioactive material on the high seas could prevent the passage of ships from all nations through the area, and could interfere with the laying and repair of submarine cables and with mining or drill-

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* The English base the allowable limit of nuclear waste disposal in the Irish Sea upon an estimate of the average consumption of the locally harvested seaweed, R. Shinn, supra note 6, at 30, and also, of course, upon an estimate of the amount of radioactivity to which a human can safely be exposed. But periodically, experts in nuclear science have revised the recommended permissible levels of human exposure to radiation. These levels “have displayed a consistent downward trend. As knowledge has advanced, there has grown the conviction that the human organism can tolerate less radiation than had originally been thought.” A. Frye, supra note 5, at 5. “There is increasing evidence, not yet wholly confirmed, that low levels of radiation may induce cancer more readily than is now believed.” Letter from the Union of Concerned Scientists to sponsors (Feb. 1978)(Cambridge, Massachusetts). Thus, the English practice, although presently believed to be safe, may eventually be shown to have harmed consumers of the seaweed.

* Each year there is a greater dependence upon the sea as a source of food. L. Hydeman & W. Berman, International Control of Nuclear Maritime Activities 207 (1960); S. Pike & A. Spilhaus, Marine Resources 2, 3 (1962). Tests have revealed that many sea creatures concentrate radioactive elements in their bodies by factors of up to 100,000 times the amounts of the radioactive elements in the waters around them. A. Frye, supra note 5, at 13. The danger to consumers of contaminated fish is aggravated by the fact that very small amounts of radioactivity, which would be harmless if exposed to the body externally, may do severe damage if taken into the body. Id. For a discussion of the different types of radioactive products associated with nuclear energy and their relative dangers, see Note, A Survey of the United States Treaties and Agreements Involving the Peaceful Uses of Nuclear Energy, 10 Case W. Res. J. Int’l L. 671, 678-81, 702 (1978).
Such obvious dangers of nuclear pollution are compounded by the fact that nuclear wastes remain radioactive for 600 to 250,000 years.\(^{11}\)

What can citizens of one State do to protect themselves against radiation damage caused by activities in another State? What legal mechanisms exist for recovering monetary compensation for harm suffered? More important, what mechanisms exist for preventing the harm which threatens to result from the activities of members of another State? The law of neighborly relations, an internationally accepted principle, dictates that a person may not use his property so as to injure his neighbor's.\(^{12}\) Furthermore, several international agreements and conventions are presently in effect which give substance to this rule in the form of anti-pollution agreements and liability agreements. But it is evident that this general rule of international law and the international agreements promulgated thereunder do not provide private parties with an effective means of protecting themselves against transnational radiation pollution. Relief under general international law and under these agreements, if at all available to a private party, usually must be pursued through ineffi-

\(^{10}\) As time goes on, it appears that more nuclear wastes will be dumped at sea. Many European countries have little or no land disposal sites and have turned to ocean disposal as the solution to their nuclear waste problems. R. Shin, supra note 6, at 21.


\(^{12}\) This principle also prohibits the pollution of international waters when it might have harmful effects in the territory of another State. Bramsen, Transnational Pollution and International Law, in Problems in Transfrontier Pollution 257, 261 (1974). The law of neighborly relations was invoked in the famous Trail Smelter Case (United States v. Canada), 3 R. Int'l Arb. Awards 1905 (1941) reprinted in 35 Am. J. Int'l L. 684 (1941), and in the Corfu Channel Case, [1949] I.C.J. 22. It is recognized by many international jurists and legal scholars as a general principle of international law. Bramsen, supra, at 260. The most notable proof that the law of neighborly relations is accepted in the international sphere is the Declaration on the Human Environment, made by the United Nations Conference held in Stockholm in June, 1972. Principle 21 of the Declaration states:

21. States [have], in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control [do] not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

cient diplomatic channels or expensive judicial proceedings in a foreign State. A better means of private party protection would be the use of arbitration, supervised by an international body staffed by experts in the field of transnational radiation pollution.

This article will examine the effects of the law of neighborly relations and the protections afforded private parties under the above-mentioned conventions and agreements. A proposal will then be set forth for the use of arbitration as a means of private party protection against transnational radiation pollution.

II. THE LAW OF NEIGHBORLY RELATIONS AND INTERNATIONAL AGREEMENTS PROMULGATED UNDER THE LAW

A. The Law of Neighborly Relations

The law of neighborly relations is embodied in the maxim: *sic utere tuo ut alienum non laedas.* (Use your own property so as not to injure your neighbor's.) This is a well-accepted principle of international law. But standing alone, the maxim affords little practical protection to private citizens who seek to prevent or to obtain reparation for transnational radiation pollution. Following are discussions of the various means with which a person might seek to protect himself under the general international principle of neighborly relations.

1. Suits brought in one country against foreign states or foreign citizens

A person may bring a suit in his own country against a foreign State or a foreign citizen, but he has no guarantee that a resultant judgment will be enforced in the other country. A State which has lost a suit or defaulted might very well claim sovereign immunity and refuse to satisfy the judgment rendered against it. A foreign citizen who has lost a suit

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14 Suits brought in the United States against foreign countries are automatically backed by United States foreign policy, codified in the Foreign Sovereign Immunities Act of 1976, 28 U.S.C. §§ 1330, 1332, 1391, 1441, 1446, 1602 - 1611 (1976). Section 1602 of that Act states that "[u]nder international law, states are not immune from the jurisdiction of foreign courts insofar as their commercial activities are concerned . . . ." In the section 1603(d) definition of a commercial activity, the Act states: "The commercial character of an activity shall be determined by reference to the nature of the course or conduct or particular transaction or act, rather than by reference to its purpose." This description presumably covers the activities related to nuclear power plants operated by foreign States, and also would include the operation of State-owned nuclear powered vessels being used for commercial purposes. Under section 1605(a)(2), a foreign State shall not be immune from the jurisdiction of Federal or State courts in the United States in any case "in which the action is based
might be able to avoid satisfying the resultant judgment by taking advantage of differences between the laws of the two countries involved. Enforcement of such suits must, as a practical matter, be left primarily to authorities in the offender's country. The authorities in most civil and common law countries will not enforce foreign court judgments against their citizens unless the judgments have a basis in the laws of the State in which they are to be enforced. Such laws may not exist. Moreover, although the authorities of many countries accept the validity of monetary judgments awarded against their citizens in a foreign court of law, many feel that injunctions issued by foreign courts constitute interference with the sovereignty of the State. Even if all of the aforementioned obstacles can be overcome, a civil trial will almost inevitably be expensive and time consuming for the plaintiff.

2. Participation in administrative proceedings or litigation in a foreign country

Some of the problems of domestic court litigation against foreign parties could be circumvented by bringing suit against a polluter in the polluter's own country. Even better, from the plaintiff's standpoint, would be participation in the foreign State's administrative proceedings which are held prior to licensing a nuclear power plant or other poten...
tially polluting activity (and, of course, before radiation pollution occurs). Unfortunately, many States will not permit foreigners access to the States' administrative and judicial proceedings.\textsuperscript{19}

Several international bodies, such as the Council of Europe and the Organisation for Economic Co-Operation and Development (OECD), have recommended that such access be granted to foreign parties who have been or may be injured by transfrontier pollution.\textsuperscript{20} The OECD specifically recommends\textsuperscript{21} that countries of origin\textsuperscript{22} ensure that any person who is threatened with or has suffered transfrontier pollution damage receives equivalent treatment to that afforded a complainant in a case of domestic pollution.\textsuperscript{23} Equivalent treatment, according to the OECD, includes the right to participate in administrative and judicial proceedings in order to obtain injunctive or monetary relief.\textsuperscript{24} If the domestic law of a country permits non profit groups, such as environmental defense organizations, to commence proceedings to safeguard environmental interests, the OECD recommends that similar foreign groups should be allowed the same right.\textsuperscript{25} Similarly, the OECD recommends, equivalent rights should be given to public authorities in foreign countries.\textsuperscript{26}

Such a regime of equal access and nondiscrimination has been instituted to some extent in parts of Europe and in North America.\textsuperscript{27} But worldwide, this method of transfrontier radiation pollution protection lacks the consistency and predictability necessary to ensure private party redress.\textsuperscript{28}

It is important to note that a suit brought in a foreign State would almost inevitably be more expensive and more time consuming than a suit instituted domestically. Domestic lawyers would probably have to spend more time than usual researching the relevant foreign law. Domestic lawyers might also be likely to execute the formal steps required in the foreign suit slowly and inefficiently because of an unfamiliarity with the foreign system. Foreign lawyers may need to be hired to represent the plaintiff in the actual proceedings, along with interpreters and transla-
tors. Finally, despite the Council of Europe and OECD recommendations, a foreign court is likely to be biased in favor of the local parties and interests involved in the suit.  

3. Suits brought by a government before the international court of justice

A person might succeed in convincing his government to bring an action before the International Court of Justice (ICJ) against another government which is causing transnational pollution, or whose citizens are doing so. But the difficulties of convincing one's national government to bring such a suit would bar any but the most extreme cases from obtaining government representation.

Even if a national government were to pursue a transnational pollution case on behalf of one of its citizens, the case would likely fail. Although the ICJ has recognized the validity of the principle of neighborly relations in international law, cases brought before the Court solely upon the basis of this general principle usually do not meet with success. The ICJ seems to require that a State have a "direct interest" in the outcome of the case before the State may institute proceedings. For example, Australia and New Zealand attempted to bring a suit against France in 1973, to stop France from conducting atmospheric nuclear tests in the South Pacific. The Court avoided deciding the issue in the case by stating that since France had publicly announced that it would cease further atmospheric tests, no decision was required. The dissenting opinion of Judge de Castro bodes ill for similar cases in the future. The Judge stated: "The Applicant has no legal title authorizing it to act as a spokesman for the international community and ask the Court to condemn France's conduct." Bo Johnson, then Associate Professor of Interna-

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29 In a number of countries, courts are not very independent of their governments or they display judicial prejudices in favor of their governments. Lecture by Henry T. King, Jr. & Edwin R. Teple, Case Western Reserve University School of Law, (Jan. 30, 1978).

30 A private person may not be a party to a suit before the ICJ. See the Statute of the International Court of Justice, June 26, 1945, art. 34, 59 Stat. 1055, T.S. No. 993, which states, "1. Only states may be parties in cases before the Court."

31 There would almost certainly be practical and procedural difficulties involved in meeting with high government officials and instigating a government suit before the ICJ. Moreover, a government might refuse to pursue some meritorious suits because of diplomatic considerations.


33 Id. at 17.

34 Id. at 18. In other words, if Judge de Castro's view prevails in the future, the ICJ will not hear those suits involving potential transnational pollution which are brought on the basis that the pollution violates the law of neighborly relations, and the complainant is within the area of the pollution.
tional Law at the University of Stockholm, commented that "[t]his obvious denial of actio popularis in the environmental field will make it extremely difficult for states to go before the Court with disputes of this nature unless the interpretation of specific treaties is involved. At this stage general international law does not afford nature much protection."38

It would, therefore, be almost impossible for a private party to protect itself against transnational radiation pollution through a government-level suit before the ICJ. Even if such a suit were to proceed successfully, the process would likely take several years to complete.36 Furthermore, such a suit would necessarily be removed from the control of the complaining party.37

4. Arbitration by governments or governmental bodies

A person suffering from or fearing radiation damage might utilize the same domestic channels which would be followed when urging his government to initiate a suit before the ICJ, but with the intent of instituting arbitration proceedings. The previously discussed difficulties of inducing government officials to pursue a complaint against another country would, of course, be encountered.38 Furthermore, it appears that a country does not have the power to compel another country to arbitrate a dispute unless a treaty or agreement concerning the matter in question has previously been concluded between the countries. For example, the Trail Smelter Arbitration39 between the State of Washington, in the United States, and the Province of British Columbia, in Canada, apparently was possible only because an earlier boundary pact between the United States and Canada contained provisions dealing with the subject matter of the dispute.40

Government-initiated arbitration would be less time consuming than would pursuit of a case before the ICJ.41 However, the arbitration process

38 Id.
39 For example, Ethiopia and Liberia brought suit, in 1960, against South Africa alleging that South Africa's policy of apartheid violated the United Nations Mandate. South West Africa Cases, I.C.J. Pleadings (1968). The South West Africa Cases were before the ICJ for six years before a decision was rendered. It is interesting to note that the cases were dismissed on the ground that the claimants had not established a sufficient legal right or interest in the subject matter of their claims to bring the suit. See Eubanks, International Arbitration in the Political Sphere, 26 ARB. J. 129, 139, 139 n.13 (1971).
40 Since only States may be parties in proceedings before the ICJ (see Statute of ICJ, supra note 30), the private party who initiated the process leading to the suit would not be represented as an individual before the Court.
41 A. FRYE, supra note 5, at 23.
42 The Ram of Kutch dispute between India and Pakistan, for example, was decided by
would still entail the above-mentioned drawbacks: the difficulty of initiating the proceedings, and the ultimate removal of the case from the individual complainant’s control.

5. Diplomatic negotiations

If a person is injured, particularly if he is one of several citizens similarly affected, he might be able to convince his government to pursue diplomatic channels and negotiate a monetary settlement with the polluting country. Initial difficulties at the domestic level, such as reaching high-level officials and convincing them that the complaint is meritorious, would have to be surmounted. Additionally, damage claims which are to be pursued through diplomatic channels are usually reduced to one lump sum by the complainants’ government (presettlement) before the government will press a claim against the other country. This will almost inevitably involve a compromise to determine the amount due the complainant, prior to beginning the diplomatic negotiations. Furthermore, once the complainant has presettled with his government, the matter will then be removed from the citizen’s direct control.

An example of such a diplomatic settlement is the award made by the United States to the Government of Japan in compensation for injuries suffered by Japanese fishermen from nuclear tests conducted by the United States in the Marshall Islands. Diplomatic negotiations between the two Governments culminated in an exchange of notes in which the United States agreed to pay Japan the lump sum of two million dollars, to be distributed according to the Japanese Government’s discretion. No mention was made in the notes about future precautions to be observed by the United States with regard to nuclear tests. The notes did specifically state that “legal liability” was not addressed in the negotiations, and therefore was not to be inferred from the monetary payment. Thus, the diplomatic settlement compensated the fishermen for their radiation pollution injuries, but created neither legal precedent nor obligations with regard to the safety of future actions by the United States. This example
demonstrates that even if diplomatic negotiations are completed, full protection for a citizen against transnational radiation pollution may not be provided.

6. Summary

The law of neighborly relations is considered a valid principle in international law, yet, as a practical matter, in most situations this law merely creates a right without a remedy. Decisions rendered on the basis of the law in domestically adjudicated suits against foreign citizens or States might not be enforced, and litigation or participation in administrative proceedings in the polluting country under the auspices of the principle may not be allowed. If allowed, such proceedings would probably entail many expenses and difficulties caused by unfamiliarity with the foreign system. Government suits brought before the ICJ on the basis of the law of neighborly relations have failed in the past. Government-initiated arbitration seems possible only when an already extant treaty between the nations involved covers the matter in dispute. Diplomatic negotiations fail to set precedents or articulate obligations for the future, and may result in inadequate compensation for the injured parties. In addition, government-level actions (suits before the ICJ, arbitration, and diplomatic negotiations) necessarily involve a loss of direct control over the case by the individual complainant. Furthermore, a government will pursue such actions only in a very small minority of severe cases of transnational radiation pollution.

It is clear that, as a practical matter, in order to create a remedy for violation of the right, an international agreement embodying the law of neighborly relations presently is required. Two authors have commented on this fact: "while an understanding of the rights of States is important, the existence of a legal right in a State to protect its interests may not obviate the need for international agreements."

B. International Agreements Promulgated Under the Law of Neighborly Relations

Two kinds of international agreements deal with the problems of transnational radiation pollution: anti-pollution conventions and liability agreements. These will be examined to determine what legal duties they create, and whether they provide useful means with which the private citizen may protect himself against transnational radiation pollution.

\[46\] L. Hydemann & W. Berman, supra note 9, at 11.
1. Anti-pollution conventions

Article 25 of the Convention on the High Seas, done in 1958, states that every State shall take measures to prevent pollution of the seas from the dumping of radioactive waste. This provision creates a duty on the part of signatory States to try to prevent radioactive pollution of the seas, and thus constitutes more a statement of intent than an explicit duty.

The Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water contains more definite duties than does the Convention on the High Seas. One of the purposes of the Nuclear Test Ban Treaty is to put an end to the contamination of the environment by radioactive substances released in nuclear weapon tests. In Article I, paragraph 1 of the Nuclear Test Ban Treaty, the parties agree:

- to prohibit, to prevent and not to carry out any nuclear weapon test explosion, or any other nuclear explosion . . . (a) in the atmosphere; beyond its limits, including outer space; or underwater, including territorial waters or high seas; or (b) in any other environment if such explosion causes radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control such explosion is conducted.

Two anti-dumping conventions deal with the intentional disposal of radioactive wastes in the sea. The Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft states, in Article 14, that the contracting parties (signatory States) pledge to promote measures concerning the protection of the marine environment against pollution caused by radioactive materials. This provision, like the statement in Article 25 of the Convention on the High Seas, is more a statement of intent than an agreement to assume a legal duty. The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Mat-

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49 Id. Preamble.
50 It should be noted that nuclear weapons testing continues to contribute to radioactive pollution of the ocean despite the Nuclear Test Ban Treaty. France and the People's Republic of China have not signed the Treaty and continue to conduct atmospheric testing over the oceans. They defend this testing on the grounds that such testing is reasonable given a State's need to protect its own security by developing weapons. R. SHINN, supra note 6, at 69.
PRIVATE PARTY PROTECTION

52 sets forth three classes of materials which the signatory States agree to treat in specified ways. The first class of materials (the "blacklist") includes high level radioactive waste which may not be dumped at all. The other two classes include low level radioactive waste which may be dumped under special or general permits issued by the national authorities having jurisdiction over the vessels performing the dumping operations.53

Neither the Convention on the High Seas nor the Nuclear Test Ban Treaty create rights of action for private parties. They are subject only to the usual methods of treaty enforcement between States: diplomatic negotiations, suits before the ICJ, government-level arbitration, and sanctions by international bodies, such as expulsion from the United Nations. Private parties, therefore, do not have any individually enforceable rights under these treaties. Similarly, the anti-dumping conventions require that violations of the conventions shall be reported to governmental authorities and dealt with by them. Thus, although these anti-pollution conventions create a few specific duties concerning radiation pollution prevention, they do not provide any means for private party enforcement of these duties.

2. Liability agreements

The Convention on the Liability of Operators of Nuclear Ships54 establishes that nuclear ship operators shall be absolutely liable for any nuclear damage caused by a nuclear incident involving the nuclear fuel of, or radioactive products or waste produced in their ships.55 This liability is limited to 1500 million francs per incident exclusive of interest and costs awarded by a court.56 Rights of compensation under the Convention re-

54 Convention on the Liability of Operators of Nuclear Ships, done May 25, 1962, reprinted in 57 Am. J. Int'l L. 268 (1963). This Convention was signed by 14 States. The United States, Canada, the United Kingdom, the Soviet Union, France, and Germany were not among the signatories.
55 An "operator" is the person authorized to operate a nuclear ship, or, if a contracting State operates a nuclear ship, that State. Id. art. I ¶ 4, at 268. "Nuclear damage" is defined as loss of life or personal injury and loss or damage to property resulting from the radioactive properties or the combination of radioactive and other hazardous properties of nuclear fuel or of radioactive products or waste. Id. ¶ 7, at 268.
56 Id. art. III ¶ 1, at 270. A "franc" is defined in art. III ¶ 4 as a unit of account constituted by 65 ½ milligrams of gold of millesimal fineness 900. If a nuclear incident involves an unlicensed nuclear ship flying the flag of a signatory State, the shipowner will have absolute, unlimited liability for damages. Id. art. XV ¶ 2, at 275.
main actionable for ten years after the nuclear incident, or, if national law so establishes, for three years after the date upon which the claimant knew or should have known of the damage and its cause.\textsuperscript{57} A claimant may bring suit either before the courts of the State in which the operator is licensed or before the courts of the State in whose territory nuclear damage was suffered.\textsuperscript{58} Sovereign immunity is waived for such actions brought under the Convention.\textsuperscript{59} Signatory States explicitly agree to enforce final judgments rendered in such cases brought in other signatory States.\textsuperscript{60} Further, the States agree not to discriminate in such actions on the basis of nationality, domicile, or residence.\textsuperscript{61}

The Convention on the Liability of Operators of Nuclear Ships, in short, creates a privately enforceable right to compensation for damage suffered from incidents involving nuclear ships.\textsuperscript{62} However, a suit brought under the Convention might have to be litigated in a State other than the claimant's own State, since actions are allowed only in the State which licensed the nuclear ship or in the State in whose territory the damage was suffered. Such a suit would necessarily entail greater expense and delay than would a domestic suit, and might possibly be tainted by judicial bias, as previously discussed. Also, since many countries which license nuclear ships have not signed the Convention,\textsuperscript{63} citizens of several nations derive absolutely no rights under the Convention.

The Paris Convention on Third Party Liability in the Field of Nuclear Energy\textsuperscript{64} creates individually enforceable rights for persons injured by nuclear incidents originating at land-based nuclear power plants. These rights of action are virtually identical to those created for individuals under the Convention on the Liability of Operators of Nuclear Ships, discussed above.\textsuperscript{65} The Convention Supplementary to the Paris Convention\textsuperscript{66} extends these rights of action to cases involving damage suffered on

\textsuperscript{57} Id. art. V ¶ 1, 3, at 270-71.
\textsuperscript{58} Id. art. X, at 272.
\textsuperscript{59} Id.
\textsuperscript{60} Id. art. XI ¶ 4, at 273.
\textsuperscript{61} Id. art. XII ¶ 3, at 274.
\textsuperscript{62} The Convention never defines the word "claimant." I have assumed that "claimant" has the same definition as "person." "Person" is defined as any individual or partnership, or any public or private body whether corporate or not, including a State or any of its constituent subdivisions. Id. art. I ¶ 3, at 268.
\textsuperscript{63} See Convention on the Liability of Operators of Nuclear Ships, supra note 54.
\textsuperscript{64} Paris Convention on Third Party Liability in the Field of Nuclear Energy (Paris Convention), adopted July 29, 1960, reprinted in J. Barros & D. Johnston, The International Law of Pollution 422 (1974). This Convention has been signed by 16 States, most of which are European.
\textsuperscript{65} The pertinent provisions of the Paris Convention are arts. 1, 3, 7(b) & (g), 8(a), 11, 13(a), (e), & (f). Id. at 422-31.
\textsuperscript{66} Convention Supplementary to the Paris Convention of 29th July, 1960, on Third
or over the high seas, for which an operator of a nuclear installation is liable under the Paris Convention.\footnote{Id. art. 2(a)(ii). Operators of nuclear installations are liable for damage caused by nuclear incidents involving nuclear substances in carriage from the nuclear installations or in storage. Paris Convention, \textit{supra} note 64, at art. 4, at 424.}

The rights created under the Paris Convention and its Supplement carry, of course, the same drawbacks discussed in connection with the Convention on the Liability of Operators of Nuclear Ships. Furthermore, the rights created under the Paris Convention accrue almost exclusively to citizens of European countries, since only a few countries outside of Europe have signed the Convention.

The Vienna Convention on Civil Liability for Nuclear Damage\footnote{Vienna Convention on Civil Liability for Nuclear Damage, \textit{opened for signature} May 29, 1963, \textit{reprinted in} J. Barros & D. Johnston, \textit{supra} note 64, at 445; 2 Int'l Legal Materials 727 (1963); IAEA Document CN-12/46 (May 20, 1963). As of May 22, 1963, this Convention had been signed by China, Colombia, Lebanon, the Philippines, and Yugoslavia.} is almost identical to the Paris Convention and, therefore, will not be examined further.

The Convention on the Protection of the Environment Between Denmark, Finland, Norway and Sweden\footnote{Convention on the Protection of the Environment Between Denmark, Finland, Norway and Sweden (Nordic Environmental Protection Convention), \textit{done} Feb. 19, 1974, \textit{reprinted in} United Nations, National Legislation and Treaties Relating to the Law of the Sea 397, U.N. Doc. ST/LEG/SER.B/18 (1976).} is a liability agreement in substance, if not in name. This Convention guarantees equal access and non-discrimination to citizens of any signatory State bringing an action in another signatory State to prevent or seek compensation for environmental damage.\footnote{Id. art. 3, at 397-98.} The Convention closely parallels the format recommended by the OECD.\footnote{The relevant provisions of the Convention are id. arts. 3, 4, 11, 12, at 397-99. See section IIA2 in this article for a discussion of the OECD recommendations.} Such rights of action necessarily imply underlying liability on the part of polluters, including persons causing transnational radiation pollution. This Convention guarantees to a private party the right to bring suit or participate in other formal proceedings in a foreign State when pollution (including radiation pollution) has emanated from operations in that State, or when pollution is threatened. However, as previously discussed, litigation or participation in other formal proceedings in a foreign State would almost inevitably involve more time and expense than would domestic proceedings.\footnote{Domestic litigation, as previously discussed, is almost always a time-consuming and expensive undertaking.}

The multi-party liability agreements, in general, allow a citizen of
any signatory State to bring suit in any other signatory State. Except for
the Convention on the Protection of the Environment Between Denmark,
Finland, Norway and Sweden, these agreements address only the right to
recover damages after injury, and not the right to enjoin harmful or poten-
tially harmful activities. The suits which are allowed will almost al-
ways be expensive and time consuming. Furthermore, several nations par-
ticipating in the activities contemplated by these agreements have not
signed the conventions. Thus, citizens of several nations derive no bene-
fits whatsoever from the agreements.

3. Summary

The international agreements which incorporate the law of neigh-
borly relations confer little practical benefit upon private parties wishing
to protect themselves against transnational radiation pollution. The anti-
pollution conventions create a duty not to cause or allow radiation pollu-
tion, but they do not create a private right to enforce that duty or to
collect damages for its breach. The liability agreements, in contrast, allow
private parties access to formal proceedings in foreign signatory States in
order to protect their rights against transnational radiation pollution.
Under all but one of the liability agreements, however, it is doubtful
whether a private party may enjoin a harmful activity before it occurs.
Furthermore, several States involved in nuclear activities have not signed
the liability agreements, thus denying to all of the citizens of those States
the protections which are afforded by the agreements.

III. Private Party Protection Against Transnational Radiation
Pollution Through Compulsory Arbitration: A Proposal and
Justification

A. The Proposal

In order to effectively protect himself from transnational radiation
pollution, a person must have the legal right to enjoin potentially harmful
activities and to collect damages for harm already suffered. That legal
right should be enforceable through straightforward, efficient, and inex-
pensive proceedings. Further, such proceedings should be conducted by a
neutral body comprised of experts in the fields of nuclear technology, ra-
diation pollution, and international law.

As discussed above, general international law provides avenues by
which a private party may protect himself from transnational radiation
damage. Unfortunately, these avenues are often difficult to traverse; they
are time consuming and expensive, and often result in a dead-end; e.g.,
when one's government refuses to press a case against another govern-
ment for diplomatic reasons. At best, the established route results in a
case which cannot be controlled by the private party complainant.

The international agreements which incorporate the law of neighborly relations provide little more protection to the private citizen than do general principles of international law. Many agreements do not create privately enforceable rights. Those agreements which do recognize private rights of action lack several important signatory States. Moreover, citizens of nations which have signed these latter agreements are generally given only the right to bring lawsuits in foreign countries. As previously discussed, such lawsuits are inefficient, expensive, and awkward for persons unfamiliar with the foreign legal systems involved.

The best method of private party protection against transnational radiation pollution would be international arbitration, conducted under the auspices of the International Atomic Energy Agency (IAEA). In order to implement this program the IAEA Statute\(^\text{73}\) should be amended to: (1) empower the IAEA to act as an arbitral body in cases of actual or potential transnational radiation pollution involving citizens of States who are signatories to the IAEA Statute; (2) authorize the IAEA to compel arbitration among involved parties when at least one party requests arbitration; and (3) guarantee that signatory States will enforce the judgments rendered in such IAEA arbitration cases, whether the judgments are monetary or injunctive.\(^\text{74}\)

\(^{73}\) Statute of the IAEA, opened for signature Oct. 26, 1956, 8 U.S.T. 1093, T.I.A.S. No. 3873, 276 U.N.T.S. 3; Amendment to the Statute of the IAEA, approved Oct. 4, 1961, 14 U.S.T. 135, T.I.A.S. No. 5284; Amendment to the Statute of the IAEA, approved Sept. 28, 1970, 24 U.S.T. 1637, T.I.A.S. No. 7668. At present, the IAEA operates under its own initiative only as an information-gathering and advisory body. (The IAEA may submit advisory briefs under its own initiative to the ICJ. See the Statute of the International Court of Justice, supra note 30, art. 34 \(\text{\(\num{2}\)}\).) The IAEA may, upon the request of member countries, apply safeguards against the diversion of nuclear materials to weapons manufacture or may apply safety standards to nuclear activities. See the Statute of the IAEA, supra, arts. III, VIII, XI, XII. The IAEA's safeguarding function has been extensively requested; its application of safety standards has not. See Note, A Survey of the United States Treaties and Agreements Involving the Peaceful Uses of Nuclear Energy, supra note 9, at 691. As of 1977, 109 countries had become parties to the IAEA Statute. See U.S. DEP'T OF STATE, PUB. No. 8891, TREATIES IN FORCE 262-63 (1977).

\(^{74}\) One might argue that this third provision is unnecessary since most cases coming before the IAEA would involve commercial nuclear facilities or commercial nuclear ships and would presumably fall under the Convention on the Recognition and Enforcement of Foreign Arbitral Awards, done June 10, 1958, 330 U.N.T.S. 3, codified at 9 U.S.C. §§ 201-08 (1970) [hereinafter 1958 convention]. However, the 1958 Convention might be interpreted as applying only to differences arising out of legal relationships which are considered commercial. Id. art. 1. Even if the 1958 Convention might have broader applications than this construction contemplates, it should be noted that more than one-third of the 1958 Convention's signatories have explicitly limited the application of the 1958 Convention to just such a construction. See the declarations and reservations made by the 1958 Convention's signatories, reprinted in UNITED NATIONS, UNITED NATIONS MULTILATERAL TREATIES 522 (1977). The cases of the type discussed in this article would not normally arise out of commercial
The proposed arbitration program should encompass the following elements. (1) Each signatory State would establish an agency or organization to educate the public about the IAEA program and to investigate parties’ complaints. A case could be brought before the IAEA for arbitration only with the approval of the State organization, which would provide assistance in the initial phases of such a case. The State organization would also be obligated under the IAEA Statute amendments to bring suit against a citizen who refused to cooperate in arbitral proceedings after being called upon to do so by the IAEA. (2) The parties to the dispute would agree on a language to be used in the arbitration. If no such agreement could be reached within a reasonable period of time, the IAEA would determine the language to be used. (3) Each party to the dispute would choose one arbitrator from a list to be provided by the IAEA. The selected arbitrators would together choose one additional arbitrator from the same list. (4) The actual place of arbitration would be decided upon by the arbitrators, with the aim of making the location as convenient as possible for all parties concerned. (5) The governing law in the proceedings would consist of the law of neighborly relations and other basic principles of international law. (6) Rules of procedure established by the IAEA would be uniform, but would incorporate as much flexibility as possible. The imposition of uniform rules upon the cases before the IAEA would save time and expense. Such rules would not be as rigid as the procedural rules followed in court proceedings. The parties involved in these arbitral proceedings would be given ample opportunity to orally present their views and interests, through an interpreter if necessary. If a majority of the arbitrators felt it necessary, experts in other fields, such as economics, marine biology, statistics and urban management would be called upon to testify during the proceedings. Costs would be defrayed by an IAEA-managed fund to which all signatory States would contribute.

relationships; rather, they would arise out of legal relationships (by virtue of the law of neighborly relations) involving commercial enterprises but not usually involving commercial activities between the involved parties.

76 The arbitrators would have to avoid choosing arbitral locations where local laws require that the law of the place of arbitration governs the substance of the dispute or the rules of the arbitral proceedings. See Holtzmann, The Importance of Choosing the Right Place to Arbitrate an International Case, in Symposium — Private Investors Abroad: Problems and Solutions in International Business in 1976 183, 193-94, 204, 206 (V. Cameron ed. 1977).

75 One expert in the field of transnational pollution has suggested that an international commission of experts ought to levy emission taxes on residuals released into the environment. This would result in reasonable sharing of environmental management costs on a worldwide basis, and would create a fund for use in programs such as the one proposed in this article. See Cumberland, Establishment of International Environmental Standards — Some Economic and Related Aspects, in Problems in Transfrontier Pollution 214 (1974). The areas of concern in detailing this arbitration proposal were tailored to satisfy
B. The Justification

Private party arbitration under the IAEA, as proposed above, would provide a uniform, straightforward method of private party protection against transnational radiation pollution throughout the world. Such a system, implemented by treaty, would codify a private person's right to protect himself against transnational radiation pollution. Since the system would be administered by an international body, no party could gain an unfair advantage over another due to greater familiarity with the system or to court bias. An IAEA arbitration also would be less expensive than a lawsuit. Further, such arbitration would remain in the control of the private parties involved, since the parties would choose their arbitrators and would be allowed to present their own cases at the arbitral hearings. Finally, since the arbitration would be conducted by experts in the field, hearings would proceed quickly and judgments would be based upon well-informed and reasonable analyses of the problems involved. Such efficiency would greatly increase an individual's opportunity to prevent the serious, virtually irreparable damage that can result from radiation pollution, before that damage occurs.

In general, arbitration is almost always faster than court proceedings. It has the advantage of being understood by members of divergent legal systems. Arbitration is considered especially useful in technical areas, such as nuclear technology, where knowledgeable arbitrators would reduce the need for the costly, time-consuming use of expert witnesses. Arbitration protects the interests of the parties involved, and provides flexibility while adhering to internationally accepted legal procedures and to fundamental legal principles. Decisions rendered by arbitrators can cover a wide spectrum, from a holding entirely in favor of one side to a
50/50 compromise, so they are likely to be well tailored to the needs of the case under consideration.

IV. CONCLUSION

Individuals who have suffered or who may suffer transnational radiation damage to themselves, their property, or their businesses do not have, as a practical matter, adequately enforceable rights of protection against such damage under general international law or under presently existing treaties. The most progressive and useful system being implemented today to afford such private party protection is a program of equal access to formal proceedings in a foreign State, such as that contemplated by the OECD recommendations. However, "regional organizations [such as national courts] are not appropriate bodies to undertake the primary responsibility for resolving the multinational problems involved [with transnational radiation pollution]." The IAEA should be given the power to resolve these problems.

Private parties ought to be able to protect themselves against transnational radiation pollution by instituting arbitral proceedings under a system administered by the IAEA. Such a system would codify private party rights against transnational radiation pollution, and would provide a straightforward, neutral, inexpensive, and efficient method of enforcing those rights. Authors on the subject have argued that nongovernmental organizations, such as the IAEA, should be given greater authority than they have held in the past. This, say two authors, "is proper in order to allow private parties the right to protect themselves or secure compensation for injuries to their environmental interests."

The injuries which can be suffered from radiation pollution are immense. In addition, worldwide growth of the nuclear industry is increasing the chances of such injuries. The technology involved in the nuclear industry, and involved therefore in radiation pollution cases, is extremely complex. In combination, these factors make the solution of transnational radiation pollution problems both exceedingly difficult and desperately necessary. The solution of these problems should be rendered by an organization which is knowledgeable in both nuclear technology and international law. These solutions should be reached by use of the most straightforward, efficient, and inexpensive means available. The solutions should be reached through private party arbitration under the guidance of the IAEA.

82 Id.
83 L. Hydeman & W. Berman, supra note 9, at 309.