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Nuclear Proliferation: Dim Prospects for Control

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NUCLEAR PROLIFERATION: DIM PROSPECTS FOR CONTROL

INTRODUCTION

The proliferation of nuclear weapons has been an international concern since atomic bombs were dropped on Hiroshima and Nagasaki in 1945. Attempts at controlling horizontal proliferation[1] can be viewed as falling into three phases. The United States, Great Britain, and Canada attempted to maintain a monopoly on nuclear technology during the first phase. This attempted monopoly, however, was abruptly broken in 1949 when the Soviet Union exploded its first nuclear device.[2] It was followed by Great Britain in 1952,[3] and by France and China in 1960[4] and 1964,[5] respectively.

The policy of the United States during this second phase of nuclear proliferation was articulated by President Eisenhower in his Atoms for Peace Speech in 1953,[6] in which he stated that the United States would make available to other nations the benefits of the peaceful use of nuclear energy. Important developments of this era included the establishment of the International Atomic Energy Agency [hereinafter referred to as IAEA], the acceptance of the Non-Proliferation Treaty [hereinafter referred to as NPT], and the establishment and implementation of IAEA safeguards.

The international community has moved into a third phase with India's detonation of a nuclear weapon in 1974, and the emergence of several more nations on the verge of independent nuclear capability, including countries in volatile political areas, such as Israel[7] and Taiwan.[8] The technology involved in the development and use of nuclear power for peaceful purposes is easily convertible into an armament program. Furthermore, a neces-

1. Horizontal proliferation refers to the increase in the number of countries possessing nuclear weapons; vertical proliferation has been defined as quantitative and qualitative increases in weapons held by nuclear States. G. FISCHER, THE NON-PROLIFERATION OF NUCLEAR WEAPONS 20-21 (D. Wiley transl. 1971).

2. PUGWASH CONFERENCES ON SCIENCE AND WORLD AFFAIRS, PREVENTING THE SPREAD OF NUCLEAR WEAPONS 274 (C. Barnaby ed. 1969) (Pugwash Monograph 1).

3. *Id.*

4. W. WENTZ, NUCLEAR PROLIFERATION 5 (1968).

5. *Id.*

6. 8 U.N. GAOR 450-52 (1953), PUBLIC PAPERS OF THE PRESIDENTS OF THE UNITED STATES: DWIGHT D. EISENHOWER ¶ 256 (1960) [hereinafter cited as PUBLIC PAPERS].

7. N.Y. Times, Mar. 16, 1976, at 1, col. 2.

8. *Id.*, Aug. 30, 1976, at 1, col. 4.

sary by-product of a nuclear reactor system is plutonium, the basic fissionable material necessary for weapon development.[9] As Willrich points out,

> [a] conclusion of fundamental importance arises from this fact: the increasing use of nuclear energy primarily to generate electric power will greatly complicate the task of preventing nuclear weapons proliferation.[10]

It is the potential for development of a nuclear weapon capability from peaceful uses of nuclear energy which requires that restrictions be placed on the free transfer of nuclear materials. Whether the world can exist with the nuclear technology it has created will be determined in this last phase.

This note will first consider the historical development of the concept of non-proliferation, centering on United States initiatives. The NPT, the most important treaty in this area, will be analyzed. Recent developments in the field will be examined at the conclusion of the analysis.

I. The First Phase: Secrecy

The first phase in the area of nuclear proliferation is of historical significance only. During that phase, the three countries then possessing nuclear technology, the United States, Great Britain, and Canada, attempted to maintain a monopoly on that knowledge until an international organization could be established to oversee its dissemination solely for peaceful purposes. In November 1945, following the bombing of Hiroshima and Nagasaki in August of that year, the United States joined with Great Britain and Canada in a three-power declaration prohibiting the disclosure of atomic energy information until the establishment of an international system of control.[11] All efforts at this time were directed toward an overall goal of maintaining the secret of nuclear technology, with little if any concern for its peaceful uses.

In the international sphere, this resulted in the introduction of the Baruch Plan at the United Nations in 1946.[12] The plan

9. M. Willrich, Non-Proliferation Treaty 17 (1969); Senate Comm. on Government Operations, 94th Cong., 1st Sess., Peaceful Nuclear Exports and Weapons Proliferation: A Compendium 14 (Comm. Print 1975) [hereinafter cited as Compendium].

10. M. Willrich, Non-Proliferation Treaty 17 (1969).

11. Agreed Declaration on Atomic Energy by the President of the United States, the Prime Minister of the United Kingdom, and the Prime Minister of Canada, Nov. 15, 1945, 60 Stat. 1479, T.I.A.S. No. 1504, 3 U.N.T.S. 123.

12. For a general discussion of the Baruch Plan, see B. Bechhoefer, Postwar Negotiations for Arms Control 35-82 (1961).

would have established an independent international authority with regulatory powers over all uses of atomic energy throughout the world. In addition, nuclear activities potentially dangerous to world security would have been under the direct managerial control of the authority, and all other nuclear activities would be individually licensed by the authority and subject to its control and inspection. The international agency would also have had the duty to foster the beneficial use of nuclear energy.[13] In order to effectuate the Baruch Plan, the United States, which at that time was the only country actually possessing nuclear weapons, would have agreed to stop its manufacture of atomic bombs and to dispose of its existing stockpile.[14]

The Baruch Plan was the first attempt to negotiate an agreement controlling nuclear energy. However, its major flaw was the failure of its makers to recognize the possibility that another country could develop nuclear capability before an international agency could be established. When the Russians exploded their first nuclear device in 1949, the plan became academic. Yet the Baruch Plan, although unworkable, resulted in some important consequences because of its broad enunciation of Western policy and its disclosure of Soviet attitudes and techniques.[15]

Domestically, attention during this period was focused upon preventing the spread of nuclear-weapons technology; the promotion of peaceful uses of nuclear energy was relegated to a secondary position. The McMahon Act, passed by Congress in 1946[16] and since superseded by the Atomic Energy Act of 1954,[17] reflected the Government's desire to safeguard the monopoly it held on all domestic reactors and production facilities, as well as ownership of all enriched uranium and plutonium within the United States.

Both the Baruch Plan and the McMahon Act were part of a general policy of the United States to maintain the secret of nuclear technology until an international system could be established. The rationale underlying this desire to maintain a monopoly was stated by Representative Thomason during Congressional debate on the conference report on the McMahon Act:

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13. *Id.*
14. M. WILLRICH, *supra* note 10, at 1.
15. B. BECHHOEFER, *supra* note 12, at 41-42.
16. Atomic Energy Act of 1946, ch. 724, 60 Stat. 755.
17. 42 U.S.C. § 2011 *et seq.* (1958), *as amended,* 42 U.S.C. § 2011 *et seq.* (1970).

> Every member [of the Conference Committee] had one big objective and that was to tie up the secret of the atomic bomb. . . . [F]or the time being, at least until we know what we are going to do with this terrible weapon and this tremendous secret discovery, . . . there is nothing in the world to do except to give the Government the monopoly that it must have.[18]

In order to maintain this secret, the McMahon Act prohibited private individuals from owning nuclear material or controlling facilities capable of producing significant quantities of these materials within the United States.[19] The Act also forbade the communication of both military and industrial information since no international control system existed.[20] "[T]his law put a temporary stop to all exchanges of information and all cooperation between the United States and other countries including Great Britain."[21]

II. THE SECOND PHASE: ATOMS FOR PEACE

As the potential for peaceful uses of atomic energy became evident, the United States embarked upon a new phase of nuclear policy. President Eisenhower, in his first inaugural address, enunciated the general outline of his disarmament program.[22] Soon after, Eisenhower proposed international control of all atomic energy and the promotion of its use only for peaceful purposes.[23] The first statement of this policy before an international forum occurred on December 8, 1953, with President Eisenhower's famous Atoms for Peace Speech before the United Nations General Assembly.[24] It marked the beginning of a road that ended in the establishment of the IAEA and the completion of the NPT, which together constitute the framework of the present international controls over nuclear materials.

A. *Atomic Energy Act*

Domestically, this policy resulted in the passage of the At-

18. 92 CONG. REC. 10,194 (1946) (remarks of Representative Thomason).

19. *See* Spingarn, *The International Supply of Nuclear Materials*, in INTERNATIONAL ATOMIC ENERGY AGENCY, EXPERIENCE AND TRENDS IN NUCLEAR LAW 55 (Legal Ser. No. 8, 1972).

20. *See* G. FISCHER, *supra* note 1, at 21-22.

21. *Id.* at 22.

22. PUBLIC PAPERS ¶ 1 (Inaugural Address).

23. *Id.* at ¶ 50 (Chance for Peace Speech).

24. 8 U.N. GAOR 450-52 (1953), PUBLIC PAPERS ¶ 256.

omic Energy Act of 1954,[25] which has made available to cooperating nations the benefits of peaceful application of nuclear energy. The Act authorizes the Atomic Energy Commission to enter into "agreements for cooperation" with other nations concerning the peaceful uses of nuclear energy without Senate approval.[26] However, each such agreement is required to contain a guarantee by the cooperating nation "that any material to be transferred pursuant to such agreement will not be used for atomic weapons, or for research on or development of atomic weapons or any other military purpose."[27] Between 1955 and 1958, bilateral agreements involving the transfer of research and power reactors were concluded with forty-three nations in addition to exchanges of technology and personnel.[28] This greatly facilitated the participation of American industry in atomic power activities abroad. In addition, the Act sanctions international nuclear activities by private industries if carried out under the umbrella of a government-to-government compact which includes a nondiversion guarantee.[29]

United States policy under the Atoms for Peace Program and the 1954 Atomic Energy Act, encouraging the transfer of nuclear technology and material, has proved to be a major cause of the proliferation of nuclear weapons.[30]

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25. Atomic Energy Act of 1954, 42 U.S.C. § 2011 *et seq.* (1970).

26. 42 U.S.C. § 2153 (1970), *as amended,* (Supp. V, 1975). Section 2153 provides:

> No cooperation with any nation . . . shall be undertaken until—
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> . . . .
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> (d) Submission to the Congress.
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> The proposed agreement for cooperation, together with the approval and determination of the President . . . has been submitted to the Congress and referred to the Joint Committee [on Atomic Energy] and a period of sixty days has elapsed while Congress is in session . . . but any such proposed agreement . . . shall not become effective if . . . Congress passes a concurrent resolution stating in substance that it does not favor the proposed agreement for cooperation . . . .

42 U.S.C. § 2153(d) (1970), *as amended,* (Supp. V, 1975).

27. 42 U.S.C. § 2153(a)(3) (1970). *See* Bechhoefer, *Historical Evolution of International Safeguards,* in INTERNATIONAL SAFEGUARDS AND NUCLEAR INDUSTRY 24 (M. Willrich ed. 1973).

28. *Hearings Before the Subcomm. on International Security and Scientific Affairs of the House Comm. on International Relations,* 94th Cong., 1st Sess., app. at 294 (1975) (Nuclear Proliferation: Future U.S. Foreign Policy Implications) [hereinafter cited as *1975 Hearings*].

29. 42 U.S.C. § 2133(d) (1970).

30. *See Hearings on "Nonproliferation" Before the Subcomm. on Arms Control, International Organizations, and Security Agreements of the Senate Comm. on Foreign Relations,* 94th Cong., 2d Sess. 19 (Feb. 23, 1976) [hereinafter cited as *Hearings, Feb. 23, 1976*]. However, Dr. Ikle has qualified this assertion:

> Ironically, the objective of non-proliferation has been served by proclamations and policy and by United States actions at Geneva and the United Nations, while at the same time being violated by the rapid diffusion of nuclear technology, materials, and related hardware—mostly with federal approval and assistance.[31]

Congress amended the Act in 1964 to permit the private ownership of special nuclear materials.[32] United States policy since that time has focused upon agreements for cooperation which allow for the exchange of technical information, the supply of nuclear materials, and the availability of United States enrichment services for foreign countries.[33]

B. *The International Atomic Energy Agency*

The IAEA, headquartered in Vienna, Austria, is a self-governing organization established in 1957 under the auspices of the United Nations.[34] It was an outgrowth of the Atoms for Peace proposal made by President Eisenhower in 1953, in which he called for "international control of atomic energy to promote its use for peaceful purposes only . . . [and] adequate safeguards, including a practical system of inspection under the United Nations."[35]

The Statute, which established the main function of the IAEA, is actually a treaty, to which 108 States were parties as of January 1, 1976.[36] In addition to laying the framework of the

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> There is no question that nuclear technology would have spread in any event—the question is how fast. In the 1950s this rather practical question was being confused with more philosophic issues of science and secrecy: whether scientific discoveries could be kept secret and, indeed, whether it was morally right to keep them secret, would that be possible.

COMPENDIUM 104.

31. W. WENTZ, NUCLEAR PROLIFERATION 1 (1968).

32. Act of August 26, 1964, Pub. L. No. 88-489, 78 Stat. 602. *See* Bechhoefer, *supra* note 27, at 25.

33. Enriched material contains the percentage of a given isotope artificially increased. "Enriched uranium contains more of the fissionable isotope uranium-235 than the naturally occurring percentage (0.7 percent)." F. BARNABY, THE NUCLEAR AGE 140 (1974). *See* Spingarn, *supra* note 19, at 58-59. *See also* Boskma, *Uranium Enrichment Technologies and the Demand for Enriched Uranium*, in NUCLEAR PROLIFERATIONS PROBLEMS 56-68 (B. Jasani ed. 1974).

34. Statute of the International Atomic Energy Agency, *done* Oct. 26, 1956, 8 U.S.T. 1093, T.I.A.S. No. 3873, 276 U.N.T.S. 3 (effective July 29, 1957), *as amended, done* Oct. 4, 1961, 14 U.S.T. 135, T.I.A.S. No. 5284, 471 U.N.T.S. 334 (effective Jan. 31, 1963) [hereinafter cited as Statute].

35. 8 U.N. GAOR 450-52 (1953), PUBLIC PAPERS ¶ 256.

36. TREATIES IN FORCE 317 (1976).

Agency in Articles IV through VII, the Statute establishes as a function of the Agency the administration of safeguards.[37] These safeguards were designed to ensure that fissionable materials and nuclear equipment supplied by or through the Agency would not be utilized for military purposes. Also, safeguards would be applied at the request of the parties to any bilateral or multilateral agreement.[38]

The Statute clearly indicates that the dangers inherent in the use of nuclear energy were foreseen by its drafters. Article II of the Statute provides:

> The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose.[39]

The Statute illustrates an apparent dichotomy. While attempting to insure the peaceful application of atomic energy the Statute also charges the IAEA with safeguarding against the diversion of fissionable material from peaceful purposes to nuclear weaponry without giving the IAEA mandatory powers of enforcement.[40]

> The IAEA Statute does not require any member of the Agency to submit to safeguards . . . nor does it require that states make their international assistance or transfers subject to the recipient's acceptance of such controls. In short, the Statute merely creates a framework for controls within which member states can decide whether to submit and, if so, to what controls.[41]

Another inherent weakness in the framework is that the IAEA is largely run by countries that desire nuclear information but not intervention by nuclear countries.[42]

C. *The Non-Proliferation Treaty*

The origins of the NPT[43] can be traced to the unanimous

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37. Statute art. III, para. (A)(5).

38. *Id.*

39. Szasz, *International Atomic Energy Agency Safeguards,* in INTERNATIONAL SAFEGUARDS AND NUCLEAR INDUSTRY 75 (M. Willrich ed. 1973).

40. Statute art. II.

41. Firmage, *The Treaty on the Non-Proliferation of Nuclear Weapons,* 63 AM. J. INT'L L. 711, 715 (1969).

42. *See* COMPENDIUM 105.

43. *Done* July 1, 1968, 21 U.S.T. 483, T.I.A.S. No. 6839, 729 U.N.T.S. 161 (effective Mar. 5, 1970) [hereinafter cited as NPT].

adoption by the United Nations General Assembly of a resolution proposed by Ireland in 1961.[44] The resolution called for an agreement whereby

> nuclear States would undertake to refrain from relinquishing control of nuclear weapons and from transmitting the information necessary for their manufacture to states not possessing such weapons, and provisions under which States not possessing nuclear weapons would undertake not to manufacture or otherwise acquire control of such weapons.[45]

On June 12, 1968, the United Nations General Assembly commended the resulting Treaty in a resolution[46] adopted by a vote of 95-4, with 21 abstentions.[47] It was opened for signature on July 1, 1968. The NPT entered into force on March 5, 1970, when it had been ratified, in accordance with Article IX of the Treaty, by the three States whose governments were appointed depositories[48] and by more than forty other signatories.

The NPT is composed of eleven articles. Article I refers only to the obligations of nuclear weapon parties, and states that they may not transfer nuclear devices to any State, nor assist a non-nuclear weapon State in acquiring or controlling nuclear devices. The second article sets forth the major obligations of non-nuclear weapon parties: they may not actually receive or acquire control over nuclear devices, nor manufacture them with or without assistance. Article III, the safeguard provision, is intended to provide verification of the fulfillment of the parties' obligations under Article I and II. Safeguards must be applied to all source or special fissionable material in or under the control of non-nuclear weapon parties.

Under Article V, the benefits of peaceful applications of

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44. G.A. Res. 1665, 16 U.N. GAOR Supp. 17, at 5, U.N. Doc. A/4980/Add.1 (1961).

45. *Id.* (citations omitted). *See generally* Smith, *NATO Nuclear Information-Sharing Arrangements and the Non-Proliferation Treaty: Collective Defense Confronts Arms Control*, 13 ATOMIC ENERGY L.J. 331, 342 (1972).

46. 22 U.N. GAOR Annexes, Agenda Item 27, A/7016/Add.1, at 8 (1968).

47. M. WILLRICH, *supra* note 10, at 64.

48. The Limited Test Ban Treaty introduced a new diplomatic practice: the establishment of more than one depository. In this case the depositories were the three original parties to the Treaty: the United States, Great Britain, and the Soviet Union. This allows a State not recognized by one of the original parties to be bound by signing and depositing its instrument of ratification with another original party. G. FISCHER, *supra* note 1, at 129-30.

nuclear explosions are made available to non-nuclear weapon parties under appropriate international procedures and observation. Article VI obligates all parties to pursue effective measures to cease the nuclear arms race and move toward nuclear disarmament. States are granted the right to establish nuclear free zones by Article VII.[49]

Article X allows for withdrawal from the NPT provided that the party determines that extraordinary events relating to the treaty's subject matter have jeopardized the country's supreme interests. Three months notice to the other parties and the Security Council is required. Although theoretically the Security Council could impose sanctions upon a withdrawing party, the composition of the Security Council makes this possibility unlikely.[50] The only conceivable effective sanction would be the ad-

49. The nuclear free zone concept is an attempt to limit the spread of nuclear weapons while still allowing for the peaceful use of nuclear energy. Since international security on a world-wide scale is difficult to organize, efforts on a regional level have become a viable alternative to deal with the security problem.

There have been five major nuclear free zone treaties. The first such treaty bound the signatory nations to restrict their nuclear activities in Antarctica to peaceful purposes and provides for inspection of Antarctic stations by the signatory nations. Antarctic Treaty, *signed* Dec. 1, 1959, 12 U.S.T. 794, T.I.A.S. No. 4780, 402 U.N.T.S. 71 (effective June 23, 1961).

The second major nuclear free zone treaty demilitarized the moon and other celestial bodies and denuclearized that part of outer space under exploration. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *done* Jan. 27, 1967, 18 U.S.T. 2410, T.I.A.S. No. 6347, 610 U.N.T.S. 205 (effective Oct. 10, 1967).

The Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, *done* Aug. 5, 1963, 14 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43 (effective Oct. 10, 1963), was directed toward eliminating atmospheric pollution and radioactive fallout.

The next treaty attempting to establish a nuclear free zone was the Treaty for the Prohibition of Nuclear Weapons in Latin America, 634 U.N.T.S. 281 (effective May 12, 1971). This treaty marked an important step since it attempted for the first time to ban nuclear weapons in a populated area. Although the treaty refers only to Latin America, it endeavors to ban nuclear weapons completely from that region. The fifth major nuclear free zone treaty is the Treaty on the Prohibition of the Employment of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof, *done* Feb. 11, 1971, 23 U.S.T. 701, T.I.A.S. No. 7337 (effective May 18, 1972).

See PUGWASH CONFERENCES ON SCIENCE AND WORLD AFFAIRS, PREVENTING THE SPREAD OF NUCLEAR WEAPONS 332-43 (C. Barnaby ed. 1969) (Pugwash Monograph 1).

50. Two requirements must be fulfilled before the Security Council can take any action. The measure must be supported by nine members, and the veto of any of the five permanent members must not be invoked. U.N. CHARTER art. 27, para. 3. The five permanent members are China, France, the Soviet Union, the United Kingdom, and the United States. *Id.* at art. 23, para. 1. *See generally* W. EPSTEIN, THE LAST CHANCE: NUCLEAR PROLIFERATION AND ARMS CONTROL 142 (1976).

verse publicity generated by withdrawal from the treaty.[51]

Non-nuclear weapon countries have criticized the treaty for providing no assurance that nuclear weapon countries will carry out their obligation to share the benefits of peaceful nuclear explosions[52] on a non-discriminatory basis and at the lowest possible cost.[53] Although the IAEA has begun to seriously consider implementing this provision, thus far the Agency has only established an ad hoc advisory group.[54] In addition, the NPT's promotion of the peaceful use of nuclear explosions has been attacked because "the danger of subsequent radioactive contamination of the environment is very real; the problem of designing a 'clean' explosive has still not been solved."[55]

It is ironic that the NPT contains all the measures for nuclear disarmament which the nuclear weapon States have been unable to agree upon in over twenty years of negotiations and that those States would expect these measures to be applied prospectively to the non-nuclear weapon States.[56]

> The Treaty is intended to prohibit any sixth state from acquiring nuclear weapons and to foreclose the possibility of transferring nuclear weapons to multilateral structures, even though no increase would occur in the number of powers in the global system having control of nuclear weapons. The Treaty also inescapably implies that, in a world limited to five nuclear-weapon states, non-nuclear-weapon states will have to rely for the indefinite future on one or more nuclear-weapon states as guarantors of their security against nuclear aggression.[57]

In questioning whether the NPT has accomplished its purposes more must be examined than whether all potential nuclear weapon States become parties. "To the extent that the treaty creates a climate in which a state does not sign for one of a number of reasons but, nevertheless, decides not to develop nuclear weapons, the treaty has fulfilled most of its functions."[58]

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51. Ehrlich, *The Non-Proliferation Treaty and Peaceful Uses of Nuclear Explosives*, 56 VA. L. REV. 587, 588 (1970).

52. *Id.* at 595.

53. NPT art. V.

54. INTERNATIONAL ATOMIC ENERGY AGENCY, ANNUAL REPORT, 1 JULY 1974-30 JUNE 1975, at 9 (1975).

55. Emelyanov, *On the Peaceful Use of Nuclear Explosions*, in NUCLEAR PROLIFERATION PROBLEMS 215 (B. Jasani ed. 1974).

56. M. WILLRICH, *supra* note 10, at 98.

57. *Id.* at 178.

58. Fisher, *Global Dimensions*, in NUCLEAR PROLIFERATION: PROSPECTS FOR CONTROL 7 (B. Boskey & M. Willrich eds. 1970).

The Treaty also provides a legal framework to assist the international community in mastering nuclear technology. "The Treaty could become a constitutional document in the construction of a world order in which the risks of nuclear conflagrations are successfully contained while the benefits of peaceful uses of nuclear energy are widely available."[59]

In an attempt to influence non-nuclear countries to become parties to the NPT, the United States, the United Kingdom, and the Soviet Union stated before the Security Council on June 17, 1968,[60] that they would guarantee the security of non-nuclear parties to the NPT.[61] Each of these nations, in identical statements, announced its intention, in the event of the aggressive use of nuclear weapons or the threat of aggression against a non-nuclear State, to act expediently through the Security Council and give immediate assistance to the victim nation.[62] The statement also confirmed the natural right of self-defense, recognized by Article 51 of the United Nations Charter.[63] On June 19, 1968, the Security Council approved a resolution[64] which manifested the intention expressed by these countries that they would assist any non-nuclear country threatened by the use of nuclear weapons.[65]

The major purpose of the statements and the Security Council resolution was to offer the non-nuclear weapon States the security assurances that they claimed were lacking in the NPT. Although at first there had been some question as to whether a non-nuclear State need be a party to the NPT before it could invoke

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59. M. WILLRICH, *supra* note 10, at 3-4.

60. 23 U.N. SCOR, 1430th meeting 1-7 (1968).

61. *Id.* A portion of the United States declaration reads as follows:

> "Aggression with nuclear weapons, or the threat of such aggression, against a non-nuclear-weapon State would create a qualitatively new situation in which the nuclear-weapon States which are permanent members of the . . . Security Council would have to act immediately through the Security Council to take the measures necessary to counter such aggression or to remove the threat of aggression . . . .
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> "The United States affirms its intention, as a permanent member of the United Nations Security Council, to seek immediate Security Council action to provide assistance, in accordance with the Charter, to any non-nuclear-weapon State party to the Treaty on the Non-Proliferation of Nuclear Weapons that is a victim of an act of aggression or an object of a threat of aggression in which nuclear weapons are used.

Id. at 5.

62. *Id.* at 3-5.

63. *Id.*

64. S.C. Res. 255 (1968), RESOLUTIONS AND DECISIONS OF THE SECURITY COUNCIL 13, U.N. Doc. S/INF/23/Rev.1 (1970).

65. *Id.*

the Resolution,[66] it is now clear that the assurances extend only to parties to the NPT.[67]

The Resolution has been criticized as containing two important weaknesses. First, the determination whether aggression with nuclear weapons has occurred will be made by the normal Security Council voting procedures, which gives veto power to any of the five permanent Council members.[68] Second, the form of the security guarantees has been criticized because these guarantees are merely unilateral statements rather than a part of the NPT.[69] Had they been stated in the actual body of the NPT "the guarantees would have had the character of a legal obligation, and their value, both politically and psychologically, would have been considerably enhanced."[70]

D. *Safeguards*

The IAEA began administering international safeguards in 1960 through individual agreements with over twenty countries before the NPT was commended by the United Nations in 1968.[71] In part, this was a result of the United States policy, begun in 1962, of transferring to the IAEA the responsibility for administering the safeguards under the United States bilateral agreements for cooperation,[72] as well as the parallel efforts of Great Britain and Canada.[73]

Article III of the NPT contains a specific provision that safeguards be managed by the IAEA. Its sole purpose is to prevent diversion to military purposes of nuclear materials used by non-nuclear weapon States.[74] The safeguard system is basically an

66. Lefensky, *The United Nations Security Council Resolution on Security Assurances for Non-Nuclear Weapon States*, 3 N.Y.U.J. INT'L L. & POL. 56, 59 (1970).

67. M. WILLRICH, *supra* note 10, at 172.

68. *Id.* at 169-70.

69. G. FISCHER, *supra* note 1, at 147.

70. *Id.*

71. Smyth, *The Need for International Safeguards*, in INTERNATIONAL SAFEGUARDS AND NUCLEAR INDUSTRY 18 (M. Willrich ed. 1973).

72. M. WILLRICH, *supra* note 10, at 58-59.

73. *Id.*

74. Firmage, *supra* note 41, at 711, 724-25. Under Article III, all non-nuclear weapon States party to the Treaty are required to conclude, individually or together with other States, a safeguard agreement with the International Atomic Energy Agency [hereinafter referred to as IAEA] covering all their peaceful nuclear activities. All parties to the Treaty must agree not to provide nuclear materials, or specialized equipment such as reactors, to non-nuclear countries unless the material included is subject to safeguards.

administrative process; the IAEA compares information concerning the facilities provided by the country with the independent physical verification performed by the Agency.[75] A sliding scale of frequency for required reports and inspections is established above the exemption limit for militarily insignificant amounts. At a certain point, access to the facilities at all times must be permitted.[76]

There are several areas of nuclear transactions outside the scope of the safeguard system. Safeguards are not required for peaceful nuclear activities carried out within nuclear States; the rationale is that the purpose of non-proliferation is not met in such instances. However, this has been criticized as another discriminatory provision of the NPT, creating differing responsibilities and obligations between nuclear and non-nuclear parties to the Treaty.[77]

Safeguards are inapplicable to transactions entered into expressly for non-weapon military purposes, such as for use in a naval propulsion reactor program or a nuclear weapons research program which stops short of the manufacture of weapons.[78] The safeguard system would in addition fail to detect a clandestine weapons production system. Finally, there is no way to insure compliance with the basic provisions of Articles I and II of the NPT relating to the non-transfer or receipt of nuclear weapons.[79]

However, the safeguard system may be credited with performing its function without having created any major diplomatic disputes. The safeguards must insure the highest degree of confidence that no diversion occurs, yet simultaneously the IAEA

In addition, States conducting an international transfer of nuclear supplies or assistance may independently request IAEA coverage. Also, States party to the NPT can request that IAEA administer safeguards at particular facilities or over their entire nuclear program. Finally, parties to regional arrangements may request safeguard coverage to verify treaty compliance.

In order to complete their agreements with the non-nuclear weapon States as quickly and uniformly as possible after the NPT came into effect, the IAEA created a safeguard committee to formulate guidelines for these agreements. Over forty-seven countries actually participated in the work of the committee from June 1970 to May 1971. They produced a document entitled *The Structure and Content of Agreements Between the Agency and States Required in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons.* INTERNATIONAL ATOMIC ENERGY AGENCY, ANNUAL REPORT, 1 JULY 1974-30 JUNE 1975, at 39 (1975).

75. M. WILLRICH, *supra* note 10, at 58.

76. *Id.* at 121 n.42.

77. *Id.* at 102.

78. *Id.* at 120.

79. Firmage, *supra* note 41, at 725.

and the inspectors must carefully take into consideration sensitivities relating to national sovereignty.[80] This is a difficult diplomatic problem which, it appears, the Agency has handled exceptionally well.

This safeguard system performs the useful function of checking for diversion of nuclear materials from peaceful nuclear programs. However, it can be seriously questioned as an effective restraint on nuclear proliferation due to the lack of any enforcement provision. In addition, it fails to deal with other possible problem areas, such as the physical protection of nuclear materials.

III. The Third Phase: Uncertainty

The direction the present phase will take is still uncertain. The pause in vertical proliferation has ended and the threat of a drastic increase in the number of nuclear-armed countries seems imminent.[81]

A. *India*

India has clearly indicated its opposition to the NPT by refusing to sign it and has specifically stated its concern with the safeguards system.

> Institution of international controls on peaceful reactors and power stations is like an attempt to maintain law and order in a society by placing all its law-abiding citizens in custody while leaving its law-breaking elements free to roam the streets . . . . Reactors engaged in peaceful pursuits, and atomic power stations of the developing countries, do not in themselves pose any threat to the security of the international society.[82]

India's disregard for the NPT was further demonstrated by its detonation of a nuclear device on May 18, 1974, in the desert area of Rajasthan, approximately forty miles from the Indo-Pakistani border.[83] This detonation focused attention on the problem of non-proliferation of nuclear weapons since India was the first nation to develop weapons from a peaceful nuclear pro-

80. *1975 Hearings*, app. at 272-73.

81. *See generally* 122 Cong. Rec. S18,062 (daily ed. Oct. 1, 1976) (remarks of Senator Percy).

82. Statement by Representative of India to Eighteen-Nation Disarmament Conference, *quoted in* M. Willrich, *supra* note 10, at 124.

83. 4 Denver J. Int'l L. & Pol. 237 (1974).

gram. For ten years a climate had existed in which nations with the economic and technical capability for producing nuclear weapons had voluntarily abstained from developing them.[84] India became the sixth nation to demonstrate nuclear weapon capability and thus abruptly altered that climate.

India's decision magnified the numerous failings of the NPT and its lack of effective control over proliferation of nuclear weapons. At the time of the explosion, there had been much debate as to whether the NPT represented customary international law binding even those States not parties to the Treaty. It had been in effect for more than three years and over one hundred countries had acceded to it. However, the measure of whether a multilateral treaty has reached the level of customary international law has been described by Richard Baxter as follows:

> The process of establishing the state of customary international law is one of demonstrating what States consider to be the measure of their obligations. The actual conduct of States in their relations with other nations is only a subsidiary means whereby the rules which guide the conduct of States are ascertained. The firm statement by the State of what it considers to be the rule offers better evidence of its position than what can be pieced together from the actions of that country at different times and in a variety of contexts.[85]

India has clearly articulated its position regarding the NPT. Its decision to develop nuclear weapons was based upon three arguments. First, the NPT is discriminatory and therefore has no legal effect upon non-parties to the treaty. Second, India has made a distinction between nuclear weapons for peaceful purposes and those used for military purposes.[86] These first two arguments would not seem to seriously affect the establishment of customary international law in this area, since treaties are not required to be non-discriminatory,[87] and only a few other countries adhere to India's distinction regarding nuclear weapons for peaceful uses.[88] India's third rationalization probably creates the greatest threat of non-adherence to the NPT. India believes that

84. *1975 Hearings*, app. at 274.

85. Baxter, *Multilateral Treaties as Evidence of Customary International Law*, 41 BRIT. Y.B. INT'L L. 275, 300 (1968).

86. 4 DENVER J. INT'L L. & POL. 237, 247-50 (1974).

87. L.F. CHEN, STATE SUCCESSION RELATING TO UNEQUAL TREATIES 28 (1974), *citing* E. DE VATTEL, THE LAW OF NATIONS 194 (J. Chitty transl. 1858).

88. 4 DENVER J. INT'L L. & POL. at 250.

as a matter of self-defense it is entitled to maintain a military option in addition to its peaceful nuclear energy program.[89]

This rationale is probably the most compelling reason for non-compliance with the provisions of the NPT. India, as well as non-nuclear weapon States, is not convinced that the Security Council would honor its commitment to act in the event of nuclear aggression.[90] Without complete faith in that assurance, those States seriously threatened by aggression will attempt to follow India's lead. The volatile relationship between India and both Pakistan and China was a major consideration in its decision to join the group of nuclear weapon States. Israel and Taiwan find themselves in analogous situations.

B. *Recent Developments*

The first five-year review conference of the NPT was held in May 1975, as required by Article VII(3) of that treaty. In February 1976, the United States Government, through the executive branch and the Arms Control and Disarmament Agency, announced the convening of a number of bilateral and multilateral discussions with nuclear suppliers to develop common rules on safeguards and export controls. Finally, a bill entitled the Export Reorganization Act of 1976 was introduced into Congress.[91]

The Review Conference

It had been predicted that the first review conference of the NPT might be used by non-nuclear weapon States to lay the foundation for their later withdrawal from the Treaty.[92] However, in actuality it had the opposite effect. There had been virtually no movement toward adherence to the NPT since the Indian nuclear explosion in 1974; however, immediately preceeding the Conference, the Treaty was ratified by Belgium, the Federal Republic of Germany, Italy, Luxembourg, and the Netherlands, and was submitted to the Japanese Diet for ratification.[93] During the Conference, the NPT was ratified by three additional countries.[94]

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89. *Id.* at 248.

90. *Id.* at 251.

91. S. 1439, 94th Cong., 2d Sess. (1976).

92. *See* Bunn, *Horizontal Proliferation*, in NUCLEAR PROLIFERATION: PROSPECTS FOR CONTROL 34 (B. Boskey & M. Willrich eds. 1970).

93. *1975 Hearings*, app. at 273-74. The Japanese Diet has since approved it for ratification. Statement of President Ford, 12 WEEKLY COMP. OF PRES. DOC. 937 (May 24, 1976).

94. *1975 Hearings*, app. at 274.

The Conference reaffirmed support for the NPT and urged universal adherence. It was recommended that supplier States strengthen common export requirements and that IAEA safeguards be strengthened and universally applied. The Conference recognized that regional or multinational fuel-cycle centers may be an advantageous way to meet the nuclear power need of many States and also concluded that particular recommendations for the physical protection of nuclear materials be elaborated.[95]

These statements did not create any drastic changes in the area of non-proliferation. They mainly serve as an assessment of the present status of non-proliferation and a setting of guidelines for future action. This leaves the IAEA to effectuate these goals, and unfortunately there is no indication that it will promptly take the necessary actions.

Nuclear Suppliers' Agreement

In February 1976, the United States Government revealed that a number of nuclear supplier countries,[96] including itself, had reached an agreement over common guidelines for exporting nuclear material.[97] These guidelines included:

> Provisions for the application of IAEA safeguards on exports of material, equipment and technology;
>
> Prohibitions against using assistance for any nuclear explosions including those for "peaceful purposes;"
>
> Requirements for physical security measures on nuclear equipment and materials;
>
> Application of restraint in the transfer of sensitive technologies (such as enrichment and reprocessing);
>
> Encouragement of multinational regional facilities for reprocessing and enrichment; and
>
> Special conditions governing the use or retransfer of sensitive material, equipment and technology.[98]

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95. The Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Final Document, pt. 1, annex I, at 1-10, U.N. Doc. No. NPT/CONF/35/1 (1975).

96. Though the United States Government did not release the name or number of countries involved, the *New York Times* stated that Canada, China, Japan, the Soviet Union, and the United Kingdom were involved. N.Y. Times, Feb. 24, 1976, at 1, col. 8.

97. *Id.*

98. Statement of Secretary of State Kissinger, *Hearings on S. 1439 Before the Senate Comm. on Government Operations*, 94th Cong., 2d Sess. 769 (1976) [hereinafter cited as *1976 Hearings*]. The nuclear suppliers met again in June 1976 and were to have reconvened in late 1976 to review their progress. However, no information on these meetings or their results has been made public. S. Rep. No. 94-1193, 94th Cong., 2d Sess. 3 (1976).

The immediate problem with these guidelines is that they have no legal status but are merely unilateral declarations by the participating nations. Their validity is dependent upon the individual actions of the participants. It is highly questionable whether all the countries involved will abide by the policy set forth in the guidelines, and thus whether they will achieve their stated goal, *i.e.*, "to inhibit the spread of nuclear weapons while permitting nuclear exports of equipment to meet the world's growing energy needs."[99]

S. 1439—The Export Reorganization Act of 1976

As one of the major suppliers of peaceful nuclear technology,[100] actions by the United States in the field of nuclear exports can have a profound effect on proliferation. The first step toward limiting nuclear proliferation was taken in 1974 with the enactment of the Energy Reorganization Act[101] which attempted to strengthen the institutional check against unwise nuclear export actions. The Act abolished the Atomic Energy Commission and separated its functions into two new governmental agencies —the Nuclear Regulatory Commission [hereinafter referred to as NRC] and the Energy Research and Development Administration.

Senators Glenn, Percy, and Ribicoff introduced S. 1439[102] on April 15, 1975 to remedy several deficiencies in the Energy Reorganization Act.[103] The bill was completely revised on May 13, 1976 and reprinted.[104] The overall purpose of the bill was to reorganize the federal government's nuclear export structure in order to better control nuclear proliferation.[105] This bill was considered by the Senate Committee on Government Operations, the Joint Committee on Atomic Energy, and the House Committee on Foreign Relations. On August 31, 1976, it was referred back to the Senate.[106] The Senate took no action before expiration of the 94th

99. *Hearings, Feb. 23, 1976,* at 6.

100. It has been stated that the United States supplies approximately 70% of the world's peaceful nuclear technology. *1976 Hearings* 5.

101. Energy Reorganization Act of 1974, Pub. L. No. 93-438, 88 Stat. 1233 (codified in scattered sections of 5, 42 U.S.C.) (Supp. V, 1975)).

102. 94th Cong., 1st Sess. (1975).

103. S. Rep. No. 94-875, 94th Cong., 2d Sess. 3 (1976).

104. S. 1439, 94th Cong., 2d Sess. (1976).

105. *Id.* § 2(a) (1976).

106. Only the Joint Committee on Atomic Energy reported adversely on the bill. S. Rep. No. 94-1193, 94th Cong., 2d Sess. 1 (1976).

Congress and therefore another bill must be introduced in the 95th Congress.[107]

The bill sought extensive changes within the appropriate federal agencies, consolidating in the NRC all peaceful nuclear export licensing and approval authority, and designating the State Department as the primary agency responsible for negotiating agreements for nuclear cooperation.[108] In addition, the Arms Control and Disarmament Agency would be required to submit Nuclear Proliferation Assessment Statements on all United States nuclear agreements to the NRC, the State Department, and Congress.[109]

The Act would also require the President to review all nonproliferation activities of governmental agencies, to report annually to Congress on efforts to prevent stockpiling of weapons-grade material, to promote adherence to the NPT, to strengthen IAEA safeguards, to improve physical security against nuclear terrorism, to recover stolen or diverted material, and to impose sanctions against uncooperative nations.[110] Indeed, the Act goes so far as to request the President to promote international agreements with other nuclear supplier countries (Canada, France, the Federal Republic of Germany, Great Britain, Japan, and the Soviet Union, and others deemed appropriate) for cooperative supply of nuclear fuel services and for limitations upon sensitive nuclear exports.[111]

CONCLUSION

Two types of solutions have been proposed for the problem of nuclear proliferation. The first attempts to delay the spread of peaceful nuclear programs because of their adaptibility to nuclear weapon development. The second endeavors to establish a permanent system of controls and sanctions to deal with the inevitable horizontal proliferation.[112]

On a short-term basis, the problem has been approached through stricter physical security provisions for the protection of nuclear materials, establishment of regional reprocessing plants, and continuing nuclear supplier agreements. But the stricter

107. 122 CONG. REC. S18,063 (daily ed. Oct. 1, 1976) (remarks of Senator Percy).
108. S. 1439, 94th Cong., 2d Sess. §§ 2(a)(5), 4 (1976).
109. *Id.* § 7.
110. *Id.* § 8(c).
111. *Id.* § 12.
112. *1976 Hearings* 761.

physical controls have not been universally applied, regional reprocessing plants remain a future hope, and the United States will probably maintain its position of control in the group of nuclear suppliers for a maximum of two more years.[113] In addition, the delay in the spread of peaceful nuclear programs raises the possibility of Third World charges of denial of the benefits of nuclear energy. Nevertheless, past treaties and the IAEA safeguards have been successful in accomplishing two goals: the separation of peaceful and military uses of nuclear technology,[114] and the detection of diversion of nuclear materials.[115]

The long-term solution has not even been approached. International nuclear transactions between industrial firms continue to be negotiated on the basis of ordinary commercial practices,[116] within the restrictions placed on them by their national governments. West Germany has sold a complete nuclear fuel cycle to Brazil, and France intends to sell one to Pakistan.[117] While the United States has succeeded in halting South Korea's plan to purchase a reprocessing plant from France,[118] the United States has also promised substantial nuclear assistance to Egypt, India, and South Korea.[119] While nuclear material and technology continue to become more widespread, near-nuclear countries[120] are constantly faced with the decision whether to maintain a military option for security reasons. This seems to be the situation with which Israel is presently faced. The Israeli Government has implied that it is engaging in nuclear research for military as well as peaceful purposes.[121]

Any proposed framework must direct itself to both these short- and long-term goals. Despite the acceleration of attempts to control the spread of nuclear material, the reality appears to be that the possession of nuclear technology by a large group of countries will arrive sooner than the nuclear suppliers, the IAEA, and the world community are prepared to handle with adequate controls and effective sanctions.

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113. *1975 Hearings* 5.
114. COMPENDIUM 622.
115. Firmage, *supra* note 41.
116. COMPENDIUM 90.
117. S. Rep. 94-1193, 94th Cong., 2d Sess. 3 (1976).
118. *Id.*
119. *1976 Hearings* 6.
120. Twenty-six are generally considered candidates. COMPENDIUM 107.
121. Washington Post, Nov. 9, 1976, § A, at 11, col. 2.