

Chapter 6: International Nuclear Controls: Their History and Key Premises

The Nuclear Nonproliferation Treaty (NPT)

QUESTIONS TO BE ADDRESSED:

- I. How might NPT's premises and history matter to those trying to implement it?
- II. What were the premises of the first three articles of the NPT?
- III. What were the premises behind the balance of the NPT's articles?

It is easy to confuse the Nuclear Nonproliferation Treaty (NPT) with the Atoms for Peace Program, which led to the creation of the International Atomic Energy Agency (IAEA). Both efforts encouraged nuclear technology transfers and international atomic energy safeguards, and both called on nations to abandon efforts to acquire nuclear weapons.¹

Yet what distinguishes these nonproliferation initiatives from one another—their different views of which strategic developments were most worrisome—is far more important than any similarities they might share. Indeed, it is only by understanding how different each of these nonproliferation initiatives' strategic concerns were that we can appreciate what is uniquely sound and deficient about each.

1. See, for example, Lawrence Scheinman, *The International Atomic Energy Agency and World Nuclear Order*, Washington, D.C.: Resources for the Future, 1987, p. 18; Ian Smart, "A Defective Dream," p. 79; Bertrand Goldschmidt, "From Nuclear Middle Ages to Nuclear Renaissance," p. 111; Sigvard Eklund, "Reliable Supply: Respecting the 'Rules of the Game,'" p. 164; and Donald M. Kerr, "Future Unlike the Past," p. 213, all contained in *Atoms for Peace: An Analysis after Thirty Years*, edited by Joseph F. Pilat, Boulder, CO: Westview Press, 1985.

The Atoms for Peace Program was originally designed to reduce the threat supposedly posed by



Figure 1: an example of one weapon capable of starting an unauthorized war is the Davy Crockett

nuclear arsenals large enough to knockout most of America's major cities. In contrast, the negotiators of the NPT divided their attention between averting catalytic and accidental nuclear wars that could arise from the further spread of nuclear weapons and preventing unauthorized and accidental nuclear use that might come with the further build-up of the superpowers' nuclear arsenals.

The Atoms for Peace Program originally hoped to prevent Russia from acquiring a massive-knockout-blow-sized nuclear stockpile by getting Moscow to compete with the United States in the export of "peaceful" nuclear programs and nuclear fuel to the developing world. The program failed to focus on the threats posed by the spread of just a few weapons by smaller states and actively promoted the global spread of dual-use nuclear technologies. As a result, it accelerated realization of the nuclear proliferation threats the world now faces.

The NPT's proliferation legacy is more ambiguous. Because it originally focused on preventing the spread of just a few weapons to smaller states and spotlighted the technical connection between "peaceful" civilian and military nuclear programs, the treaty has helped prevent the spread of nuclear weapons to additional states. Midway through the treaty's negotiation, though, the treaty's authors focused on holding the nuclear superpowers acquisition of ever more nuclear weapons hostage to the threat of smaller states acquiring nuclear weapons of their own. As a result, the negotiators recognized an "inalienable" right to peaceful nuclear energy, which they left largely undefined regarding producing nuclear explosive fuels. They also made withdrawal from the treaty relatively easy.

Besides helping to distinguish the NPT from the Atoms for Peace Program, understanding the NPT's primary goals also is critical to understanding the treaty itself. In fact, understanding how the treaty's objective changed during its negotiation is essential to understanding how the treaty's terms are at odds at one another.

Those who first backed the treaty's negotiation in the late 1950s were primarily concerned with how horizontal proliferation (i.e., the spread of nuclear weapons to other nations) might catalyze nuclear wars between the superpowers or smaller states. This gave rise to the treaty's prohibitions and safeguards against sharing, accepting, or developing nuclear weapons and the

means to make them (Articles I, II, and III of the NPT).

A decade later, however, when the treaty's negotiation was nearly complete, the negotiators became preoccupied with how increasing vertical proliferation (the quantitative and qualitative improvement of the superpowers' strategic arsenals) might lead to unauthorized or accidental nuclear wars and prompt other nations to go nuclear. They believed that any state could deter another with a relatively small, finite number of nuclear weapons, but argued that all nations would be better off if they foreswore nuclear arms and promoted the peaceful uses of nuclear energy instead. This gave rise to treaty provisions stipulating that the nuclear weapons powers should share "peaceful" nuclear technology with the world's nonweapons states without reservation (Articles IV and V), to enter into good faith negotiations on effective measures to end the arms race (Article VI), and, if nonnuclear states felt threatened, to leave the treaty and acquire nuclear weapons of their own (Article X).

Both the NPT's strategic concern with horizontal proliferation and its faith in finite deterrence are reflected in the NPT. As result, to make sense of the treaty one must choose which concern — fear of nuclear weapons spreading or fear of superpower nuclear arms racing — should control its interpretation. Currently, the most popular view of the NPT is that it rests equally on three pillars: 1. sharing peaceful nuclear technology, 2. promoting nonproliferation controls, and 3. advancing disarmament. Promoting this view, although diplomatically convenient, masks the conflict between the two different concerns — preventing catalytic wars and ending nuclear competitions — that drove NPT negotiations and still dominate its implementation today.

The Irish Resolution and the First NPT Bargain

In the late 1950s, experts who worried about nuclear proliferation were hardly concerned about the spread of nuclear materials and specialized equipment to states such as North Korea or Iran. Instead, they focused on the actual and proposed U.S. transfer of nuclear weapons to Germany and members of the North Atlantic Treaty Organization (NATO) under what were called "dual key" control arrangements. Under these arrangements, the Eisenhower administration began deploying nuclear artillery in Europe for use by NATO forces. The United States retained custody of the nuclear artillery warheads, while U.S. and NATO armies were given nuclear-capable artillery tubes. If an occasion arose when the U.S. president decided use of nuclear artillery was necessary, he could order the release of the nuclear warheads to the NATO commander, and then the commander of the NATO member where the artillery was deployed would give

authority to release use of the nuclear-capable artillery tubes. Following this model, the United States deployed nuclear weapons to U.S. and NATO ground and air forces.

Warsaw Pact members and the world's neutral powers protested that U.S. authority over these weapons was less than complete. In 1956 and 1957, the Soviet Union objected to the U.S. stationing nuclear weapons in Germany. The Soviet Union also proposed a ban on the employment of nuclear weapons of any sort in Central Europe.² The United States, meanwhile, submitted a draft disarmament plan before the UN Disarmament Commission in which U.S. control of nuclear weapons could be transferred to NATO allies, and, if necessary, used to fend off an armed attack.³

Concern over such transfers was heightened further when, in 1958, the U.S. Congress passed an amendment to the U.S. Atomic Energy Act that permitted the transfer of weapons materials, design information, and parts to nations that had "made substantial progress in the development of nuclear weapons."⁴ Also, with the continued transfer of nuclear weapons to NATO, U.S. control arrangements became less rigid: One congressional investigation discovered German aircraft loaded with nuclear weapons that were fueled, ready to take off at a moment's notice.⁵

This trend toward more lax U.S. restraints on nuclear weapons "sharing" came as progress toward disarmament negotiations in the UN reached an impasse. The United States and the Soviet Union had agreed to a voluntary moratorium on nuclear testing in the fall of 1958, but the United States and its allies tied their continued adherence to this test ban on the progress being made toward disarmament and a general easing of East-West tensions. Last, but hardly least, the United States and the Soviet Union had threatened or considered using nuclear weapons against one another on at least eight separate occasions from 1953 to 1958.⁶

2. See "Soviet Proposal Introduced in the Disarmament Subcommittee: Reduction of Armaments and Armed Forces and the Prohibition of Atomic and Hydrogen Weapons, May 18, 1957," in U.S. Department of State, *Documents on Disarmament, 1945-1959*, Washington, D.C.: USGPO, 1960, Vol. 2, pp. 756-57.

3. See "Western Working Paper Submitted to the Disarmament Subcommittee: Proposals for Partial Measures of Disarmament, August 29, 1957," in U.S. Department of State, *Documents on Disarmament, 1945-1959*, Vol. 2, p. 879.

4. The Atomic Energy Act of 1954, U.S. Code secs. 54, 64, 82, 91(c), 92 as amended (1954).

5. See George Bunn, *Arms Control by Committee: Managing Negotiations with the Russians*, Stanford, CA: Stanford University Press, 1992, p. 62.

6. The Eisenhower administration had threatened to use or consider using nuclear weapons to end the Korean War in 1953, to save the French in Vietnam in 1954, to save the Republic of China in 1954, 1955, and 1958, and to



Figure 2: Irish Foreign Minister Frank Aiken

It was against this backdrop that Irish Foreign Minister Frank Aiken offered a draft resolution concerning the "Further Dissemination of Nuclear Weapons" before the First Committee of the UN General Assembly on October 17, 1958. The resolution was quite modest, It recognized that "an increase in the number of states possessing nuclear weapons may occur, aggravating international tensions" and would make disarmament "more difficult." Foreign Minister Aiken went on to recommend that the General Assembly establish an ad hoc committee to study the dangers inherent in the further dissemination of nuclear weapons.

Aiken offered to amend the resolution to urge parties of the UN's disarmament talks not to furnish nuclear weapons to any other nation while the negotiations were under way. He also encouraged other states to refrain from trying to manufacture nuclear weapons. Western support for such an amendment, though, was thin. On October 31, 1958, Aiken withdrew the resolution when it became clear that no NATO nation (including the United States) was yet ready to endorse the initiative.⁷

The following year, however, Aiken submitted a slightly revised version of the resolution to the General Assembly, making it clear that the proposal was a minimal proposition to which all parties ought to agree:

[It was] hardly realistic [to expect any] early agreement on the abolition of nuclear weapons...But what we can do is to reduce the risks which the spread of these weapons involves for this generation, and not to hand on to our children a problem even more difficult to solve than that with which we are now confronted...If no such agreement is made, they [the nuclear powers] may well be forced by mutual fear and the pressure of

prevent any invasion of Kuwait in 1958. Atomic howitzers also were deployed by U.S. forces landing in Lebanon in 1958, and Russia threatened the use of nuclear weapons to end the Suez crisis in 1956. See Peter Lyon, *Eisenhower: Portrait of the Hero*, Boston: Little, Brown and Company, 1974, pp. 534, 541, 583, 606, 610, 624, 639-40, 719, 775-76, 784.

7. The resolution initially passed with thirty-seven affirmative votes, but forty-four nations—including the United States, the United Kingdom, Italy, Japan, France, Greece, Belgium, Turkey, and the Netherlands—abstained. See "Irish Draft Resolution Introduced in the First Committee of the General Assembly: Further Dissemination of Nuclear Weapons, October 17, 1958," in U.S. Department of State, *Documents on Disarmament, 1945-1959*, vol. 2, pp. 1185-86.

their allies, to distribute these weapons, and so increase geometrically the danger of nuclear war.⁸

Why was such nuclear proliferation so dangerous and likely? Aiken gave two reasons. First, without an international nonproliferation agreement, "a sort of atomic *sauve-qui-peut*" was likely, causing states "despairing of safety through collective action," to seek nuclear weapons of their own. This trend was likely to get worse, since, in Aiken's view, there was "no conceivable addition" to the list of countries possessing nuclear weapons that would not undermine the pattern of regional and world politics that had "given the world the uneasy peace of the last few years."⁹ Aiken made this same point even more graphically several years later:

The sudden appearance of nuclear weapons and their almost instantaneous long-range delivery systems in a previous non-nuclear state may be tantamount, in the circumstances of the world today, to pushing a gun through a neighbor's window ... it may even be regarded as an act of war by neighboring countries who have not the second strike nuclear capacity possessed by great nuclear powers ... (who) may be able to eliminate the threat by taking limited measures.¹⁰

Faced with such nuclear threats, nonweapons states, then, would have cause to acquire nuclear weapons from their nuclear armed allies, who, out of a misguided sense of political convenience, were all too likely to assist. Such cooperation, though, would only give these smaller nations "the power to start a nuclear war, or to engage in nuclear black-mail, conceivably against a former ally." In short, without an international agreement against further nuclear weapons transfers, accidental and catalytic wars would become more likely and nations would drift into "a nightmare region in which man's powers of destruction are constantly increasing and his control over these powers is constantly diminishing."¹¹

8. See "Statement by Irish Foreign Minister (Aiken) to the First Committee of the General Assembly, September 23 and November 13, 1959," in U.S. Department of State, *Documents on Disarmament 1945-1959*, vol. 2, pp. 1474-78, 1520-26.

9. Ibid.

10. See "Statement of Irish Foreign Minister (Aiken) to the First Committee of the General Assembly, November 6, 1962," in U.S. Arms Control and Disarmament Agency, *Documents on Disarmament 1962*, Washington, D.C.: USGPO, 1963, pp. 1025-28.

11. See "Statement by the Irish Foreign Minister, November 13, 1959," in U.S. Department of State, *Documents on Disarmament 1945-1959*, vol. 2, 1520-26. In this speech, Foreign Minister Aiken attributes these views to Howard Simons, cited in note 13.

Aiken's second reason for believing the pace of proliferation would increase was the growing availability of civil nuclear reactor technology. As he explained before the UN, nuclear explosive plutonium was a direct by-product of nuclear electrical power reactors, and these generators were now being built in nonweapons states. As such, it would become increasingly difficult for the governments of these countries to "resist domestic pressure to take the further step of producing nuclear weapons" on the "grounds of economy and security, if not for considerations of prestige."¹² Thus, the twin structures of Aiken's proposal: Weapons states should not assist nonweapons states in acquiring nuclear weapons, and nonweapons states should refrain from acquiring them.

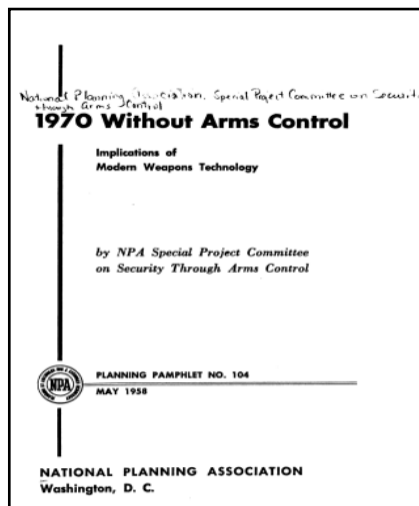


Figure 3: The 1958 report titled *1970 Without Arms Control*

These views, although radical, were hardly unique. In fact, Aiken's arguments reflected the views of America's academic elite and were drawn, in large part, from an American Academy of Arts and Sciences report on the future of arms control. Subsequently published by the National Planning Association, this study, *The Nth Country Problem: A World Wide Survey of Nuclear Weapons Capabilities*, was previewed in *Daedalus* and *The Bulletin of the Atomic Scientists*. The report eventually was highlighted in a separate National Planning Report published in May 1958 entitled *1970 Without Arms Control*.¹³

The study maintained that "the problem of achieving international arms control will become vastly more difficult when the three powers having nuclear weapons are joined by a fourth, and then a fifth, and possibly more."¹⁴ Further proliferation would also make nuclear war more likely. As Aiken noted before the UN, quoting from The National Planning Report:

The possibility of accidental or of unauthorized use of atomic weapons will increase. Irresponsible "mischief-making" by one small nation could catalyze a nuclear conflict

12. Ibid.

13. See David Inglis, "The Fourth Country Problem: Let's Stop at Three," *Bulletin of the Atomic Scientists*, January 1959, pp. 22-26; Howard Simons, "World-Wide Capabilities for Production and Control of Nuclear Weapons," *Daedalus* Vol. 88, No. 3, Summer 1959, pp. 385-409; William C. Davidson, Marvin I. Kalkstein, and Christophe Hohenemser, *The Nth Country Problem and Arms Control*, Washington D.C.: National Planning Association, January 1960, p. 108; and National Planning Association, *1970 Without Arms Control*, Washington, D.C.: National Planning Association, May 1958, p. 104.

14. National Planning Assoc., *1970 Without Arms Control*, p. 10.

between larger powers, or might cause preexisting nonnuclear hostilities to escalate into nuclear hostilities.¹⁵

This instability, the report argued, was being aggravated by the nuclear superpowers' introduction of "quick reaction" ballistic missile delivery systems that "tend to be inflexible so that full-scale war may grow out of inadvertencies or deliberate mischief."

These trends would make it "even more difficult to achieve and enforce arms control agreements, and much harder to inspire confidence in their effectiveness."¹⁶ Whatever else nuclear weapons and nonweapons states might do to control the nuclear threat, then, it was in neither groups' interest to see nuclear weapons spread.¹⁷ The study also emphasized that progress against nuclear proliferation was only possible in the context of larger disarmament arrangements such as a comprehensive test ban and a military production cut-off backed by an effective international inspection system.¹⁸

These points together would shape an entire decade of NPT negotiations. Initially, however, Aiken chose only to emphasize the need to block the further horizontal spread of nuclear weapons to additional nations. At first, he actually downplayed the dangers of continued superpower nuclear competition and denigrated demands to compensate nonweapons states for their forbearance in acquiring nuclear weapons of their own.

He conceded nonweapons nations might believe it was discriminatory to have to open up their nuclear activities to international inspections, while nuclear weapons nations did not. But this, Aiken insisted, was mistaken thinking. Instead, nonweapons states ought to welcome such inspections, as they could serve as a verification test bed for regional arms control arrangements (e.g., European nuclear weapons-free zones) and super power disarmament (e.g., the fissile material cut-off treaty), which most states claimed they favored.¹⁹

As for making superpower nuclear disarmament a quid pro quo for getting nonweapons states to back a nuclear nonproliferation treaty, Aiken believed this was also unwarranted. The key

15. Davidson, et al., *The Nth Country Problem and Arms Control*, xi.

16. Ibid.

17. See, for example, the conclusion in Simons, "World-Wide Capabilities," p. 407

18. See the findings in Davidson, et al., *The Nth Country Problem and Arms Control*, xix.

19. See "Statement by the Irish Foreign Minister, November 13, 1959," in U.S Department of State, *Documents on Disarmament 1945-1959*, vol. 2, 1520-26; and "Statement of Irish Foreign Minister, November 6, 1962," in U.S. Arms Control, *Documents on Disarmament 1962*, pp. 1025-28.

reason for demanding a nonproliferation treaty, after all, was to address the threat horizontal proliferation posed to enhance the prospects for nuclear disarmament. More important, the threat of nuclear war posed by the superpowers was pliable: Although "fraught with danger," Aiken argued, it was a threat "which we have managed to live with for a number of years" and for which "techniques" had been developed to deal with.²⁰ As such, instead of demanding nuclear disarmament first, the proper initial objective should be to get the superpowers to stop spreading nuclear weapons and to get nonweapons states to forswear acquiring them.

All of this should have reassured the United States and its allies. Initially though, they had misgivings. As has already been noted, most NATO nations abstained when the Irish resolution was first put to a vote in 1958. In 1959, the Soviet Union opposed the resolution, complaining that it was too permissive. As drafted, it would have allowed the United States to transfer nuclear weapons to European soil so long as the United States "retained control" of the weapons. France, meanwhile, abstained, arguing that the transfer of fissionable materials and nuclear weapons was difficult to control, and that the real problem was how to end their manufacture. At the time, France was developing its own nuclear arsenal and assisting the Israelis in acquiring nuclear weapons.²¹

As for the United States, it actually decided to support the 1959 Irish resolution. Yet, when the resolution was modified in 1960 to call upon the weapons states to declare their intention to "refrain from relinquishing control of such weapons to any nation not possessing them and from transmitting to it the information necessary for their manufacture," the United States again objected as it would have interfered with U.S.- British nuclear weapons cooperation.

Also, the United States was pushing the idea of giving NATO members nuclear missile-armed submarines to create a nuclear Multilateral Force (MLF). In 1960, U.S. officials feared the proposed nonproliferation resolution would jeopardize this initiative. As such, the United States raised a number of sweeping objections. The 1960 resolution failed to recognize the critical responsibility of the nuclear weapons nations. How could the Irish could expect other nations to forgo nuclear weapons if the weapons states refused to end their own nuclear build-up? A commitment of indefinite duration of the sort the resolution called for, U.S. officials complained,

20. See "Statement by the Irish Foreign Minister, November 13, 1959," in U.S. Department of State, *Documents on Disarmament 1945-1959*, vol. 2, pp. 1520-26.

21. See Lawrence Scheinman, *Atomic Energy Policy in France under the Fourth Republic*, Princeton, NJ: Princeton University Press, 1965, p. 183 ff.; Avner Cohen, "Stumbling into Opacity: The United States, Israel, and the Atom, 1960-63," *Security Studies* Vol 4, No. 2, Winter 1994, pp. 199-200; and *Israel and the Bomb*, New York: Columbia University Press, 1998, pp. 57-60, 73-75.

was unverifiable.²² Knowing full well that the United States was raising these concerns to protect their nuclear MLF initiative, the Soviets dropped their previous opposition and backed the 1960 resolution.

This produced a diplomatic impasse. To help break it, in 1961, Sweden submitted a resolution that recommended that

an inquiry be made into the conditions under which countries not possessing nuclear weapons might be willing to enter into specific undertakings to refrain from manufacturing or otherwise acquiring such weapons and to refuse to receive, in the future, nuclear weapons in their territories on behalf of any other country.²³



Figure 4: Swedish Foreign Minister, Östen Undén, requests study

The resolution was no longer focused on restraining weapons states from "relinquishing control" of nuclear weapons, but on getting nonweapons nations to refuse receiving nuclear weapons in their territories. All of NATO was being asked to stop hosting U.S. nuclear weapons. This was hardly lost on the Soviets, who immediately incorporated the Swedish language (i.e., "refrain from transferring control" and "refuse to admit the nuclear weapons of any other states into their territories") into their own draft treaty for general and complete disarmament in 1962.²⁴

Not surprisingly, the United States objected to the Swedish resolution, complaining that it effectively called "into question the right of free nations to join together in collective self-defense, including the right of self-defense with nuclear weapons if need be." Yet, the United States representative at the UN was equally at pains to emphasize that the United States supported the goal of nonproliferation. His proof: The U.S. Draft Program for General and Complete Disarmament, like the Irish Resolution, required nuclear weapons states to "refrain from relinquishing *control*" of nuclear weapons to nonweapons states.²⁵

22. See United Nations Department of Political and Security Council Affairs, *The United Nations and Disarmament 1945-1970*, New York: United Nations Publications, 1971, pp. 260-61.

23. The Swedish submitted this resolution, 1664 (XVI), December 4, 1961. See *ibid.*, p. 265.

24. *Ibid.*

25. See "Statement by the United States Representative (Yost) to the First Committee of the General Assembly:

For the next four years, the United States continued to insist that it was interested in promoting nuclear nonproliferation.²⁶ However, it opposed a variety of nonproliferation resolutions backed by the Soviets, Swedes, and others, which it believed would jeopardize existing nuclear sharing arrangements with NATO, including the possibility of creating a MLF nuclear force for a "United States of Europe" that would include Germany.

Ultimately, the United States only backed reaching an international nuclear nonproliferation agreement when it became clear that Germany and other NATO nations were not keen on reaching a MLF agreement. With the MLF initiative disposed of, the United States was able to allay Soviet fears that Washington would not arm Germany with nuclear weapons. This, in turn, facilitated Russian agreement to language that would allow the United States to deploy nuclear weapons to NATO assuming they were kept under U.S. control. With this, the United States was ready to negotiate a nonproliferation treaty.²⁷

Finite Deterrence and Nuclear Rights

By this time in early 1966, though, the terms of UN debate over proliferation had changed. In 1958, the horizontal spread of nuclear weapons (and the accidental or catalytic wars this spread might prompt) was seen as the primary threat to world security. At the same time, deterrence between the nuclear superpowers was viewed as being relatively stable. By the early 1960s, the reverse became the common view among arms experts. Now it was the nuclear weapons states' continued efforts to refine and expand their arsenals that was considered to be most likely to precipitate unintended nuclear wars. As India's UN representative put it in 1966:

[The] dangers of dissemination and independent manufacture [of nuclear weapons] pale into the background when one views the calamitous dangers of the arms race which is

Spread of Nuclear Weapons, November 30, 1961," in U.S. Arms Control and Disarmament Agency, *Documents on Disarmament, 1961*, Washington, D.C.: USGPO, 1962, pp. 691-92.

26. See, for example, "Statement by ACDA Director Foster to the Eighteen Nation Disarmament Committee: Nondissemination of Nuclear Weapons, February 6, 1964," in U.S. Arms Control and Disarmament Agency, *Documents on Disarmament, 1964*, Washington, D.C.: USGPO, 1965, pp. 32-33. Here, U.S. officials made the case for international nuclear nonproliferation restraint, since without it there "would be no rest for anyone ... no stability, no real security and no chance of effective disarmament" and because the acquisition of nuclear weapons by smaller countries would "increase the likelihood of the great Powers becoming involved in what would otherwise remain local conflicts."

27. See Bunn, *Arms Control by Committee*, pp. 66-75.

developing today as a result of the proliferation of nuclear weapons by the nuclear weapon Powers themselves, large and small. For many years now, the Super-Powers have possessed an over-kill or multiple-destruction capacity and even their second-strike capabilities are sufficient to destroy the entire world. They have hundreds of missiles of varying ranges which are capable of devastating the surface of the earth. They are continuing to test underground, miniaturizing warheads, improving penetration capabilities and sophisticating their weapons and missiles. The other nuclear weapons powers are also following the same menacing path, conducting atmospheric weapons tests, proceeding from manned-bomber delivery systems to missile systems and submarines.... It is here that the proliferation of nuclear weapons has its most catastrophic consequences.²⁸

Why this shift in thinking? Beginning in the late 1950s, a new theory of nuclear stability, known as finite deterrence, emerged in academic and military writings. According to this view, smaller nations could keep larger nuclear powers from threatening them militarily by acquiring a small number of nuclear weapons of their own. With their limited nuclear arsenal, the smaller nations might not be able to prevail in war against a larger power but could effectively "tear an arm off," by targeting the larger nation's key cities and, thus, deter such nations from attacking them.



Figure 5: Polaris SLBM, one example of finite deterrence in the early 1960s

A corollary to this point was a critique of the constant quantitative and qualitative improvement of the superpowers' strategic offensive and defensive forces. This build-up was considered to be unnecessary and provocative. Because a nation only needed a small nuclear arsenal to threaten to destroy an opponent's major cities, anything more, it was argued, was wasteful and only likely to encourage ever greater nuclear arms preparations between rivals.

The greatest nuclear danger, finite deterrence proponents insisted, was not accidental or catalytic wars that the horizontal spread of nuclear weapons might prompt, but rather the unintended wars that continued "vertical" proliferation of the superpowers' arsenals would make more likely. As the superpowers increased the size of their nuclear weapons stockpiles

28. See "Statement by the Indian Representative (Trivedi) to the First Committee of the General Assembly: Nonproliferation of Nuclear Weapons, October 31, 1966," in U.S. Arms Control and Disarmament Agency, *Documents on Disarmament, 1966*, Washington, D.C.: USGPO, 1967, p. 679.

and reduced the amount of time needed to deliver them, these experts insisted, the possibility of accidental nuclear wars occurring through miscalculation and accidents would steadily increase.²⁹

The earliest manifestations of this view in NPT negotiations came as smaller states tired of the superpowers' unwillingness to move on reaching any nonproliferation agreement until the NATO nuclear sharing issue was resolved. As has been noted, in 1961, the Swedes submitted a resolution before the UN General Assembly calling for an inquiry on the conditions under which nonweapons states might be willing to "refrain from acquiring nuclear weapons." The idea here was to force the nuclear weapons states to support reaching an agreement on nonproliferation by demonstrating the popularity of concluding such a treaty and by threatening to proceed without them.

The presumption of the Swedish inquiry—that nonweapons states might acquire nuclear weapons unless certain "conditions" were met—was clearly at odds with Aiken's original proposition that nonproliferation was equally a security imperative for both weapons and nonweapons states. Indeed, it suggested that a smaller state's acquisition of nuclear weapons was reasonable *unless* it received something in exchange for not proceeding.

This thinking was reflected in the 1962 replies to the UN secretary general's inquiry on the conditions under which nonweapons states might refrain from acquiring nuclear weapons. Of the sixty-two nations that replied, most wanted specific neighbors or all the states within their region to forswear acquiring nuclear weapons as a quid pro quo for them doing so. Several nations, including Italy (which was contemplating acquiring nuclear arms), wanted more — a halt in the superpowers' nuclear arms build-up.³⁰ This view received additional support from the

29. For the earliest popular presentations of finite deterrence theory see Pierre M. Gallois, "Nuclear Aggression and National Suicide," *The Reporter*, November 18, 1958, 23-26; P. H. Backus, "Finite Deterrence, Controlled Retaliation," *U.S. Naval Institute Proceedings*, March 1959, pp. 23-29; and George W. Rathjens, Jr. "Deterrence and Defense," *Bulletin of the Atomic Scientists*, September 1958, pp. 225-28. Elements of this line of thinking, especially with regard to the desirability of capping the superpowers' arms build-up could also be found in the American studies cited in note 13 that Aiken selectively quoted from when he first submitted his UN nonproliferation resolutions in 1958 and 1959.

30. In fact, Italy first voiced reservations about agreeing not to acquire nuclear weapons unless the nuclear weapons nations promised to disarm in a NATO gathering held in February 1962. Later that year, however, it acquiesced and supported a U.S. draft resolution that would allow the use of U.S. weapons by a multilateral NATO naval force. For details see George Bunn, Roland M. Timerbaev, and James F. Leonard, "Nuclear Disarmament: How Much Have the Five Nuclear Powers Promised in the Non-Proliferation Treaty," in *At the Nuclear Crossroads*, edited by John B. Rhinelander and Adam M. Scheinman (Lanham, MD: University Press of America, 1995), p. 15.

United States, Great Britain, and France. For them, general and complete disarmament was the best solution.³¹

For the next two years, though, continued debate with Russia and NATO members over establishing a European MLF prevented reaching any agreement on nonproliferation.³² In an effort to square the desire many states had for nuclear disarmament and the need to take action against proliferation, India and Sweden (both of whom were working on acquiring nuclear weapons of their own)³³ suggested a new approach. In June of 1965, they recommended combining a nonproliferation agreement with measures that would begin to cap the arms race between the superpowers. To induce the superpowers to disarm, Italy suggested that there be a time limit on how long nonnuclear nations had to refrain from acquiring nuclear weapons. With support from the world's nonaligned nations, the resolution passed overwhelmingly.³⁴

From this point on, negotiations for a nuclear nonproliferation treaty *presumed* that nonweapons states had a right to acquire nuclear weapons and that the only question was what they should get in exchange for not exercising it. For the Chinese, it was essential that nonnuclear nations not to be "deprived of their freedom to develop nuclear weapons to resist U.S.-Soviet nuclear threats."³⁵ For Egypt, acquiring nuclear arms was a sovereign prerogative only to be renounced if the superpowers made clear how they intended to disarm. As Egypt's representative to the UN disarmament talks explained:

The nonnuclear countries will in law renounce their right to nuclear weapons, but nuclear stockpiles and the threat of a nuclear confrontation will in fact continue to exist

31. See United Nations, *Disarmament 1945-1970*, p. 266.

32. See, for example, the exchange between the Soviet and U.S. representatives to the Eighteen-Nation Disarmament Committee July 2, 1964, in U.S. Arms Control, *Documents on Disarmament, 1964*, pp. 241-56.

33. On Sweden's nuclear weapons efforts at the time and India's debate and decision in 1965 to develop "peaceful" nuclear explosives, see Steve Coll, "Neutral Sweden Quietly Keeps Nuclear Option Open," *The Washington Post*, November 25, 1964, A1; and George Perkovich, *India's Nuclear Bomb*, Berkeley: University of California Press, 1999, pp. 60-85.

34. The resolution is discussed in United Nations, *Disarmament 1945-1970*, 269. Italy and others continued for the next two years to promote the idea of freeing nations of their nonproliferation obligations if the superpowers failed to disarm. See, for example, "Statement by the Burmese Representative (Maung Maung) to the Eighteen-Nation Disarmament Committee: Nonproliferation of Nuclear Weapons, October 10, 1967" and "Statement by the Italian Representative (Caracciolo) to the Eighteen-Nation Disarmament Committee: Draft Nonproliferation Treaty, October 24, 1967," in U.S. Arms Control and Disarmament Agency, *Documents on Disarmament, 1967*, Washington, D.C.: USGPO, 1968, pp. 463, 529.

35. See, for example, "Chinese Communist Comment on Draft Nonproliferation Treaty, September 3, 1967," in U.S. Arms Control, *Documents on Disarmament, 1967*, p. 381.

indefinitely....This de facto situation could always constitute an incitement to manufacture or acquire nuclear weapons. To diminish this risk still further it will be necessary, pending the complete elimination by radical measures of nuclear stockpiles and the nuclear threat, to include in the treaty a formal and definite indication of what the nuclear Powers propose to do with the existing nuclear armaments.³⁶

For Brazil, renouncing their prerogative to go nuclear left them open to nuclear blackmail by states that already possessed nuclear arms. As Brazil's representative explained:

If a country renounces the procurement or production by its own national means of effective deterrents against nuclear attack or the threat thereof, it must be assured that renunciation—a step taken because of higher considerations of the interests of mankind—will not entail irreparable danger to its own people. The public could never be made to understand why a government, in forswearing its defense capability, had not at the same time provided reasonable and lasting assurances that the nation would not be directly or indirectly, the object of total destruction or of nuclear blackmail.

For the Brazilians, this meant that any nuclear nonproliferation agreement had to include guarantees that nuclear weapons states would not use or threaten to use their weapons against nonweapons states.³⁷

Other states, however, thought that nothing less than nuclear disarmament was necessary to balance matters. Tunisia, like Brazil, was "not happy about renouncing their right to acquire nuclear weapons," but thought that it was too poor of a nation ever to try to acquire them and, thus, could only be truly secure in a disarmed world. Sweden, which was still developing its own nuclear option, shared Tunisia's views. It saw giving up "the most powerful weaponry that has ever been produced by man" as something it, as one of the "smaller and more defenseless nations," could only do if the superpowers disarmed.³⁸

36. See "Statement of the Egyptian Representative (Khallaf) to the Eighteen-Nation Committee on Disarmament, March 3, 1966," U.S. Arms Control, *Documents on Disarmament, 1966*, pp. 156-57.

37. See "Statement by the Brazilian Representative (Azeredo da Silveira) to the Eighteen-Nation Disarmament Committee: Draft Nonproliferation Treaty, August 31, 1967," in U.S. Arms Control, *Documents on Disarmament, 1967*, p. 370.

38. See "Address by President Bourguiba of Tunisia to the General Assembly {Extract}, September 27, 1967," and "Statement by the Swedish Representative (Myrdal) to the Eighteen-Nation Disarmament Committee: Nonproliferation of Nuclear Weapons, October 3, 1967," in U.S. Arms Control, *Documents on Disarmament, 1967*, pp. 429, 444.

Once it was established that nonweapons nations had a sovereign right to acquire nuclear weapons and that they should be compensated in some fashion for renouncing their intention to exercise it, it was only a short, additional step to suggest that they should be allowed to develop sensitive nuclear technologies so they would not be deprived of nuclear energy's "peaceful" benefits.

India, whose president privately had just decided to develop a "peaceful" nuclear explosive option, was most outspoken defending its "right" to "unrestricted" development of nuclear energy. This, in part, reflected India's well-known opposition to international safeguards. India had long objected to such nuclear inspections. These would interfere in India's prerogative to determine and execute its own economic development plans and to maintain its "inalienable right" to "produce and hold the fissionable material required for [India's] peaceful power programs."

After China exploded its first nuclear device in May 1964, India's desire to protect this "inalienable right" became a security imperative. As the Indian external affairs minister explained in 1967:

Most of the countries represented at the disarmament committee appreciated India's peculiar position with regard to the nonproliferation treaty.... China would be a nuclear state which would not be called upon to undertake any obligations. India could have become a nuclear country if it had exploded the bomb as China did. But because India had shown restraint, a desire for peace, and opposition to the spread of nuclear armaments, under this treaty it would find itself in a much worse position than China.... The result of our restraint is that we are a nonnuclear power which will have to suffer all the disadvantages. On the other hand, China, which has shown no restraint, will not suffer from any disadvantage even if it signs the treaty, as it is already a nuclear power.³⁹

What were the benefits the Indians felt they were entitled to? The external affairs minister left little doubt: Every nuclear "advantage" the weapons nations had, including nuclear testing should be enjoyed by all nonweapons states for "peaceful" purposes. Otherwise, the draft nonproliferation treaty would "seriously hamper and impede" peaceful nuclear research, since it would prevent nonnuclear countries from undertaking underground explosions for the purpose of carrying out nuclear research, while imposing no such obligation on nuclear weapons

39. See "Extract from News Conference Remarks by the Indian External Affairs Minister (Chagla), April 27, 1967," in U.S. Arms Control, *Documents on Disarmament, 1967*, pp. 204-5.

states. The ability to produce weapons-usable materials free from intrusive and discriminatory international safeguards and the freedom to develop all aspects of nuclear energy including "peaceful" nuclear explosives, the Indian minister argued, was critical to secure India's "sovereign right of unrestricted development of nuclear energy."⁴⁰

If it were just India that was making these arguments, they might be dismissed as being peculiar to a nation claiming it was "exposed to nuclear blackmail" and that, incidentally, was working on a "peaceful" nuclear explosive program. Yet, in making its case, India was able to cite the views of Brazil's representative who argued that:

...nuclear energy plays a decisive role in [the] mobilization of resources. We must develop and utilize it in every form, including the explosives that make possible not only great civil engineering projects but also an ever-increasing variety of applications that may prove essential to speed up the progress of our peoples. To accept the self-limitation requested from us in order to secure the monopoly of the present nuclear weapon Powers would amount to renouncing in advance boundless prospects in the field of peaceful activities.⁴¹

Of course, Brazil was also developing a nuclear weapons option at the time.⁴² It would be wrong, however, to view Brazil and India's interest in peaceful nuclear explosives (PNEs) without reference to the United States. America, after all, had been touting the possible advantages of peaceful nuclear explosives since the early 1960s as part of an argument against reaching a comprehensive nuclear test ban treaty. The United States was also enthusiastic about the need to develop fast breeder reactors that would use plutonium-based fuels.⁴³

Thus, Nigeria, Mexico, and Ethiopia, who had no nuclear power programs of any sort, were every bit as insistent as India and Brazil that any treaty on nonproliferation not place them "in a

40. Ibid.

41. See *ibid.*, and "Statement by the Brazilian Representative (Correa da Costa) to the Eighteen-Nation Disarmament Committee: Peaceful Uses of Nuclear Energy, May 18, 1967," in U.S. Arms Control. *Documents on Disarmament, 1967*, p. 226.

42. For a brief description of Brazil's attempt to secure an unsafeguarded military production reactor during this period see Leonard S. Spector, *Nuclear Proliferation Today*, New York: Vintage Books, 1984, pp. 236-38.

43. See Albert Wohlstetter et al., *Swords from Plowshares: The Military Potential of Civilian Nuclear Energy*, Chicago: University of Chicago Press, 1979, pp. 85-86, and Wohlstetter, et al., "The Spread of Nuclear Bombs: Predictions, Premises, Policies," vol. I-1 of *Can We Make Nuclear Power Compatible with Limiting the Spread of Nuclear Weapon?* Los Angeles: Pan Heuristics, November 15, 1976, ERDA Contract E(49-1)-3747), pp. 9-32, 89-108.

position of perpetual inferiority in any field of knowledge.”⁴⁴ Nigeria’s recommendation to solve this problem was

that nonnuclear weapons powers would not only have nuclear explosives, through an international organization, for their peaceful projects but also have opportunities for their scientists to develop to the fullest their intellectual capabilities in all fields, including that of nuclear-explosive technology.⁴⁵

These nations were just as insistent that whatever international safeguards the NPT required not interfere with their development of new power reactors and fuels. They were joined by Japan and Germany, who feared that the United States and Soviet Union would use the NPT’s safeguard provisions to steal industrial nuclear secrets from their advanced fast breeder reactor programs. As Germany’s foreign minister explained in 1967:

The unhindered civilian utilization of the atom is a vital interest of the Federal Republic...It is known that German scientists are working with the prospect of success on the development of the second generation of reactors, the so-called fast breeders...We go on the assumption that the placing into effect of controls does not interfere with the economic operations of factories, does not lead to the loss of production secrets, but counters the dangers of misuse. For this purpose it is adequate to control the end-product points, and to have a control which possibly could be exercised by automated instruments.⁴⁶

Germany’s foreign minister added that nations like his own were already apprehensive of the nuclear weapons states trying to monopolize the civilian nuclear field by dint of their commanding lead in military nuclear technology. At least as great a worry, he argued, was the extent to which inspections under the proposed NPT might compromise the pace and secrecy

44. See, for example "Statement by the Ethiopian Representative (Zelleke) to the Eighteen-Nation Disarmament Committee: Nonproliferation of Nuclear Weapons, October 5, 1967"; and "Statement by the Mexican Representative (Castaneda) to the Eighteen-Nation Disarmament Committee: Latin American Nuclear-Free Zone, May 18, 1967," in U.S. Arms Control, *Documents on Disarmament, 1967*, pp. 228, 449-50.

45. See "Statement by the Nigerian Representative (Sule Kolo) to the Eighteen-Nation Disarmament Committee: Draft Nonproliferation Treaty, August 31, 1967," in U.S. Arms Control, *Documents on Disarmament, 1967*, p. 377. The Germans also shared this view. See, for example, "Statement by Foreign Minister Brandt to the Bundestag: Nonproliferation of Nuclear Weapons [Extracts], February 1, 1967," in *ibid.*

46. See "Statement by Foreign Minister Brandt to the Bundestag on Proposed Nonproliferation Treaty, April 27, 1967," in *Documents on Disarmament, 1967*, pp. 211-12.

of nonweapon states' civil nuclear development.⁴⁷

In the end, the NPT's preamble and Article III stipulated that nations, such as Germany, could meet their safeguards obligations through somewhat less threatening but "equivalent" procedures under EURATOM, that inspections would be restricted to monitoring the flows of source and fissionable materials at "certain strategic points," and that they would be designed "to avoid hampering the economic or technological development of the Parties."

The NPT also emphasized in Articles IV and V that nothing in the treaty should be "interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production, and use of nuclear energy for peaceful purposes without discrimination." Indeed, the treaty called on all parties to "undertake to facilitate" the "fullest possible exchange of equipment, materials, and technological information for the peaceful uses of nuclear energy." The treaty established procedures for sharing the "potential" benefits of peaceful nuclear explosives, although it prohibited the direct transfer of explosive devices to or the development of such devices by nonweapon states.

Finally, the treaty called on the weapons states in Article VI "to pursue negotiations in good faith on effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament." Even the Italians' suggestion of being able to leave the treaty to leverage superpower nuclear reductions was retained after a fashion in Article X. The Italians' specific six-month option was rejected along with Nigerian demands that the NPT explicitly empower members to withdraw if the treaty's disarmament aims were "being frustrated."⁴⁸ But it was agreed that the treaty would not be of indefinite duration. Instead, it would last twenty-five years and be reviewed as to whether or not it should be extended and, if so, for how long. As the Swiss noted, it was "preferable" that the treaty be "concluded for a definite period" so as to avoid "tying" the hands of nonweapon states who could not be expected to wait indefinitely on the weapons states to disarm.⁴⁹ Also, it was agreed that any party to the treaty, under Article X, retained the right to withdraw with three months' notice if it "decides that extraordinary events, related to the subject matter of this treaty, have jeopardized the supreme interests of its

47. Ibid.

48. See "Statement by the Nigerian Representative (Sule Kolo) to the Eighteen-Nation Disarmament Committee: Draft Nonproliferation Treaty [Extract], November 2, 1967," in U.S. Arms Control, *Documents on Disarmament, 1967*, pp. 557-58.

49. See "Swiss Aide Memoire to the Co-Chairmen of the Eighteen-Nation Disarmament Committee: Draft Nonproliferation Treaty, November 17, 1967," in U.S. Arms Control, *Documents on Disarmament, 1967*, p. 573.

country."⁵⁰

What Bargain Was Struck?

Reading the NPT today, much of this history is still relevant. Certainly the original bargain of the Irish resolutions of the late 1950s is clearly reflected in the treaty's first two articles, which prohibit the direct or indirect transfer and receipt of nuclear weapons, nuclear explosives, or control over such devices. The Irish resolutions are also reflected in Article III, which calls on all treaty parties to accept and negotiate a system of safeguards that would "[prevent] diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices." Finally, the treaty makes it clear in Article IV that parties to the NPT could only exercise their right to develop peaceful nuclear energy "in conformity with Articles I and II."

Beyond this, the NPT's framers made it clear that they shared Foreign Minister Aiken's original concerns about horizontal proliferation. The Germans, for example, defended the NPT "because it is frightening to think what would happen if possession of nuclear weapons were spread chaotically through the world, if some adventurous state were one day irresponsibly to use such a weapon." Echoing this view, Germany's foreign minister argued that "even only one additional nuclear power would start a chain reaction that would be hard to control."⁵¹ The Canadians made essentially the same point, arguing that some discrimination against nonweapon states was "the only alternative to allowing the continued spread of nuclear weapons...and such a process in the end should have no other result than nuclear war...on the greatest scale."⁵² The British representative to the General Assembly was just as emphatic:

50. This language meant that nonweapon nations might be compelled to withdraw if the weapons states did not live up to their pledge to disarm, see "Statement by the Swedish Representative (Myrdal) to the Eighteen-Nation Disarmament Committee: Nonproliferation of Nuclear Weapons, February 8, 1968"; "Statement by the Ethiopian Representative (Makonnen) to the First Committee of the General Assembly: Nonproliferation of Nuclear Weapons, May 6, 1968"; and "Statement by the Indian Representative (Husain) to the Eighteen-Nation Disarmament Committee: Nonproliferation of Nuclear Weapons, February 27, 1968," in U.S. Arms Control and Disarmament Agency, *Documents on Disarmament, 1968*, Washington, D.C.: USGPO, 1969, pp. 45, 116, 293-94.

51. See "Television Interview with Chancellor Kiesinger: Nonproliferation Negotiations [Extract], February 17, 1967"; and "Statement by Foreign Minister Brandt to the Bundestag on Proposed Nonproliferation Treaty, April 27, 1967," in U.S. Arms Control, *Documents on Disarmament, 1967*, pp. 91, 215.

52. See "Statement by the Canadian Representative (Bums) to the Eighteen-Nation Disarmament Committee: Nonproliferation of Nuclear Weapons, August 3, 1967," in U.S. Arms Control, *Documents on Disarmament 1967*, p. 315.

We are concerned not only that new possessors of nuclear weapons may employ them against each other, or against a non-nuclear state; we see an even greater danger in the possibility that the use of nuclear weapons by a third country could precipitate a war which would end in a nuclear exchange between the two so-called Superpowers. In our view, and I would think in that of the Soviet Union as well, each additional nuclear power increases the possibility of nuclear war, by design, by miscalculation, or even by accident.⁵³

On the other hand, there were more than a few UN representatives who viewed the NPT and its key provisions through the lens of finite deterrence. By this light, horizontal proliferation threats were simply derivative of the superpowers' arms race and of less import. As India's UN representative explained:

Further proliferation is only the consequence of past and present proliferation and unless we halt the actual and current proliferation of nuclear weapons [in nuclear weapons states], it will not be possible to deal effectively with the problematic danger of further proliferation among additional countries.⁵⁴

Clearly, this view, and the view that all states had inalienable rights to unhindered access to civilian nuclear technology and to withdraw from the NPT if the superpowers did not disarm or if their security interests were at serious risk were behind Articles IV, V, VI, and X, as well as most of the NPT's preamble. The wording of Articles I and II, in contrast, had remained virtually unchanged since treaty negotiations began in the early 1960s and reflected the original Irish concerns about accidental and catalytic nuclear wars that further horizontal proliferation might prompt.

Unfortunately, the two views are at odds. Certainly, it is difficult to argue that the further spread of even small numbers of nuclear weapons to other nations will significantly increase the risk of accidental or catalytic nuclear war and, yet, at the same time, maintain that nonweapons states retain a right to withdraw from the treaty and acquire such weapons to get the world's weapons states to limit their own nuclear arsenals. Thus, the debate over what constituted "peaceful" nuclear development "in conformity with Articles I and II" under Article IV and what effective

53. "Statement by the British Representative (Hope) to the First Committee of the General Assembly, December 14, 1967," in U.S. Arms Control, *Documents on Disarmament, 1967*, p. 458.

54. See "Statement by the Indian Representative (Trivedi) to the Eighteen-Nation Disarmament Committee: Nonproliferation of Nuclear Weapons, September 28, 1967," in U.S. Arms Control, *Documents on Disarmament, 1967*, p. 432.

safeguards "with a view to preventing diversion" under Article III continued well after the establishment of the NPT.

Those who believed that the superpowers' arms build-up was the key threat to peace insisted that the world's nonnuclear states should have unhindered access to nuclear energy technology so long as it was not intended for bombs. In their view, it would be unfair to deprive the world's nuclear have nots of this technology (which the world's nuclear weapons states were already enjoying) after securing their avowal not to acquire nuclear weapons. As they saw it, so long as nuclear transfers were made under established safeguards procedures, they automatically should be viewed as being "in conformity with Articles I and II." Thus, the Dutch, Belgians, and Luxembourgish and, at times, even the Americans saw the line between safeguarded and unsafeguarded activities under the NPT as being quite bright.⁵⁵ As the Dutch representative explained, unless it was clear that the nuclear assistance was going to build nuclear weapons, it should be assumed it was not:

My delegation interprets Article I of the draft treaty to mean that assistance by supplying knowledge, materials and equipment cannot be denied to a nonnuclear weapon State until it is clearly established that such assistance will be used for the manufacture of nuclear weapons or other nuclear devices. In other words, in all cases where the recipient parties to the treaty have conformed with the provisions of Article III, there should be a clear presumption that the assistance rendered will not be used for the manufacture of nuclear weapons and other explosive devices.⁵⁶

The Americans were just as insistent that "peaceful applications of energy derived from controlled and sustained nuclear reactions—that is, reactions stopping far short of explosion" had "nothing to do with nuclear weapons" and, thus, development of such applications would not be affected by the NPT's prohibitions.⁵⁷ As the U.S. State Department's own Policy Planning Staff explained in an internal study:

55. See, for example, Eldon V. C. Greenberg, *The NPT and Plutonium: Application of NPT Prohibition to "Civilian" Nuclear Equipment, Technology and Materials Associated with Reprocessing and Plutonium Use*, Washington, D.C.: Nuclear Control Institute, 1993, pp. 18-19.

56. See "Statement by the Dutch Representative (Eschauzier) to the First Committee of the General Assembly: Nonproliferation of Nuclear Weapons [Extract], May 6, 1968," in U.S. Arms Control, *Documents on Disarmament, 1968*, pp. 295-96.

57. See "Statement by ACDA Director Foster to the First Committee of the General Assembly: Nonproliferation of Nuclear Weapons, November 9, 1966," in U.S. Arms Control, *Documents on Disarmament, 1968*, p. 721.

After the NPT, many nations can be expected to take advantage of the terms of the treaty to produce quantities of fissionable material. Plutonium separation plants will be built; fast breeder reactors developed. It is possible that experimentation with conventional explosives that might be relevant to detonating a nuclear bomb core may take place. In this way, various nations will attain a well-developed option on a bomb. A number of nations will be able to detonate a bomb within a year following withdrawal from the treaty; others may even shorten this period.⁵⁸

Most NPT negotiators were aware of this problem. Thus, Spanish and Mexican attempts to create a duty on the part of the nuclear haves to provide nuclear energy aid to the nuclear have nots were explicitly rejected by an overwhelming majority of UN members. Reference to "the entire technology of reactors and fuels" in the NPT's text was explicitly rejected as well.⁵⁹

These rejections suggested that the NPT's framers understood that some forms of civil nuclear energy—for example, weapons-usable nuclear fuels and their related production facilities—were so close to bomb making that sharing them might not be in "conformity" with Articles I and II. Some of the NPT's framers understood that inspections that lived up to Article III's requirement to "avoid hampering" nations' "technological development," and that were in accordance with the NPT's desire to focus on the "flow" of source and special fissionable materials at "certain strategic points," would have difficulty accounting for significant quantities of weapons-usable material at enrichment and reprocessing facilities and at plutonium and highly enriched uranium fuel fabrication plants. In these cases, timely detection of diversions be unlikely.

As such, mere inspections of these nuclear activities and materials might only mask the probable transfer or acquisition of nuclear weapons. This, in turn, would undermine the NPT's prohibitions in Articles I and II and Article III's stricture that safeguards had to verify member nations' fulfillment of their NPT obligations.⁶⁰

58. Department of State, Policy Planning Council, "After NPT, What?" May 28, 1968, NSF, Box 26, LBJL, as cited in Avner Cohen, *Israel and the Bomb*, New York: Columbia University Press, 1998.

59. See "Spanish Memorandum to the Co-Chairmen of the Eighteen-Nation Disarmament Committee, February 8, 1968," in U.S. Arms Control, *Documents on Disarmament, 1968*, p. 40; and "Mexican Working Paper Submitted to the Eighteen-Nation Disarmament Committee: Suggested Additions to Draft Nonproliferation Treaty, September 19, 1967," in *Documents on Disarmament, 1967*, pp. 394-95.

60. For this interpretation, see Greenberg, *The NPT and Plutonium*, and Arthur Steiner, "Article IV and the 'Straightforward Bargain'" (PAN Paper 78-832-08), in Albert Wohlstetter et al., *Towards a New Consensus on Nuclear Technology*, vol. II (Supporting Papers, U.S. Arms Control and Disarmament Agency, ACDA Report No. PH-



Figure 6: January 10, 2003, Kim Jong Il announced N. Korea's NPT withdrawal was finalized

Unfortunately, the NPT's negotiating record alone can hardly clarify these matters. Indeed, tensions between the NPT's first three articles and those that follow in the NPT still exist today. Unaligned nations, such as Indonesia and Mexico, still argue that weapon states must go much further in reducing their nuclear arsenals and in sharing the benefits of peaceful nuclear energy to keep nonweapon states from abandoning the NPT. And just what constitutes effective safeguards under the treaty is as much a concern for trouble nations (such as North Korea, Saudi Arabia, and Iran) and for dangerous nuclear activities (such as reprocessing in Japan and enrichment in Iran).

Yet, a number of things have changed since 1968. Instead of a bipolar rivalry, today there are three superpowers—the United States, Russia, and China. Rather than an ever-escalating quantitative nuclear arms rivalry that was run through the 1980s with the Soviet Union, the total number of nuclear weapons the United States, Russia and China today are now less than one-fifth the top Cold War figures.

Nor is the supposed stability that might come from threatening to attack an opponent's cities anywhere near as compelling as once seemed. Certainly, with the release and analysis of information on the Cold War, it now appears that nuclear deterrence between the superpowers was anything but automatic or guaranteed.⁶¹ As for finite deterrence, it has hardly proved to be as cheap, finite or easy as originally promised. In the French case, developing and maintaining a finite deterrence force (the Force de Frappe) demanded France spend billions of dollars to field several generations of strategic systems that never seemed quite credible (or survivable enough) even against a limited Soviet attack. Smaller nations, such as India and Pakistan, now aiming to deter their near nuclear neighbors are likely to face similar challenges that proportionately will be at least as stressful.⁶²

78-04-832-33).

61. See, for example, Richard K. Betts, *Nuclear Blackmail and Nuclear Balance*, Washington, D.C.: The Brookings Institution, 1987; Scott D. Sagan, *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons*, Princeton, NJ: Princeton University Press, 1993; "More Will Be Worse," in Scott Sagan and Kenneth Waltz, *The Spread of Nuclear Weapons: A Debate*, New York: W. W. Norton, 1995, pp. 47-91; and Bruce Blair, *Strategic Command and Control*, Washington, D.C.: The Brookings Institution, 1985, pp. 83-240. Many of the problems highlighted in these works were first forecast in Albert Wohlstetter, "The Delicate Balance of Terror," *Foreign Affairs*, January 1959, pp. 211-34.

62. See Albert Wohlstetter, "NATO and the N+1 Country," *Foreign Affairs*, April 1961, pp. 355-87; Francois Heisbourg, "The Prospects for Nuclear Stability Between India and Pakistan," *Survival*, Winter 1998-99, pp. 77-92;

As for the promised benefits of peaceful nuclear power, these too now seem less compelling. Certainly, few, if any nations, now believe peaceful nuclear explosives promise any economic benefits. The United States, India, and Russia—the only nations to experiment with such devices—no longer use them, and even Brazil and Argentina, who initially rejected the NPT because it would not allow them to acquire such devices, have renounced their development. Viable nuclear electricity, meanwhile, has been limited to existing uranium-fueled thermal reactors operating only in the largest economies in North America, Europe, and East Asia and, then, only with heavy government subsidies. Nor do corporate economic analyses of how best to reduce carbon emissions support additional investments in the construction of new, large reactors.⁶³ The economical use of weapons-usable plutonium or mixed-oxide fuels in thermal or fast reactors, is also, at best, many decades away.⁶⁴

Meanwhile, the security dangers of nuclear power programs in certain regions have become all too apparent. Iraq, Iran, North Korea, Taiwan, Saudi Arabia, South Korea, Egypt, India, Syria and Algeria all have had nuclear energy programs that were monitored by the IAEA. Yet, all have either developed nuclear weapons or harbored a desire to do so. Each has attempted to evade comprehensive IAEA inspections. It is unclear if even special IAEA inspections could provide sufficient warning of dangerous activities in such politically turbulent nations.⁶⁵ IAEA monitoring of plutonium fabrication and reprocessing activities in such stable nations as Japan have also been criticized as being dangerously deficient. In fact, the amount of weapons-usable material such plants may produce threatens to exceed the amount of fissile material currently present in weapon state arsenals.⁶⁶

Neil Joeck, *Maintaining Nuclear Stability in South Asia*, Adelphi Paper 312, Oxford: Oxford University Press for the IISS, 1997; and Clayton P. Bowen and Daniel Wovlven, "Command and Control Challenges in South Asia," *The Nonproliferation Review*, Spring-Summer 1999, pp. 25-35.

63. McKinsey & Company, "Greenhouse gas abatement cost curves," accessed October 11, 2016, available at <http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/greenhouse-gas-abatement-cost-curves>.

64. For the last comprehensive economic forecast as to when such fuels might make economic sense, see, for example, Brian G. Chow and Kenneth A. Solomon, *Limiting the Spread of Weapon-Usable Fissile Materials*, Santa Monica, CA: The RAND Corporation, October 1993, pp. 25-54.

65. See David Kay, "Detection and Denial: Iraq and Beyond," *The Washington Quarterly* Vol 18, No. 1, Winter 1995, pp. 85-105.

66. See David Albright, *Separated Civil Plutonium Inventories: Current and Future Directions*, Washington, D.C.: Institute for Science and International Security, 2000; Chow and Solomon, *Limiting Fissile Materials*, pp. xiv-xv; and Paul Leventhal, "IAEA's Safeguards Shortcomings—A Critique" Washington, D.C.: Nuclear Control Institute,

The major nuclear supplier states understood these limitations. Shortly after the NPT was signed, efforts began to determine precisely what should be safeguarded under the treaty and how. This task was assumed by the Zangger Committee (named after its chairman, Claude Zangger of Switzerland), which first met in 1971.⁶⁷ This committee developed a trigger list of items and nuclear materials that should be subject to IAEA safeguards, but the key nuclear supplier nations did not adopt it until they were compelled to do so by an event that the NPT's framers hoped would never happen.

In May 1974, India exploded a "peaceful" nuclear device that employed "civilian" U.S., Canadian, and Western European reprocessing and heavy water reactor technology and hardware. Although India had not signed the NPT, this event, perhaps more than any other, raised doubts about the adequacy of merely securing peaceful end use pledges in exchange for supplying sensitive civilian nuclear technology—an approach many NPT proponents had hoped would be sufficient.⁶⁸ Worse still, for states demanding free access to civilian nuclear technology, it soon gave rise to international control efforts that were explicitly discriminatory.

In an effort to soften the treaty's discrimination between the five recognized nuclear armed states (the United States, Russia, China, France, and the UK) and the rest of the world, the United States and most other governments have argued that the NPT actually rests equally on "three pillars." These consist of 1. sharing peaceful nuclear technology, 2. promoting nonproliferation controls, and 3. advancing global disarmament. Although popular, this view is contestable.

September 12, 1994.

67. See Fritz W. Schmidt, "The Zangger Committee: Its History and Future Role," *The Nonproliferation Review*, Fall 1994, pp. 38-44. For more detailed information on the history of the Zangger Committee, see the Federation of American Scientists website, <https://www.nonproliferation.org/wp-content/uploads/npr/schmid21> and www.fas.org/nuke/control/zangger/index.html

68. For one of the earliest, most comprehensive critiques of the NPT and IAEA, which followed the Indian test explosion, see Albert Wohlstetter, et al., "The Military Potential of Civilian Nuclear Energy," *Minerva*, Autumn-Winter 1977, pp. 387-538, which is an abridged version of a 1975 U.S. Arms Control and Disarmament Agency study that was subsequently published in full in 1979 by the University of Chicago Press as *Swords from Plowshares*.



Figure 7: The three pillars of the NPT

First, even though encouraging nuclear weapons restraint can support nonproliferation indirectly, it is unclear how making nuclear disarmament a legally binding quid pro quo for adopting sound nonproliferation measures would work. In practice, smaller states have held their adoption of nonproliferation measures hostage to the superpowers doing more to disarm. Claiming insufficient progress on this front gives them a diplomatic pretext to threaten to acquire nuclear weapons themselves. From a nuclear control perspective, none of this is helpful. Resisting needed nonproliferation controls only increases the prospects for more nuclear weapons proliferation. This, in turn, is only likely to increase demand for more nuclear armament by weapons and nonweapons states alike.

Second, it is unclear how supplying nonweapons states with the benefits of truly “peaceful” nuclear technology could assist in promoting tighter nonproliferation controls. If the technology in question is genuinely benign, by definition, it ought to be easy to safeguard effectively against military diversions and so be safe to share free of any apprehensions it might be diverted to make bombs. If the nuclear item in question is also profitable to sell, it is difficult to understand why nuclear supplier states would need additional incentives, much less nonproliferation ones, to share it.

On the other hand, if what was being sold is proliferation-prone (i.e., close or essential to bomb making) and, therefore, dangerous to share, it is unclear why any state eager to promote nuclear nonproliferation would think it had an NPT obligation to transfer it. Again, effective nuclear nonproliferation presumes the sharing of only truly “peaceful” nuclear goods and technologies.

These nuclear items and know-how are so far from making bombs that attempts to divert them for this purpose could be detected early and reliably enough to intervene effectively to prevent any weapons from ever being built. The alternative would be that there is an NPT obligation to share dangerous nuclear technologies and goods that can bring a nonweapons state to the very brink of acquiring bombs. But how much nonproliferation sense does encouraging such commerce or mechanically holding adoption of sound nonproliferation measures hostage to further nuclear disarmament make? The question is rhetorical.