CHERNOBYL'S LEGAL FALLOUT—THE CONVENTION ON EARLY NOTIFICATION OF A NUCLEAR ACCIDENT, (SEPT. 26, 1986, _____ U.S.T. _____, T.I.A.S. NO. _____).

The Convention on Early Notification of a Nuclear Accident opened for signature on September 26, 1986 (at a special session of the International Atomic Energy Agency's[1] (IAEA) General Conference in Vienna).[2] Fifty-one states, including all five states which possess nuclear weapons,[3] signed the Convention on opening day, allowing it to enter into force on October 27, 1986.[4]

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[1] Formed in 1957, the International Atomic Energy Agency (IAEA) is an organization of the United Nations whose purpose is to "accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world." *See* V. LAMM, THE UTILIZATION OF NUCLEAR ENERGY AND INTERNATIONAL LAW 46 (1984). In fulfilling its purpose, the IAEA serves as an exchange center for scientific information, organizes scientific studies and conferences, dispatches experts, supplies and nuclear materials to member states, and coordinates basic and applied research in the field of nuclear energy. *Id.*

Membership in the IAEA is open to all states. Representatives of all members meet annually at the General Conference to discuss matters of relevance to the atomic industry. *See* W. TUNG, INTERNATIONAL ORGANIZATION UNDER THE UNITED NATIONS SYSTEM 124 (1969).

[2] *See Nuclear Safety Convention to Enter into Force*, 1 IAEA NEWSBRIEFS 1 (1986) [hereinafter NEWSBRIEFS]. Delegates from 94 countries and 27 national and international organizations attended the session for a total of 639 delegates. *Id.*

On September 27, 1986 the delegates adopted the Convention on Assistance in the case of Nuclear Accident or Radiological Emergency to facilitate prompt assistance to states in which an accident occurs. *Id.* at 1. This Convention requires states to notify the IAEA of available experts, equipment and other helpful materials, and provides that the IAEA will serve as a center for channeling available information and services. *Id.*

During the special session, the member states also adopted a resolution and final document referring further action on important nuclear safety issues to the IAEA Board of Governors. These other issues include safety information exchanges, protection of nuclear installations against terrorism and armed attack, proposals for an international safety regime, nuclear accident liability and compensation, safety standards, and IAEA programs. *Id.* at 2.

[3] The states possessing nuclear weapons are China, France, the United Kingdom, the United States, and the Soviet Union. *See id.* at 1.

[4] States signing on September 27 were: Afghanistan, Australia, Austria, Belgium, Brazil, Bulgaria, Byelorussian SSR, Canada, Chile, China, Costa Rica, Ivory Coast, Cuba, Czechoslovakia, Denmark, Egypt, Federal Republic of Germany, Finland, France, German Democratic Republic, Greece, Guatemala, Holy See, Hungary, Iceland, Indonesia, Iran, Ireland, Israel, Italy, Lebanon, Liechtenstein, Mexico, Monaco, Morocco, Netherlands, Niger, Norway, Panama, Poland, Portugal, Spain, Sudan, Sweden, Switzerland, Turkey, Ukranian SSR, Soviet Union, United Kingdom,

The Convention, the first of its kind, strengthens cooperation between states concerning the safe use of nuclear energy. It requires states to publicize promptly any information concerning nuclear accidents to minimize the transboundary radiological consequences of such an accident.[5] The Convention applies to nuclear accidents resulting from a broad range of activities, including military and industrial uses of nuclear energy.[6] Its scope is limited, however, in that notification of accidents resulting from the use or testing of nuclear weapons is not mandatory.[7]

The Convention provides that a state must give notice of a nuclear accident, either directly or through the IAEA, to all states which are or may be physically affected as a result of the accident.[8] A state must report the nature, time, and exact location of the accident, along with any other information which could minimize the radiological effects on other states.[9] The Convention also requires that a

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United States and Zimbabwe. *See id.*

Article XIV of the Convention provides that only three binding signatures are needed for the Convention to enter into force 30 days thereafter. Convention on Early Notification of a Nuclear Accident, Sept. 26, 1986, art. 14, ____ U.S.T. ____, T.I.A.S. No. ____ [hereinafter Convention].

[5] *See* Convention, *supra* note 4, at art. 2. The preamble to the Convention sets out the state parties' motivation for the Convention. The preamble provides that the parties are "[c]onvinced of the need for States to provide relevant information about nuclear accidents as early as possible in order that transboundary radiological consequences can be minimized." *Id.* at preamble.

[6] *See id.* at art. 1. Among the facilities to which the Convention refers are: "(a) any nuclear reactor wherever located; (b) any nuclear fuel cycle facility; [and] (c)any radioactive waste management facility." *Id.*

[7] *See* NEWSBRIEFS, *supra* note 2, at 1. The United States, the Soviet Union, the United Kingdom, China, and France, however, all expressed an intention to voluntarily notify in the event of an accident while testing nuclear weapons. *See* Record of Final Draft of Convention on Early Notification, Annex V [hereinafter Annex V]. Consequently, the drafters added article 3 to the Convention which provides that states may notify in the event of any nuclear accident not covered by the Convention. Convention, *supra* note 4, at art. 3.

[8] Convention, *supra* note 4, at art. 2, para. a. If a state notifies another state directly, it also must provide this information to the IAEA along with a list of its authorities designated to issue and receive the required information. The IAEA is responsible for providing a list of national authorities to state parties and member states. *Id.* at art. 7.

[9] *Id.* at art. 2. The required information includes, among other things: the time, exact location and nature of the accident, the facility or activity involved, the assumed or established cause, the general characteristics of the radioactive release, the off-site protective measures taken, and the predicted behavior of the release over time. For a complete listing, see Convention, *supra* note 4, at art. 5.

state provide supplementary information as it becomes available[10] and, as far as practicable, promptly respond to requests for information by any affected state which is a party to the Convention.[11] States also must designate authorities responsible for issuing and receiving the notification and information mandated by the Convention.[12]

States may resolve any disputes arising out of noncompliance with the Convention by neogtiation, arbitration, or other peaceful means.[13] The Convention, which automatically binds the IAEA's sixty-two member nations,[14] enters into force for each state thirty days after the state expresses consent[15] and will remain open for accession by any competent international organization.[16]

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[10] *Id.* at art. 5, para. 2. Article 5 provides that "[s]uch information shall be supplemented at appropriate intervals by further relevant information on the development of the emergency situation, including its foreseeable or actual termination." *Id.*

[11] *Id.* at art. 6. Article 6 provides that "State[s] . . . shall, as far as reasonably practicable, respond promptly to a request for further information or consultations sought by an affected State Party with a view to minimizing the radiological consequences in that State." *Id.*

[12] *See id.* at art. 7, para. 1. The Convention requires states to inform the IAEA of the authorities it has designated to issue and receive information. State parties also must "promptly inform the Agency [IAEA] of any changes that may occur in the information referred to in paragraph 1." *Id.* at art. 7, para. 2.

[13] *Id.* at art. 11. This Article provides for the resolution of disputes which remain unsettled for more than one year by either arbitration or by decision of the International Court of Justice if requested by any party to the dispute. *Id.* Parties may declare themselves not bound by the specific settlement procedures. Parties, however, are obligated to consult with each other with a view toward peaceful settlement. *Id.* at art. 11, para. 1.

[14] *See IAEA Conference Studies Chernobyl A—Plant Accident*, 46 FACTS ON FILE 634 (1986).

[15] Convention, *supra* note 4, at art. 12, para. 4. Signing a convention authenticates the text, and additionally qualifies the signing state to proceed to ratification. In addition, signing creates a good faith obligation on the part of that state to refrain from acts which would frustrate the objects of the treaty. When the signature is subject to ratification, however, this does not establish consent to be bound or an obligation to ratify. In the United States consent is given by a two-thirds majority of the Senate, and the Convention is then ratified by Presidential signature. *See* I. BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 603 (3d ed. 1979).

[16] Convention, *supra* note 4, at art. 12, para. 5. "Accession . . . occurs when a State which did not sign a treaty, already signed by other States, formally accepts its provisions. Accession may occur before or after the treaty has entered into force." I. BROWNLIE, *supra* note 15, at 604.

The Convention provides that international organizations may accede by deposit of an instrument of accession with the Director General of the IAEA along with a declaration of its competence respecting "negotiation, conclusion, and application of international agreements in matters covered by this Convention." Convention, *supra* note 4, at art. 12, para. 5.

HISTORY

The IAEA called the special session in September, 1986 as a direct response to the Chernobyl nuclear power plant accident in the Soviet Union.[17] The Chernobyl accident began with a chemical explosion as the plant entered into a planned shutdown on April 26, 1986.[18] The world first learned of the accident only after Sweden and Finland detected windblown debris and gases on their radiation monitors.[19] The Soviet Union's failure to promptly inform, not only surrounding states, but its own citizens of the accident caused an outrage in the international community.[20] The Soviets eventually admitted that the

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[17] *See* Wellborn, *Lifting the Lid on Chernobyl Secrets*, U.S. NEWS & WORLD REPORT, Sept. 8, 1986, at 56. "Agency officials admit that if Chernobyl had not taken place, it would have taken years to get members to agree to such rules." *Id.* at 57. Another writer stated that "[t]he Chernobyl accident served as a reminder to many people of the potential danger of nuclear power." Stanfield, *The Nuclear Option*, NATIONAL JOURNAL, July 5, 1986, at 1647.

[18] *Soviets Reveal Delayed Evacuation, Other Details of Nuclear Accident*, CHEMICAL & ENGINEERING NEWS, May 12, 1986, at 4. [hereinafter *Soviets Reveal*]. The Politboro officially attributed the accident to "a series of gross breaches of the reactor operational regulations by workers at the Atomic Power Station." *Text of the Politboro Statement About Chernobyl*, N.Y. Times, July 21, 1986, at A3, col. 1. The destruction of the reactor caused radioactive contamination of about 1,000 square kilometers around the station, and officials estimate that direct losses from the accident amount to about two billion rubles (approximately $2.7 billion dollars). The death toll rose to 28, while at least 203 others have some form of radiation sickness. *Id.* "Scientists at the conference estimate that additional deaths from radiation-induced cancers will number at least 2000 in decades to come. Other researchers predict that cancer deaths over the next 70 years will be much higher—25,000 or more." Wellborn, *supra* note 17, at 56.

Soviet officials reported that 49,000 residents around the damaged plant were evacuated in 1100 buses. The evacuation, which only took two hours and 20 minutes, was delayed for 36 hours after the shut-down because plant officials failed to grasp the severity of the accident. *See Soviets Reveal*, *supra*, at 4. A later report revealed, however, that over 135,000 people evacuated an "18-mile danger zone" around Chernobyl. *See* Wellborn, *supra* note 17, at 56.

[19] *See* Davis, *Disaster Raises New Questions About Fate of Nuclear Energy*, CONG. Q., May 3, 1986 at 964. United States intelligence agencies gathered most of the early information through "closed-door briefings featuring dramatic spy satellite photos of the Chernobyl plant's No. 4 unit with its roof and some walls blown away." *Id.*

[20] *See, e.g.*, McCurdy, *We All Have a Right to Know About Chernobyl*, CHEMICAL WEEK, May 7, 1986 at 3. "At Chernobyl, so far, we have had an essentially complete press blackout in the U.S.S.R. [which] . . . may lead to unwarranted hysteria worldwide as citizens everywhere worry about the inevitable fallout and its potential danger." *Id.* "Every citizen in the world is downwind from Chernobyl. We all deserve more information and cooperation than the U.S.S.R. has so far been willing to yield." *Id.*

accident had occurred but were slow in reporting the substantial facts during the following weeks.[21]

On May 4, 1986 at the Tokyo Economic Summit, representatives of the European Community and the Heads of State of seven major industrial nations formally addressed the implications of the Chernobyl accident.[22] These leaders and representatives declared every country to be responsible for providing prompt, detailed and complete information on nuclear emergencies and accidents, particularly those with transboundary consequences. In addition, the representatives strongly urged the early drafting of an international convention which would obligate parties to report and exchange information in the event of a nuclear accident.[23]

Global reactions to the Chernobyl accident varied.[24] Internationally, the European Parliament adopted a resolution rebuking the Soviet Union for failing to give timely and adequate information of the Chernobyl accident.[25] The United States Congress also strongly con-

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[21] *See* Davis, *supra* note 19, at 964. When the Politburo did make a statement regarding the cause of the accident, it reported that First Deputy Minister of Medium Machine Building, Meshkov, among others, was relieved of his duties "for bad errors and shortcomings . . . . Mr. Meshkov's inclusion in the list of culprits contributed to speculation that the Chernobyl plant may have been used for producing plutonium for thermonuclear bombs." Schmemann, *Chernobyl Answers: New Questions*, N.Y. Times, July 21, 1986 at A3, col. 4.

[22] The Tokyo Summit was the 12th annual summit on world economic issues. *See Tokyo Summit Declaration on the Implications of the Chernobyl Nuclear Accident*, 37 NUCLEAR L. BULL. 37 (1986) [hereinafter *Tokyo Declaration*]. The nations attending the summit were Canada, France, Great Britain, Italy, Japan, United States, and West Germany. *See Seven Nation Economic Summit Held in Tokyo*, 46 FACTS ON FILE 329 (1986).

[23] *Tokyo Declaration*, *supra* note 22, at 37-38. The representatives further stated that every country bears an "international responsibility . . . for the safety of the design, manufacture, operation and maintenance of its [nuclear] installations . . . . Each of our countries accepts that responsibility, and we urge the Government of the Soviet Union, which did not do so in the case of Chernobyl, to provide urgently such information, as our and other countries have requested." *Id.* The Representatives noted with satisfaction the Soviet Union's willingness to undertake discussions with the IAEA. *Id.* at 38.

[24] *See The Global Fallout*, U.S. NEWS & WORLD REP., Sept. 8, 1986, at 57. France plans no change in the continued development of a nuclear power program which already provides 65% of the country's electricity. In West Germany, Social Democrats, while failing to gain office during January 1987 elections, garnered support for a total ban on nuclear power during their campaign for office. *See id.* In Japan, a recent poll showed overwhelming anti-nuclear sentiment, yet the government plans to build 17 new reactors by 1996. *Id.* Soviet workers drafted for the clean-up of Chernobyl have held work-stoppages and demonstrations. *Id.*

[25] *See* 9 INT'L ENVTL. REP. 179 (1986). The resolution "deplored the absence of any binding international rules on civilian safety and called for quick negotiations on international accident reporting rules." *Id.*

demned the secrecy of the Soviet Union.[26] On May 1, 1986, the United States House of Representatives passed a resolution condemning the Soviet's failure to notify the world of the accident.[27] The resolution called upon the Soviets to permit the international press to cover the situation and to allow the IAEA to investigate the cause of the accident.[28] Congressman George Gekas (R. Pa.) asserted that the Soviets had committed an international crime by not reporting the tragedy.[29] In the Senate, a similar resolution called for both a thorough investigation by the IAEA and the implementation of an international requirement that any nation sustaining a nuclear accident notify all neighboring countries immediately.[30]

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[26] Senator Robert Dole (R. Kan.) observed:

> [We all have a] right to know what really happened at Chernobyl . . . . None of this information is Soviet 'national security' information, by any legitimate standard. The release of this informatnion would not compromise any military secrets or make the U.S.S.R. military vulnerable. The only thing that the Soviets risk by release of this information is informed public discussion of the accident, which might reveal Soviet technological or administrative shortcomings.

132 CONG. REC. 58, S5261 (daily ed. May 5, 1986).

[27] H.R. Res. 440, 99th Cong., 2d Sess., 132 CONG. REC. 57, H2307 (daily ed. May 1, 1986). Representative Mary Oakar (D. Ohio) and Robert Walker (R. Pa.) cosponsored the resolution, and Representative Dante Fascell (D. Fla.) introduced certain amendments which were all agreed upon. *Id.* Representative Walker remarked that he was particularly appalled by "the fact that the Soviet Union has not only lied to the world, but has lied to its own people about the extent of the damage." *Id.* at H2303. "Within a few miles of the reactor . . . there are people still out working in fields and literally have a rain of death falling on them and are apparently unaware that they are in any kind of danger." *Id.* at H2305. Senator Chic Hecht (R. Nev.) observed that to the Soviets, "[s]ecrecy outweighs any consideration of human safety." He also commented that "Mr. Gorbachev is a fraud . . . [who] does not care about people . . . [nor] the horrors of nuclear war." 132 CONG. REC. 58, S5135 (daily ed. May 5, 1986).

[28] H.R. Res. 440, *supra* note 27, at H2307.

[29] 132 CONG. REC., 55, H2202 (daily ed. Apr. 29, 1986) (statement of Rep. Gekas). Representative Tom Lantos (D. Cal.) referred to events in the Soviet Union as more than "just a human tragedy; it is a governmental crime. This globe is too small and too fragile and too interdependent for Stalinist secrecy to determine the fate—not only of the Soviet people — but of the millions who lived beyond Soviet borders." 132 CONG. REC. 57, H2285 (daily ed. May 1, 1986).

Several other Congressmen introduced resolutions finding the Soviet action to be "unconscionable." *See, e.g.*, 132 CONG. REC. 56, H2245 (daily ed. Apr. 30, 1986) (statement by Rep. Mario Biaggi (D. N.Y.)). Representative Biaggi described Soviet credibility as "pitiful" and appealed to the Soviets to "come clean." Representative Biaggi further noted that the Soviet's secrecy concerning Chernobyl had greater implications, and advised that "[w]e better remember this incident at our Geneva arms talks and absolutely insist that any agreements we enter into with the Soviets have a strong mutual verification provision." *Id.*

[30] S. Res. 390, 99th Cong., 2d Sess., 132 CONG. REC. 55, S5010 (daily ed. Apr.

While enacting these resolutions, United States Congressmen compared the Soviet's management of the Chernobyl accident with the United States management of the Three Mile Island (TMI) nuclear accident in 1979.[31] Within hours of the incident's occurance, TMI officials had notified both state authorities and the Nuclear Regulatory Commission. Shortly thereafter, a local radio station broadcast information concerning the accident on its nightly newscast.[32] In the opinion of some observers, as the events of TMI unfolded, journalistic overkill blew an admittedly serious problem out of proportion.[33] In comparison, the opposite reaction occurred at Chernobyl. A week after the Chernobyl accident, Soviet citizens had to rely on rumor and Western broadcasts for information.[34]

LAW

No previous international convention requires prompt notification of a nuclear accident. Several agreements between individual states,

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29, 1986). A resolution introduced by Senator William Roth (D. W.Va.) asked the President to raise the question of nuclear safety at the next United States-Soviet summit and called upon the United States to offer appropriate technical and medical assistance to the Soviet Union. *Id.*

Another resolution, introduced in the House, called upon all nations to agree to inform "the entire world community and their neighboring countries as soon as possible immediately [sic] when a nuclear disaster occurs . . . and give them all relevant information. That is the least that any people can do for the rest of humanity." 132 CONG. REC. 56, H2245 (daily ed. Apr. 30, 1986) (statement by Rep. Dennis Hertel (D. Mich.)).

[31] The accident occurred at Three Mile Island, Pennsylvania on March 28, 1979. The accident apparently resulted from a complicated chain of events beginning with an error in routine maintenance. "In the course of the accident, the reactor fuel began to heat up, degrading the metal encasing it and releasing radioactive material into the reactor cooling water—and eventually outside the reactor building, where the radioactive material was distributed to the surrounding countryside by the prevailing winds." Abbots, *Nuclear Power After Three Mile Island*, 37 BUS & SOC'Y REV. 18, 19 (1980-81).

[32] On the evening of the TMI accident, United States network newscasts broadcast word of the "worst nuclear accident to date." Kellman, *Anxiety Over the TMI Accident: An Essay on NEPA's Limits of Inquiry*, 51 GEO. WASH. L. REV. 219, 229 (1983).

[33] *See* McCurdy, *supra* note 20, at 3. During Congressional debates concerning H.R. Res 440, Representative Walker noted that "[t]here was an absolutely massive infusion not only of people to tell the rest of the world about what was going on at Three Mile Island, but also people to help . . . . [W]e were literally deluged by the free press." 132 CONG. REC. 57, H2305. (daily ed. May 1, 1986).

[34] 9 INT'L ENVTL. REP. 140 (1986). "The Soviet authorities' reticence created particularly intense anxiety for residents of the Ukranian capital . . . . In Moscow . . . [a] cab driver echoed the official explanation . . . several days after the accident, that 'a little something' had happened in the Kiev region." *Id.*

however, require the parties to advise each other promptly of any serious operating incidents at nuclear facilities.[35] The large number of bilateral treaties providing for such an exchange of information[36] evidences the general acceptance of this practice as customary international law.[37] This custom establishes a rule of law binding all states by such custom except those who openly oppose it during formation.[38]

The United States is a party to several bilateral agreements concerning the exchange of technical information and cooperation in the use and research of atomic energy.[39] Many of these agreements are between the United States Nuclear Regulatory Commission[40] and a foreign institute or commission on nuclear energy. Such agreements, however, primarily focus on the exchange of regulatory standards and technical information concerning nuclear facilities, such as licensing requirements.[41] The exchange of information regarding operating incidents such as nuclear accidents is merely a small provision included in the larger framework of the agreements.[42] None of the

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[35] *See, e.g., infra* notes 36 and 41 and accompanying texts.

[36] *See, e.g.*, Arrangement Relating to Information in the Nuclear Field, Sept. 8, 1976, United States-Canada, 28 U.S.T. 8977, T.I.A.S. No. 8778; Arrangement for the Exchange of Technical Information and Cooperation in Nuclear Safety Matters, Apr. 11, 1977, United States-Iran, 29 U.S.T. 1052, T.I.A.S. No. 8867; Arrangement for the Exchange of Technical Information and Cooperation in Safety Research, May 20, 1976, United States-Brazil, 29 U.S.T. 4634, T.I.A.S. No. 9071.

[37] International custom is defined as "evidence of a general practice accepted as law." Statute of the International Court, art. 38(1). For a discussion on the relationship between treaties and custom see Baxter, *Treaties and Customs*, RECUEIL DES COURS 25, 99-101 (1970).

[38] "If a custom becomes established as a general rule of international law, it binds all States which have not opposed it, whether or not they themselves played an active part in its formation." Wadlock, *General Course on Public International Law*, 2 RECUEIL DES COURS 1, 49-53 (1962).

[39] For a list of some of these treaties see *supra* note 36 and *infra* note 41.

[40] The Nuclear Regulatory Commission, formerly the Atomic Energy Commission, primarily regulates and licenses nuclear powerplants. W. FOX JR., FEDERAL REGULATION OF ENERGY, § 2.12 (1983).

[41] *See, e.g.*, Technical Exchange in Regulatory Matters, Sept. 29, 1980, United States-Japan, ___ U.S.T. ___, T.I.A.S. No. 10537. The preamble states that the purpose of the agreement is to further "a mutual interest in a continuing exchange of information pertaining to regulatory matters and of standards required or recommended by their organizations for the regulation of safety and environmental impact of nuclear facilities." *Id.* at preamble. *See also* Technical Information Exchange and Cooperation in Regulatory and Safety Research Matters, Jan. 14, 1982, United States-Brazil, ___ U.S.T. ___, T.I.A.S. No. 10513, at preamble. This treaty repeats verbatim the language quoted above.

[42] *See, e.g.*, Technical Information Exchange and Cooperation in Regulatory and Safety Research Matters, *supra* note 41 and accompanying text.

agreements defines what type of event will trigger mandatory notification nor do the agreements specify how early the state must advise the other party to the treaty. The agreements provide that the information will be exchanged through written letters, reports, and documents or by prearranged visits.[43]

One such agreement between the United States and Brazil entered into force on January 14, 1982.[44] The scope of this agreement includes the exchange of information concerning licensing of nuclear facilities, reactor safety research results, and reports on operating experiences such as nuclear incidents, accidents, and shut-downs.[45] It specifically provides for "early advice of important events, such as serious operating incidents . . . . that are of immediate interest" to the parties.[46]

Most United States agreements on atomic energy cooperation contain the same vague language regarding notification that is found in the United States-Brazil agreement. One attempt to remedy the vagueness is found in an understanding between the United States and the Philippines, which provides that the parties agree to make "special efforts" to give early advice of important nuclear incidents.[47] This agreement does not define, however, just what "special efforts" involve.

Other international agreements obligating the United States to notify other states of a domestic incident include a cooperation agreement with Mexico to protect the environment around the border between the two nations.[48] In addition, the United States has mutually

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[43] *See, e.g.*, Technical Exchange in Regulatory Matters, *supra* note 41, at art. 2, para. 1. "The exchange of information under this Arrangement will be accomplished through letters, reports, and other documents, and by visits and meetings arranged in advance." *Id.*

[44] Technical Information Exchange and Cooperation in Regulatory and Safety Research Matters, *supra* note 41. The Arrangement extends a five-year Arrangement signed on May 20, 1976 which contained similar provisions. *See* Technical Information Exchange, May 20, 1976, United States-Brazil, 29 U.S.T. 4634, T.I.A.S. No. 9071.

[45] Technical Information Exchange and Cooperation in Regulatory and Safety Research Matters, *supra* note 41, at art. I. 1. Information is exchanged only to "the extent that the U.S.N.R.C. [United States Nuclear Regulatory Commission] and the C.N.E.N. [Comissao Nacional de Energia Nuclear of Brazil] are permitted to do so under the laws, regulations, and policy directives of their respective countries." *Id.*

[46] *Id.* at art. I.1(g).

[47] Technical Information Exchange and Nuclear Safety , United States-Philippines, Mar. 28, 1980, 32 U.S.T. 1050, T.I.A.S. No. 9756. The agreement states: "Each party will make special efforts to give early advice of important events, such as serious operating incidents and government-directed reactor shutdowns, that are of immediate interest to the other." *Id.* at art. I.1(h).

[48] Agreement for the Protection and Improvement of the Environment in the

agreed with Mexico to designate an individual who will notify the other state by the most rapid means possible of every polluting incident which could have adverse transboundary affects.[49] This agreement is much more detailed as to what information must be given and to whom. It sets out four operational phases for when an accident occurs, the first of which is notification.[50]

The United States, however, is not the only state to address the early notification problem. The European Community has issued directives dealing specifically with early notification of a nuclear accident. Euratom[51] Directive 80/836, adopted by the Council of the European Communities, provides that member states must notify "as a matter of urgency" neighboring states of any accident which could expose the public to radioactivity.[52] The Directive encompasses any hazardous activity arising from ionizing radiation[53] and applies to all members of the European Community.[54] It does not, however, state

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Border Area, Aug. 14, 1983, United States-Mexico, ___ U.S.T. ___, T.I.A.S. No. 10827. This agreement imposes a duty to inform the other state of a proposed activity which may have transboundary environmental consequences before those consequences occur. The purpose of this information is to allow a state to assess extraterritorial dangers and explore alternatives to prevent transboundary pollution before it occurs. The agreement does not, however, contain guidelines on what information must be given or when such information must be given. *See id.*

[49] Agreement of Cooperation Regarding Pollution of the Marine Environment, July 24, 1980, United States-Mexico, Annex 1, 32 U.S.T. 5899, T.I.A.S. No. 10021. The agreement fully entered into force March 30, 1981. *Id.*

[50] *Id.* at Annex IV. Phase one is discovery, notification and alarm. Phase two is evaluation of the incident, consultations and agreement on joint response. Phase three is containment and measures against the spread of the pollutant, and the final phase is cleanup and recovery. *Id.* The agreement provides that "[t]he existence of any polluting incident which is affecting or threatens the other Party will be communicated, without delay . . . . A prompt reaction is vital to achieve satisfactory results from an operation." *Id.* at Annex V.

[51] Euratom is an organization of the European Communities whose purpose is to develop research of nuclear techniques, to establish and apply uniform nuclear safety standards, and to facilitate atomic investment. *See* J. POLACH, EURATOM 28 (1964).

[52] Council Directive of July 15, 1980, 23 O.J. EUR. COMM. (No. L 246), art. 45 para. 5. Article 45 provides that "[a]ny accident involving exposure of the population must be notified as a matter of urgency, when the circumstances so require, to neighboring Member States and to the Commission." *Id.*

[53] *Id.* at art. 2. The scope of application includes "the production, processing, handling, use, holding, storage, transport and disposal of natural and artificial radioactive substances and to any other activity which involves a hazard arising from ionizing radiation." *Id.*

[54] *Id.* at art. 3. "Each Member State shall make the reporting of the activities referred to in Article 2 compulsory." *Id.*

what information must be given other than the occurrence of the accident.

The Council of the European Community issued another directive on August 20, 1986.[55] This directive came in response to a resolution by the European Parliament calling for more specific notification requirements to further enhance the rapid exchange of information.[56] The directive obligates member states to notify the Commission of any accident, its time, place, facility, cause, level of radioactivity, and foreseeable behavior.[57] States must supplement this data with subsequently obtained information[58] and supply all available information likely to be useful in protecting the health and safety of the public and environment.[59]

ANALYSIS

The Vienna Convention on Early Notification greatly improves the existing law on notification concerning nuclear accidents by clarifying a state's duties to the international community when a nuclear accident occurs within that state's borders.[60] The Convention clearly specifies the information which must be provided to other state parties who are, or may be physically affected by the accident.[61] Further, the convention expressly defines the role of the IAEA in channeling information regarding nuclear accidents.[62] The Convention does not, however, define in detail certain key terms and requirements but leaves interpretation of these terms to the discretion of each state.[63] Although the Convention is an improvement of the existing law in

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[55] 1985-86 EUR. PARL. DOC. (COM No. 86) (1986).

[56] *Id.* at preamble. The directive states as one of its purposes that "in the light of recent events, it is essential that information on unusually high levels of radioactivity should be available in all Member States and that therefore means should exist for the rapid delivery and exchange at Community level of information concerning such unusually high levels and of the measures taken and recommendations issued by the competent national authorities of all Member States." *Id.* at preamble, para. 14.

[57] *Id.* at art. 1(1)(a).

[58] *Id.* at art. 2(2).

[59] *Id.* at art. 1(1)(b).

[60] *See infra* note 68 and accompanying text.

[61] Convention, *supra* note 4, at art. 2, para. 5 for a list of information which must be provided. For a partial list, see text accompanying note 68 *infra*.

[62] Convention, *supra* note 4, at art. 4.

[63] For example, the Convention does not clearly define which states must be notified or how quickly such notification must take place. *See infra* notes 74 and 76 and accompanying text for a discussion of these problems.

the area of notification, its major flaw is the limitation on the scope of accidents to which it applies.[64]

Existing customary international law mandates only that states give early advice of important operating incidences at nuclear reactor facilities.[65] This custom, however, derived from treaties which were not aimed at providing notice of a nuclear accident.[66] The provisions requiring notice of serious operating incidents within these treaties appear to have been inserted merely as a precautionary measure never likely to be used or needed.[67] The Convention expands the customary law by stipulating that states must provide more detailed information including notice of the accident, its time, location, nature, cause, and foreseeable developments.[68] Morever, the Convention does not affect reciprocal rights and obligations under existing treaties between states, such as the information exchange agreement between the United States and Brazil.[69]

The Convention additionally requires states to supplement the original information as the situation develops and the state gathers further information.[70] This requirement is important given the nature of

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[64] *See* Convention, *supra* note 4, at art. 2. *See also infra* note 88 and accompanying text for a discussion on the limited scope of application of the convention.

[65] For a discussion of existing international custom see *supra* note 38. *See also, e.g.*, Technical Information Exchange and Cooperation in Regulatory and Safety Research Matters, *supra* note 41. Article I.1(g) of the Treaty provides that parties agree to exchange "[e]arly advice of important events, such as serious operating incidents and government-directed reactor shutdowns, that are of immediate interest to the parties." *Id.*

[66] See *supra* note 38 and accompanying text for a discussion of the custom.

[67] The precautionary intent of the language is evidenced by the location of this provision in the scope of the agreements. *See* Technical Exchange in Regulatory Matters, *supra* note 41 at art. 1, para. 1(g) which lists notice of serious operating incidents as the last of seven types of information to be exchanged. *See also* Technical Information Exchange and Cooperation in Regulatory and Safety Research Matters, *supra* note 41 at art. I, para. 1(g) which lists notification of "serious operating incidents" as seventh out of eight types of information covered by the agreement.

[68] Convention, *supra* note 4, at art. 2.

[69] The Convention supplements and expands but does not limit previous international agreements. *See* Convention, *supra* note 4, at art. 10. Article 10 states that "[t]his Convention shall not affect the reciprocal rights and obligations of State Parties under existing international agreements which relate to the matters covered by this Convention, or under future international agreements concluded in accordance with the object and purpose of this Convention." *Id.*

[70] Convention, *supra* note 4, at art. 5, para. 2. Article 5 provides that "information shall be supplemented at appropriate intervals by further relevant information on the development of the emergency situation, including its foreseeable or actual termination." *Id.*

nuclear accidents and the rapid changes which may occur in radiation levels. Previous treaties, such as the agreement between the United States and the Philippines,[71] made no reference to updating information nor to responding to requests for further information.

Although the Convention improves customary international law in the area of notification, its present form leaves certain problems unresolved. While the Convention clearly specifies what information a state must provide, it does not precisely define how quickly states must provide such information. In this respect, the Convention neither changes nor improves the existing law.[72] For example, the treaty concerning information exchanges between the United States and Brazil simply sets out that "early" advice must be given.[73] Likewise, the Vienna Convention merely provides that states shall "promptly" and "forthwith" communicate the required information.[74] Instead of leaving the decision as to what is "prompt" to the discretion of each state, the drafters of the Vienna Convention should have furnished some guidelines as to how soon a state must provide the information.[75] The drafters should have stipulated that states shall be required to

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[71] Technical Information Exchange and Nuclear Safety, *supra* note 47.

[72] The bilateral treaties did, however, provide that information was to be exchanged by letters, reports, documents, or pre-arranged meetings. *See supra* note 43 and accompanying text. Clearly the aforementioned methods would be inadequate to effectively inform neighboring states that a catastrophic nuclear accident has occurred near their borders. The Convention does not limit the means by which notification must be given.

[73] Technical Information Exchange and Cooperation in Regulatory and Safety Research Matters, *supra* note 41 at art. I.1(g).

[74] Convention, *supra* note 4, at art. 2. Article 2 provides that "[i]n the event of an accident . . . the State Party . . . shall forthwith notify . . . of the nuclear accident . . . and promptly provide . . . available information." *Id.*

[75] For a discussion on the problems of allowing states to make "ad hoc" decisions which have transboundary environmental impact, see Carroll & Mack, *On Living Together in North America: Canada, the United States and International Environmental Relations*, 12 DEN. J. INT'L L. & POLICY 35 (1983). " 'Ad-hockery' provides no certainty as to how an issue will be handled in the future. Each issue is disposed of separately, often in a heated and emotional atmosphere generated by the media." *Id.* at 41.

"Many commentators believe that detailed and binding international regulations are necessary for the rational solution of transfrontier environmental problems." *See* Note, *The Environmental Cooperation Agreement Between Mexico and the United States: A Response to the Pollution Problems of the Borderlands*, 19 CORNELL INT'L L.J. 87, 134 (1986) [hereinafter *Environmental Cooperation Agreement*].

Additionally, some scholars have proposed that a duty to inform prior to an accident should be imposed. They argue that states should be informed of activities "which can be prejudicial to their sovereignty or affect environmental quality." *See* A. SPRINGER, THE INTERNATIONAL LAW OF POLLUTION 147 (1983).

give notice of a nuclear accident no later than a certain number of hours after the accident. Such a provision would have assured a more uniform and equitable application of the Convention.

The Vienna Convention further allows each state to determine who will be notified by allowing that state to decide for itself which states are or may be physically affected by the accident.[76] International custom similarly allows states to determine for themselves which states are to be considered affected or threatened by a nuclear incident and thereby entitled to notification.[77] The drafters of the Convention could have improved upon this custom by specifying that all states within a given minimum radius of the accident, and additionally, any other states who are or may be physically affected, must be notified. Alternatively, the drafters could have given the IAEA the full responsibility to inform the states whom the IAEA determines are or may be physically affected. This alternative would assure that changing political administrations and other political pressures would play no part in the decision to notify.[78] Additionally, the Convention should obligate the IAEA to issue health warnings and inform the citizens of the state in which the accident occurs.[79] The inexcusable lack of information available to the Soviet citizens after Chernobyl illustrates the importance of such a provision.[80]

The most serious problem with the Convention, however, is the limited scope of accidents to which it applies. The Convention applies to accidents from all uses of nuclear energy except those from the

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[76] Convention, *supra* note 4, at arts. 2, 5 and 6. Article 6 provides that states shall "respond promptly to a request for further information or consultations sought by an affected State Party." *Id.* The problem of determining which states to notify does not arise in bilateral agreements since the parties to these agreements are bound to notify only those states with whom they have agreed to do so.

[77] The reason for international custom allowing for self determination of affected or threatened states lies in the fact that the treaties from which this custom derived made no specific provisions regarding who must be notified. *See supra* note 36.

[78] "Several factors make binational solutions to these ecological [transboundary pollution] problems extremely difficult. These factors include the differing . . . domestic legal regimes of the two nations, the lack of coordination between the many agencies dealing with the problems, and the long tradition of mistrust between the nations." *See Environmental Cooperation Agreement, supra* note 75, at 102.

[79] *See* Comment, *Nuclear Accidents: Judicial Review of the NRC's Duty to Issue a Health Warning*, 9 FORDHAM URBAN L.J. 353 (1980). This comment argues that in the United States, the NRC has a nondiscretionary duty to the public to issue a health warning as it becomes aware of radiological emissions. *Id.* at 370. Internationally, the IAEA should serve this function and issue health warnings to alert the public exposed to the radiation of the health risks involved.

[80] *See supra* note 27.

use or testing of nuclear weapons.[81] Article 3 of the Convention does provide that states may voluntarily notify surrounding states if an accident outside the scope of the Convention occurs.[82] In light of the serious health consequences of nuclear radiation,[83] however, the Convention should mandate notification of all nuclear accidents, irrespective of their origin.

The directive issued by the Council of the European Communities on August 20, 1986[84] serves as a guide for a broad scope of application in that it applies to any nuclear accident or release of radioactive materials.[85] This directive updates Euratom Directive 80/836 which applies to any activity which involves a hazard arising from ionizing radiation.[86] In addition, the 1980 pollution agreement between the United States and Mexico provides that any polluting incident must be communicated without delay.[87] These agreements recognize the importance of notification of any incident which could affect the health and lives of many people.

Addressing the issue of the scope of application of the convention, most of national the experts who met at the Vienna Convention agreed that the scope of the Convention was unduly narrowed by excluding accidents from nuclear weapons.[88] The United States was

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[81] Convention, *supra* note 4, at art. 2. *See also* Annex V, *supra* note 7, at 3, 6, 7, 11.

[82] Convention, *supra* note 4, at art. 3. "With a view to minimizing the radiological consequences, States Parties may notify in the event of nuclear accidents other than those specified in article 1." *Id.*

[83] For a discussion of the effects of nuclear radiation see Stanfield, *supra* note 17, at 1647. The effects of radiation exposure include cataracts, damage to bone marrow, and cancer. *See Soviets Reveal Delayed Evacuation, Other Details of Nuclear Accident, supra* note 18. *See also* R. NADER & J. ABBOTTS, THE MENACE OF ATOMIC ENERGY 71 (1977).

[84] 1985-86 EUR. PARL. DOC. (COM No. 86) (1986).

[85] *Id.* at art. 1.1(a). "[W]henever a nuclear accident or other event occurs on the territory of a Member State and there is the potential for, or actual occurrence of, an abnormal high release of radioactive materials, the Member State shall forthwith notify the Commission of the occurrence . . . ." *Id.*

[86] *See* Council Directive of July 15, 1980, *supra* notes 52 and 53.

[87] Agreement of Cooperation Regarding Pollution of the Marine Environment, *supra* note 49 at Annex V. "The existence of any polluting incident which is affecting or threatens the other Party will be communicated, without delay . . . ." *Id.*

[88] *See* Annex V, *supra* note 7. The expert from France noted that he would have "preferred to see the scope of the convention extended to all nuclear accidents irrespective of their origin, and the limitation on the scope was regrettable." *Id.* at 11. The Iranian expert "was strongly of the belief that all incidents relating to nuclear safety with radiological consequences should be notified." *Id.* at 12. The Indonesian representative favored the widest possible scope, as did those from Argentina, Greece, Japan, and Spain. *Id.* at 20.

virtually the only country to oppose full-scope coverage,[89] and until the final day of the Convention, the United States had instructed its representative to oppose any inclusion, implicit or explicit, of accidents associated with nuclear weapons.[90] The delegates reached a compromise by including article 3, and the five states with nuclear weapons agreed to voluntarily notify in the event of an accident involving nuclear weapons. Therefore, no reason exists to prevent making such notification mandatory.[91] The effect on these countries would be virtually the same, especially given the United States argument that full scope was unnecessary due to the unlikelihood of an accident from nuclear weapons.[92] As the Convention now reads, if a state sustains a major accident in testing nuclear weapons which has serious transboundary effects, that state is morally but not legally obligated to notify. The consequences of such inaction could severely harm the lives of many.

CONCLUSION

The Convention on Early Notification of a Nuclear Accident is an important step towards a safer and healthier environment. The Convention greatly improves existing customary international law on early

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[89] Only two countries had not been in favor of the full scope coverage of the Convention, the United States and Great Britain. *See id.* at 12.

[90] *Id.* at 4. The United States opposed the inclusion of accidents associated with nuclear weapons for national security reasons. *Id.* Notification of a nuclear accident, however, would not pose a threat to military secrets. The object of the Convention is to protect the health of the population, not to further political ends or protect commercial interests.

[91] The United States stated that it would, "as a matter of national policy, voluntarily provide notification about all accidents which had or might have transboundary effects." *Id.* at 4, 6, 7, 11.

The expert from Ireland noted that "[i]t was regrettable that, although all the nuclear-weapons States had indicated their willingness to notify in the event of any nuclear accident which might be of radiological significance for another State, not all had found it possible to make such notification mandatory within the framework of the draft convention." *Id.* at 36.

[92] The expert from India stated that if accidents from nuclear weapons were so unlikely because of:

> fool-proof safety precautions . . . there would be no reason not to include them under the draft conventions, as the nuclear-weapon States would then in any case have virtually nothing to notify. The argument based on national security also was not convincing; no one wished to breach national security - what was required was merely an immediate notification of a nuclear accident, whatever its source.

Id. at 20.

notification which provides only that states should advise each other of serious operating incidents at nuclear facilities.[93] With a goal of minimizing the effect of a nuclear accident, the Convention clarifies the rights and duties of state parties when such an accident occurs. The Convention, however, should further clarify certain obligations, namely who should be notified and how quickly such notification should occur. More importantly, the Convention should include within its scope accidents resulting from the use or testing of nuclear weapons, because the effects of ionizing radiation remain the same regardless of the source of such radiation.

In the face of expanding uses of nuclear energy, the Convention does restore to the international community some confidence that the harmful consequences of a nuclear accident might be reduced by immediate action. Therefore, the Convention stands as a legal milestone in the consolidation of international cooperation in promoting the safe use of nuclear energy.

Sharon McBrayer

[93] See *supra* notes 65 and 71 and accompanying text for a discussion on existing law.