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From one point of view, nonproliferation policy looks like the most frustrating effort since the tidal policies of King Canute. "Unless the system of states undergoes a revolutionary transformation, any suggestion that further proliferation can be stopped borders on the absurd."[1] Such an international millennium is improbable, but the spread of nuclear technology to an increasing number of nations is a certainty. The result, according to this conventional wisdom, is a hopeless situation.

But whether the policy prospects are hopeless or not depends upon the policy objective. If the policy objective is defined as preventing another explosion of a nuclear device, then the prospects are indeed gloomy. If the policy objective is to reduce the rate and degree of proliferation in order to be able to cope with the destabilizing effects, then the situation is by no means hopeless.

What is remarkable from this second point of view is that the rate of proliferation has not been faster. Of the score or more of states that could probably have exploded a device if they had chosen to do so, less than a third so chose in the past three decades. From a broader perspective, the policy objective is to maintain the presumption against proliferation. The great danger is

As a Deputy Undersecretary of State, the author (now professor of Government at Harvard) was responsible for much of the policy discussed. He wishes to make readers aware of this possible barrier to objectivity in judgments, though every effort has been made to assure that the statements in the article are accurate. For their comments he wishes to thank (but not implicate) McGeorge Bundy, John Deutch, Leonard Ross, Peter Cowhey, Barry Steiner, Reinhard Rainer, Randy Rydell, David Deese, Michael Mandelbaum, George Quester, Kenneth Waltz, and others.

[1] J. J. Weltman, "Nuclear Revolution and World Order," *World Politics* XXXII (January 1980): 192.

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the exponential curve of "speculative fever"—an accelerating change in rate. In such a situation, general restraints break down and decisions to forebear are reconsidered because "everyone is doing it." Such scrambles have occurred in international politics—witness the rapid partition of Africa in the third quarter of the nineteenth century or the rapid extension of coastal states jurisdiction in the oceans during the past decade. Preventing the development of such a situation with regard to nuclear proliferation provides a long-term objective for a policy that will not end with a bang. It is a feasible objective and there have been some successes in its pursuit over the past four years. Ironically, these gains are currently threatened on one side by those who pursue a broader anti-nuclear agenda and assert it as antiproliferation policy, and on the other side, by those whose satisfied view of the past leads them to belittle the risks of proliferation in the future.[2] This essay will assess the central gains and mistakes of the last few years and outline the major problems of maintaining a nonproliferation regime in the future.

Building the nonproliferation regime: 1950s and 1960s

It has been said that the ultimate success of a national policy occurs when a country is able to elevate its interest to the level of a general principle. In that sense, American nonproliferation policy over the years has been surprisingly successful. The United States has helped to foster an international regime that establishes a general presumption against proliferation. International regimes are the sets of rules, norms, and procedures that regulate behavior and control its effects in international affairs.[3] Regimes are seldom perfect. They vary in coherence and degree of adherence. We measure their existence in the acceptance of normative influences and constraints on international behavior. For nonproliferation, the main regime norms and practices are found in the Nonproliferation Treaty (NPT) and its regional counterparts like the Treaty of Tlatelolco; the safeguards, rules and procedures of the International Atomic Energy Agency (IAEA), as well as in various UN resolutions. While there are a few important exceptions, the large majority of states adhere to at least part of this set of norms.

It is often the case in international politics that the strong make the rules, and many regimes can be traced back to the interests of the most powerful state. But regimes do not necessarily have a one-to-one relation to the position of the most powerful state. When the United States was the only nuclear

[2] See, for example, Amory Lovins, L. Hunter Lovins, Leonard Ross, "Nuclear Power and Nuclear Bombs," *Foreign Affairs* 58 (Summer 1980); and Kenneth Waltz, "Toward Nuclear Peace," Adelphi paper forthcoming. Both articles make a number of good points. In my judgment each would be destructive as a guide to policy for reasons spelled out in this article.

[3] See Robert O. Keohane and J. S. Nye, *Power and Interdependence* (Boston: Little Brown, 1977), Ch. 1. Also Oran Young, "International Regimes," and Ernst Haas, "Why Collaborate? Issue Linkage and International Regimes," *World Politics* XXXII (April 1980).

power, its first efforts at regime creation, the Baruch Plan of 1946, foundered because the USSR refused to accept the effort to legitimize the American monopoly. And today, given the subsequent diffusion of nuclear technology, the nonproliferation regime can no longer rest primarily on American power.

The beginnings of the current nonproliferation regime date from December 1953, when President Eisenhower launched the Atoms for Peace Program. The idea of the Atoms for Peace approach was to assist countries in their development of civilian nuclear energy, in return for their guarantees that they would use such assistance for peaceful purposes only. Ever since 1945, policymakers had realized that the distinction between peaceful- and weapons-use of the atom was primarily a question of politics rather than physics. Many technical capabilities could support both purposes, but some more than others. In addition, technology could be used as an inducement for the building of institutions. The opportunities and dangers of deliberately transferring technology were questions of timing and degree, not absolutes. That degree provided a basis for diplomacy.

The Atoms for Peace approach has been correctly criticized for promoting nuclear energy in instances before it was economically justified. In addition, guarantees of "peaceful use" were sometimes too loosely written and gave rise to subsequent misunderstandings and recriminations. Nonetheless, the basic philosophy of the Atoms for Peace Program provided the foundation for a second attempt at establishing an international regime. Realizing that the technology was spreading anyway, the United States offered to share the fruits of its then long technological lead at an accelerated pace, in return for the acceptance by other countries of conditions designed to control destabilizing effects from such sharing. The policy was oversold, and poorly thought through in its execution at a time when too little was known about the pace and cost of peaceful nuclear development. But it did serve to create an initial consensus on which to build. Essentially, the most powerful state in the nuclear issue area used its power to attract others to a normative framework.

Specifically, the central accomplishment of the Atoms for Peace Program was the creation of a system of international safeguards and an institutional framework in the form of the International Atomic Energy Agency, established in Vienna in 1957. Under the IAEA safeguards system, nonweapons countries agree to file with the Agency regular detailed reports on nuclear civilian activities, and agree to allow international inspectors to visit their nuclear facilities to verify the reports and to ensure that there has been no diversion of materials from civilian to military purposes. The safeguards system is central to the basic bargain of the international regime in which other countries are assisted in their peaceful nuclear energy needs in return for their accepting the intrusion of safeguards and inspection.[4] The initial acceptance of

[4] Contrary to some opinions, safeguards need not be perfect to deter diversion and have a significant political effect. The necessary probability of detection is debatable, but thus far I am unaware of significant diversion of IAEA safeguarded materials.

such intrusion was slow and halting, but the idea was successfully implanted in the 1950s.

The next step in regime development was the formulation of the NPT over the course of the 1960s. Building on an Irish proposal at the United Nations in 1961, the United States and the USSR pursued their interests in limiting the spread of nuclear weapons by using a mix of bilateral and UN procedures to formulate a relatively simple treaty under whose first two articles nations undertook not to develop or to aid development of nuclear weapons or explosives. In addition, under the third article, nonweapons states agreed to put *all* their peaceful nuclear facilities under safeguards, thus closing the loophole in the safeguards system which rested on an artificial distinction between imported and domestic technology. In addition, under the fourth article, nonweapons states were promised access to technology; under the fifth, access to the potential benefits of peaceful nuclear explosions; and under the sixth, weapons states promised to take serious steps to control the "vertical" nuclear arms race.

Eight significant states have refused to sign the NPT, most frequently on the grounds that it is a discriminatory treaty. But among the eight, France indicated that it would not undercut the purposes of the Treaty, and in Latin America, a regional treaty limiting nuclear weapons helps to fill the normative gap. Skeptics have dismissed the treaty as a modern equivalent of the Kellogg-Briand pact, since any state can quit on three months notice. Other detractors have argued that the treaty is imperfectly drafted and involves promises that cannot be fully kept. Nonetheless, by establishing a normative presumption against proliferation and by creating procedures for verifying intentions, the NPT has helped to build confidence and a degree of predictability in states' behavior. Like its regional counterparts, such as the Treaty of Tlatelolco, it helps to strengthen the international regime by symbolizing a common interest. The NPT is not, as some enthusiasts tended to believe in the 1960s, sufficient or the same as the international nuclear regime, but with 111 adherents, it has certainly become a central part of the regime.

Threats to the regime: early 1970s

By the early 1970s, a degree of complacency existed about the nonproliferation regime that had been constructed. Such complacency was shattered, however, by three events in 1974 and 1975. One was the Indian explosion of a "peaceful" nuclear device using plutonium derived from a Canadian-supplied research reactor with U.S.-supplied heavy water—an event viewed in Canada and the United States as cheating on the basic bargain of the nuclear regime. Even if it was a violation of the spirit and not the letter of the poorly written early bilateral agreements, the ensuing reactions and re-

criminations in U.S. public and Congressional opinion (in contrast to an initially relaxed executive branch response) led to reverberations that spread throughout the international nuclear supply system and are still not fully settled. The Canadian embargo of uranium that even included its allies, and the U.S. Nonproliferation Act of 1978, whose stringent conditions aroused resentment abroad, can both be traced back to the Indian explosion.

The second event was the oil embargo and fourfold increase in oil prices, which created widespread insecurity in energy supply. Problems with oil led to a sudden surge of exaggerated expectations about the importance of nuclear energy and raised questions about whether there would be sufficient uranium to fuel all the reactors that suddenly appeared on the drawing-boards. The net effect was to accelerate governments' plans for early commercial use of plutonium fuel, which unlike the low enriched uranium currently used as fuel in most reactors, is a weapons-usable material. The IAEA projected that some forty countries might be using plutonium fuels by the end of the 1980s. At the same time, safeguards and institutions for dealing with such a flood of weapons-usable materials had not been adequately developed. As one careful observer reported in 1976, the existing IAEA safeguards system was workable, but there was little hope that it would be able to cope if nuclear expansion plans proceeded at their expected rate.[5] The pace of technological change appeared to be outstripping the pace of institutional development.

The third set of events that shook the regime in the mid-70s was the proposed sale of facilities for producing weapons-usable materials without regard to their economic justification or proliferation implications. In some cases, reprocessing plants were offered to countries that were building their first power reactors and lacked any serious economic justification for reprocessing. Subsequently, it was disclosed, in at least two cases, that the recipients were attempting to develop nuclear weapons programs, and that there would almost certainly have been violations or abrogation of safeguards. Under such circumstances there was grave danger of the collapse of the international regime that had been so laboriously constructed over the previous decades and a further weakening of public support for nuclear energy (not to mention exports) in many advanced countries. The international regime had entered a period of crisis and possible collapse arising from a series of events related to the development of the peaceful uses of nuclear energy.

The threats to regime stability originating from the ambiguities of "peaceful" uses were reinforced by trends in the power positions of the United States inside and outside the nuclear issue area. Outside the nuclear issue, the United States had suffered its disastrous defeat in Vietnam, with an accompanying inward turn in its cycle of foreign policy attitudes. This heightened the sense of insecurity felt by a number of former client states,

[5] Personal communication, Henry Jacoby, MIT, August 1976.

particularly in Asia, and weakened the credibility of security guarantees as an instrument that could be extended to less-developed countries. While the U.S. Congress showed strong concern about proliferation (for example, passing the Symington Amendment in 1976 which mandated a cut-off of military or economic aid to a country which imported a reprocessing plant), simultaneous Congressional restrictions on aid and arms transfers emptied such sanctions of much of their supposed clout. The sticks were shrinking and the carrots weren't growing.

Inside the nuclear issue area, the overwhelming preponderance of U.S. influence had begun to diminish. America's share of world exports began to decline as strong industrial competition for the sale of light water reactors developed in Europe—as might have been expected. Equally important, however, was the erosion of the American near-monopoly on provision of enrichment services, which had previously provided a significant source of leverage over nuclear fuel supplies. Long-term contracts at advantageous prices created an American umbilical cord to reactors operating overseas. Disputes over the role of private industry in enrichment, and a precipitous closing of the order books for contracts by the AEC in 1974 shook the faith in the reliability of American supply and accelerated the already existing inclinations towards independence. By the late 1960s and early 1970s, France, Germany, Britain, the Netherlands, Japan, and South Africa had all begun projects to build their own enrichment capacity—well before the more stringent nonproliferation policies of the late 1970s. Furthermore, the Soviet Union had begun to sell enrichment services to the world market. Thus by the mid-1970s, U.S. leverage over other countries' nuclear policies had begun to erode, because of changes both inside and outside the nuclear arena. The United States was still the most important state in the peaceful nuclear arena, but it no longer held a hegemonic position. Thus in any efforts to refurbish the regime, American leadership would be a necessary but not a sufficient condition for success.

Fuel cycle measures: the late 1970s

1976 and 1977 saw a series of American initiatives in response to the fuel cycle events that had threatened the regime. A number of private studies were raising doubts about the economic need for rapid introduction of plutonium fuels.[6] Congressional hearings and draft legislation called for a more stringent approach to exports. The election campaign accentuated public and press attention to the nonproliferation issue.

[6] Pan Heuristics, "Moving Toward Life in a Nuclear Armed Crowd" (Los Angeles, 1977); Spurgeon Keeney, ed., *Nuclear Power Issues and Choices* (Cambridge, Mass.: Ballinger, 1977); "Report to the American Physical Society by the Study Panel on Nuclear Fuel Cycles and Waste Management," *Review of Modern Physics* (January 1978).

Two important steps were taken by the Ford administration. First, the Nuclear Suppliers Group was established in London. Seven (later fifteen) major suppliers came together to discuss guidelines for nuclear commerce that would prevent commercial competition from undercutting safeguards obligations. While the guidelines were not finally agreed to until September 1977 and published through notes to the IAEA in January 1978, much of the basic work was done in 1976.

Second, in October 1976, President Ford announced a more cautious policy toward the use of plutonium in the U.S. nuclear program. Reprocessing was to be deferred pending a solution of proliferation and economic problems. The exact meaning of this deferral and how it was to be implemented was to be studied in a somewhat ambiguous Reprocessing Evaluation Program. Thus some of the main lines of response later identified with the Carter administration actually preceded it, and one of the basic policy choices faced by the Carter administration was what to do with the legacy of past policies. While the eventual choices stressed continuity with the past, there were strong pressures for more radical departures.

One set of suggestions came from antinuclear groups, who felt that proliferation could be stopped by stopping nuclear energy or nuclear exports. They argued that the transnational demonstration effect of an American renunciation of nuclear energy would also bring foreign nuclear energy programs and proliferation to a halt. They were correct in pointing out the unfortunate effect of exaggerated projections of nuclear growth. But the basic technology was too widely spread and the U.S. preponderance too diminished for a unilateral total moratorium policy to be effective. The momentum behind the French nuclear program, for example, would not be stopped by such a U.S. decision. And if some countries failed to follow suit (or did so with a ten-year lag), the problem would not be solved, but the United States would lose influence on those governments that persisted with nuclear programs. Moreover, while it was important to obtain changes in the way the nuclear fuel cycle was envisaged and organized, the fuel cycle was only part of the proliferation problem. If proliferation were more a technical than a political problem, this option might have been more attractive. On the contrary, its net effect would further weaken an existing multilateral regime for the sake of a new unilateral American alternative based on a series of wishful political assumptions.

Another suggestion not taken was to formally require the location of sensitive facilities only in weapons states, where diversion from civil to military purposes could not lead to any further proliferation. But such an approach would also have weakened the regime—because it would have been regarded as intolerable by key allies and NPT parties, such as Germany and Japan, who would have seen it as a violation of the treaty.

A third suggestion was to center U.S. diplomacy upon the London Suppliers club. But resentment had already risen about the Nuclear Supplier

Group. A number of important nonweapons states such as Yugoslavia were calling it a cartel and charging that it was inconsistent with the NPT. Suggestions of formal market sharing among suppliers would have exacerbated such reactions. Germany and others were arguing that technology denials and supplier restraints would simply cause resentment and destroy the existing regime. Their continued participation and agreement to guidelines was by no means assured.

A fourth approach was to try to coerce other supplier and consumers into accepting our nonproliferation approach by working with Canada and Australia to control uranium sources. While the United States had lost its monopoly of the enrichment market, these three countries had a large share of the natural uranium market. On the other hand, that share was not complete, and political manipulation would speed its erosion. Moreover, such an effort would again undermine rather than reinforce the existing regime without a clearcut replacement for it.

The approach that was chosen was designed to reinforce the existing regime, but not to accept the eroding status quo. It was important to shake others so that attention and action would be focused on refurbishing the regime, but to do so without coercion and with as little overt discrimination as possible.

Indeed, one of the basic problems in the design of nonproliferation policy is the discrimination issue. By its very nature, nonproliferation involves a degree of discrimination. Yet the way in which that discrimination is handled can spell the difference between success and failure in a policy of regime maintenance. Thus the Carter administration deferral of reprocessing at home was not expected to lead all other countries to follow suit. But it was felt that exaggerated projections of nuclear growth and spurious economic calculations were fueling decisions in the United States and other countries. U.S. diplomatic efforts to persuade others to look more carefully at their calculations and at the problems associated with plutonium would have been undercut if U.S. domestic programs did not defer plans for thermal recycle and stretch out the timing of breeder R&D. Since the United States could not unilaterally impose its will on others concerning how the nuclear fuel cycle should be constructed, six of the seven points in President Carter's 7 April 1977 nonproliferation statement dealt with issues within U.S. domestic jurisdiction. (The seventh point called for an international evaluation that will be described in this essay.)

Contrary to some accounts, most people in the administration recognized that there was no single technological fix that would create a safe fuel cycle, but rather sought to move discussion towards a series of technological and institutional steps that would lessen proliferation risks while allowing legitimate energy needs to be met. To gain the time necessary to develop technological and institutional arrangements, the administration urged that premature com-

mercialization of fuel cycles utilizing plutonium be avoided and announced that the United States, for its part, would defer its own plans for commercial reprocessing and recycle of plutonium.

The strategy was to focus strongly against the recycle of plutonium in thermal reactors as a clear and present proliferation danger that promised at best marginal economic and supply assurance gains. Breeder reactors, however, had a greater potential long-term energy significance. Moreover, certain key governments such as France, Britain, Japan, and Germany were heavily committed to breeders. France, in particular, was well-placed to lead a coalition that could defeat U.S. views. With its strong nuclear program and domestic political support, France was a leading country in the nuclear field. French leadership would be essential in any refurbishing of the international regime. U.S. views on plutonium use had to be expressed in a manner that encouraged France to play a central part in supporting the regime. Thus the Carter administration did not oppose all breeder research and development programs at home or abroad. It expressed reservations about their commercial deployment before proliferation-resistant technological and institutional alternatives had been explored.

While this strategy eventually provided a basis for avoiding isolation and creating a coalition to refurbish the regime, initially the Carter administration had internal divisions over the question of where such a compromise might be struck. The most divisive issue was granting permission for the reprocessing of U.S.-origin spent fuel. The purists focused on the dangers of plutonium and tended toward a restrictive and coercive approach to granting permission. The pragmatists focused on the dangers of proliferation and using permissions to coax forth support for restrained export behavior and refurbishing the regime. In some early statements on foreign reprocessing of American origin fuel, the purist position put the United States in an unduly rigid position. It was not until mid-1978 that a position was stated which was to serve as a basis for key compromises with France and others later in the year, which assured that the strategy described above could be implemented.[7]

Needless to say, the process of policy formulation did not merely advance through debates over abstractions. In January 1977, the White House called for the completion of a Presidential Review Memorandum on Nonproliferation by March, While the formal interagency review process ground forward, events also forced policy ahead.

For example, although a Carter State Department transition-team paper had suggested a slow quiet approach to the French-Pakistan and German-Brazilian deals, the German government sent a special emissary to call on the new Vice President even before the inauguration. The result was to trigger

[7] See J. S. Nye, "Balancing Nonproliferation and Energy Security," Speech to the Uranium Institute, London, 12 July 1978.

prematurely a round of high level and highly visible diplomacy that gave a confrontational tone to the issue as well as diverting much precious time from the formal Presidential Review Memorandum (PRM) process.

Similarly, budgetary deadlines on energy issues drove decisions on large expenditures planned by the previous administration. Thus the Clinch River breeder-reactor decision advanced on a separate track from the generic nonproliferation policy, although it was announced as a nonproliferation measure. Other energy steps such as deployment of gas-centrifuge enrichment technology were also poorly coordinated with nonproliferation policy. Additional pressures came from U.S. Congressional groups eager to hold hearings on their recently reintroduced legislative proposals. Industry and environmental groups complained that insufficient attention and time was being given to their views. Delegations arrived from other countries in order to press for answers on pending export cases before the Nuclear Regulatory Commission; asking for permission to reprocess American-origin spent fuel; asking about the status of the Suppliers Group, the Reprocessing Evaluation Program, and so forth.

Amid this pressure of events it became clear to me that some device was needed to introduce a longer-term thrust into international nuclear policy. Maintaining and refurbishing the international regime would require a general approach around which a broad group of nations could rally. The process of rethinking the conditions of the regime had to be shared beyond the United States alone. The confrontational approach that was driven by events threatened to isolate the United States and further disrupt the regime. It was important that nuclear diplomacy should not polarize different groups focused on London and Vienna.

The device we designed to meet these various policy needs was the International Nuclear Fuel Cycle Evaluation Program (INFCEP until May 1977 when the French declared the word "program" redundant but made the acronym INFCE almost unpronouncable). The idea of INFCE was to expand the existing Reprocessing Evaluation Program to include the whole fuel cycle and to make participation international.

INFCE has been described as a pioneering effort at international technology assessment. Bertrand Goldschmidt has called it a technico-diplomatic compromise in a sort of giant scientific happening."[8] Officially, INFCE provided a two-year period in which nations could reexamine assumptions and search for ways to reconcile their different assessments of the energy and nonproliferation risks involved in various aspects of the nuclear fuel cycle. While officially INFCE was given a predominantly technical rationale, this was a means of attracting broad participation into what was really part of a political process of stabilizing the basis for the international regime. The sixty-

[8] Harvey Brooks and Eugene Skolnikoff, NATO paper, 1977; Bertrand Goldschmidt, *Le Complexe Atomique* (Paris: Fayard, 1980), p. 429.

six countries and organizations that came together in Vienna included consumers and suppliers, rich and poor, East and West, and a dozen countries that had not signed the NPT. In all, 519 experts from 46 countries participated in 61 meetings of 8 working groups, and produced 20,000 pages of documents. The common denominator of this diversity was the Final Plenary Conference finding that INFCE had "strengthened the view that effective measures can and should be taken to minimize the danger of proliferation of nuclear weapons without jeopardizing energy for peaceful purposes. . . . The participants were determined to preserve the climate of mutual understanding and cooperation in the nuclear energy field that is one of the major achievements of INFCE."[9]

As a diplomatic device, INFCE helped to reestablish a basis for consensus on a refurbished regime for the international nuclear fuel cycle. The very process of engaging in international technology assessment helped to heighten awareness of the nonproliferation problem and the threats to the regime. In that sense, INFCE helped the United States to set the agenda for other governments. Moreover, it affected the process inside other governments. Foreign offices rather than just nuclear energy agencies became more involved. Most important, attention to the problem and to regime maintenance was spread beyond the United States. While the United States did not always agree with all the details of INFCE's answers, the most important point was that INFCE focused other countries' attention on a U.S. question—nonproliferation. It was generally agreed, by diplomats in Vienna, that no country "won" and nearly all countries gained some of their position, including, for the United States, the core points against the recycling of plutonium in the current thermal reactors.[10] In turn, France and others won exaggerated statements of probable demand for breeder reactors, but this was qualified by statements denying the value of breeders to countries with small electrical or nuclear grids.

Although the final report was a massive body of negotiated language—some of which differed from purist versions and some aspects of the U.S. positions on plutonium—the technical conclusions lent support to the evolutionary approach as a potential point of political compromise to be developed in diplomatic forums.

While no single fuel cycle emerged on its technical merits as indisputably more proliferation resistant, a general basis was laid for more caution in introducing weapons-usable fuels. Working Group 1 agreed upon a range of projected demand for uranium by the end of the century that was less than one-half to one-third of the internationally accepted figures before INFCE started. This helped reduce the acrimony that characterized disputes over

[9] "Communiqué of the Final Plenary Conference of INFCE," 27 February 1980, p. 5.

[10] See, for example, *Nucleonics Week,* 28 February 1980; and the *Energy Daily,* 16 June 1980. "The conclusion . . . that recycle in thermal reactors is uneconomic, unnecessary, and for most countries, unwise . . . is seen as the U.S.'s main victory there."

uranium resources, since it had the same effect as doubling uranium reserves. In addition, Working Group 8 identified modest improvements (15 percent) that could relatively easily be made in the efficiency of uranium consumption. The net effect was to reduce by more than half the pressure for premature separation of weapons-usable fuels that had been created by exaggerated projections of nuclear demand.

As for the use of plutonium, Working Group 4 found that recycle in thermal reactors is not likely to have large economic advantages, and Working Groups 6 and 7 found that safe storage or disposal of spent fuel does not require reprocessing. Working Group 5 concluded that plutonium will be needed for breeder reactor programs, but that successful breeder programs will be based upon large nuclear energy programs where important economies-of-scale can be achieved. The net effect of these findings is to reduce the pressures for the widespread and premature use of plutonium that posed a clear and present danger to the international safeguards system. Instead, INFCE laid a basis both in time and institutional suggestions for a cautious introduction of plutonium use that could be guided by realistic development needs rather than wasteful and dangerous imitation based on a spurious conventional wisdom and exaggerated projections.

To the extent that countries are guided by realistic energy concerns, the INFCE technical findings combined with an evolutionary approach provided a valuable seed around which a restored consensus could crystallize. For example, the INFCE technical findings help to reduce the tensions between Article 7 of the Suppliers Guidelines, which urges restraint in sensitive exports, and NPT Article IV, which calls for "further development of the applications of nuclear energy for peaceful purposes, especially in the territories of the non-nuclear weapons states party to the Treaty, with due consideration for the needs of the developing areas of the world."

Because the criterion of economic justification that is part of the evolutionary approach allows for change, it does not constitute a denial of the right of nonnuclear weapons states to the peaceful uses of nuclear energy on their territories. Given the technical findings described above, a degree of restraint on sensitive exports at this time is not necessarily in basic conflict with Article IV or with the larger bargain of the NPT. After all, a certain tension is built into the language of the NPT (which says Article IV must be read in light of the obligations in Articles I and II not to foster the spread of weapons), and a common security interest in nonproliferation is the real basis of the Treaty.

This is not to say that there will not be disputes about supply policies and the NPT, but with a reasonable amount of goodwill, the INFCE findings mean there *need* be no breakdown over Article IV. Indeed, at the 1980 NPT Review Conference, it was Article VI rather than Article IV which hindered efforts to achieve a final communiqué.

If INFCE was generally successful as the central thrust of a policy designed to broaden concern for regime maintenance with relation to fuel cycle problems, other aspects of policy relating to the fuel cycle issues were less successful. The following are areas in which policy fell short:

1. *Incentives.* In 1977, President Carter announced incentives to help countries manage their fuel cycles in ways that would support nonproliferation interests. At the front end, the United States was willing to contribute to an international fuel bank to provide security of supply for countries fulfilling their nonproliferation obligations. At the back end, the United States offered to store limited amounts of foreign spent fuel, and to help explore sites for international spent fuel storage.

Both these initiatives proceeded extremely slowly. Diplomatic responses to the fuel bank were lukewarm. Fears of shortage eased somewhat as exaggerated nuclear growth projections began to decline. In addition, confidence in supply could not be so easily restored when large differences still existed over basic conditions governing the use of the fuel. Efforts to implement the spent fuel storage offer went forward, but were slowed by domestic political differences over the development of nuclear energy, and the disposal of nuclear wastes.

2. *Export Legislation.* Whatever its substantive merits or faults, the timing and tone of the Nonproliferation Act of 1978 had an unfortunate effect on efforts to restore consensus over fuel cycle measures.[11] It was widely regarded as a unilateral prejudging of the outcomes of INFCE, and an intrusion into other countries' nuclear programs. Both the procedural role of the Nuclear Regulatory Commission and the various guillotine clauses threatening to cut off supply created a sense of confrontation and insecurity. Ironically, in the process of executive-legislative bargaining that preceded passage of the act, the Carter administration had assured that most of the cut-off provisions were "rubber guillotines" which would be waived back before severing supply, but such nuances of the American domestic political process were generally lost on foreign audiences. The efforts required to soothe the European resentment and prevent the paradoxical outcome of embargoing U.S. allies represented political capital that should have been spent on more important issues.

Subsequent compromises and understandings with Japan and France that sufficient permissions for reprocessing of U.S. origin spent fuel would be allowed during the INFCE period in order to avoid disruption of their programs alleviated but did not totally remove some of the tensions created by the legislation.

3. *Domestic breeder policy.* In trying to direct world attention to the problems that must be created by too rapid a movement toward weapons-usable fuels, the Carter administration altered the U.S. domestic program so that it stressed a more gradual transition. This involved deferral of

[11] For a sample of such reactions, see *International Security* 3 (Fall 1978).

commercial reprocessing and cancellation of the Clinch River Breeder Reactor, which had been oriented toward demonstrating early commercialization. In terms of Carter's 7 April statement, the idea was not to halt the breeder program, but to restructure it to emphasize development of a safer fuel cycle over a longer time horizon rather than early commercialization. Or as the point was expressed in October 1977, "We are not antibreeder. We believe that a breeder program is an important energy insurance policy. Indeed, even without the Clinch River Breeder, President Carter proposed to spend some $450 million in this fiscal year on breeder research. What we do oppose is premature movement toward a breeder economy."[12]

There were a number of technical and budgetary reasons other than non-proliferation for opposing the Clinch River project. Indeed, the initial decisions arose in the budgetary context and the basic advice on cancellation came from White House staff concerned with energy matters. Subsequently, the Department of Energy Fission Strategy pointed out that early commercialization of the breeder could not be justified on economic grounds and that this technology should be developed for comparison with fusion (and solar) as a potential successor to current sources of electricity generation well after the turn of the century.[13] In terms of nonproliferation, the Clinch River decision indicated that the early development and spread of reprocessing was not required by early breeder commercialization. Unfortunately, too much of the decision was publicly attributed to nonproliferation reasons, thus obscuring the intrinsic economic weakness of the project, and implying a false trade-off between energy needs and nonproliferation concerns. Moreover, the nonproliferation argument became grossly oversimplified: "Bombs are made from plutonium; breeder reactors use plutonium; Ergo, let's not have any breeder reactors."[14] Since there are other ways to get plutonium and bombs, it was not hard for breeder proponents to make a mockery of the caricatured argument rather than dealing with the real questions of whether and when the uncertain breeder economics would justify additional degrees of risk from widespread flows of weapons-usable fuels.

In part, this reflected deliberate distortions by opponents of the Carter administration's actions; but in part it reflected internal divisions within the administration about the role of nuclear energy in general. The nuclear industry at home, and a number of foreign governments saw the administration as antinuclear and the Clinch River decision as destroying the future. Clinch River became a rallying point for a massive industry lobbying effort. The net effect was that the annual Clinch River debates in Congress became highly distorted symbolism that trivialized the real argument at home and abroad and were enormously wasteful of money and

[12] J. Nye, "Nuclear Power Without Nuclear Proliferation," Speech in Bonn, Germany, 3 October 1977, *Department of State Bulletin*, 14 November 1977.

[13] Office of Energy Research, "The Nuclear Strategy of the Department of Energy" (September 1978).

[14] *Energy Daily* (Washington), 11 February 1977.

time. In retrospect, while the decision may have made sense on its merits, the divisive effects and the difficulty in maintaining a clear argument proved to be politically unmanageable and costly.

Maintaining the regime: problems for the 1980s

The role of the fuel cycle

The policy responses of the late 1970s focused heavily on fuel cycle questions. Obviously there were other measures as well—for example, efforts to strengthen adherence to the NPT and Tlatelolco, efforts to negotiate a Comprehensive Test Ban, and specific diplomatic responses in particular problem cases.[15] But the charge that policy focused on fuel cycle questions is largely correct. This was not because policymakers regarded the fuel cycle as the only source of proliferation. Rather it was because some of the most immediate threats to the regime arose out of fuel cycle questions, and because in the post-Vietnam period, other nonproliferation instruments were often difficult to use.

One of the problems for the 1980s will be keeping fuel cycle questions in a reasonable perspective. One might say that fuel cycle questions were half the source of the proliferation problems of the 1970s and that the policy responses of the late 1970s provided half a solution to those fuel cycle problems. By any political arithmetic, to ameliorate a major social problem by one-quarter is not a trivial point. But it is not the solution to the whole problem. In my political judgment, Lovins et al. overstate when they say that nuclear power is "the main driving force behind proliferation."[16] Important steps remain to be taken in the fuel cycle area, but they must not monopolize attention or create frictions with other key nations that will interfere with the overall maintenance of the nonproliferation regime.

After INFCE, a number of steps will be necessary to strengthen the fuel cycle aspects of the regime.

Safeguards

INFCE helped to build agreement that safeguards improvements are feasible and necessary if the basic bargain of the nuclear regime is to be kept and nuclear commerce to proceed. Safeguards have moved from the category of "necessary evil" to one of "beneficial necessity." The next steps are both technical and institutional. Of the latter, the most important is the agreement

[15] See J. S. Nye, "Nonproliferation: A Long-Term Strategy," *Foreign Affairs* (April 1978).

[16] Lovins et al., op. cit, p. 1138 (though they are correct in its limited effectiveness in displacing oil).

by the handful of states with unsafeguarded facilities to join in the comprehensive safeguards regime.

Plutonium and highly enriched uranium management

The INFCE discussion helped to build acknowledgment that weapons-usable fuels are not like other fuels and require special procedures. New developments in fuel technology are reducing the need for weapons-usable uranium fuels in most research reactors. Equally important for the future are the IAEA discussions of plutonium storage. But storage regimes must be more than fig leaves and must encompass flows as well as stocks, with release criteria at the storage points and special guarding and monitoring procedures for all movements of unirradiated plutonium. Lovins et al. argue that international management cannot affect how reexported plutonium is used.[17] This may be true physically, but it is not necessarily true politically. A continuous international presence could reduce proliferation risk by raising the political costs of seizure or diversion. On this international basis, it may be possible to reconcile current divergences in national procedures for transfers of nuclear fuels.

International spent fuel storage

In the discussions over the past few years, it has become clear that a good deal of planned reprocessing was being driven by the excess supply of spent fuel rather than the demand for plutonium. Given the evolving consensus on the reservation of plutonium for breeders, this premature separation of plutonium from its radioactive protection would be both uneconomic and dangerous. A balance should be struck between reprocessing to meet demands for plutonium according to the slow and gradual pace of breeder programs and safe storage of excess spent fuel. Although spent fuel storage has been likened to plutonium "mines," radiation barriers remain and such sites are more amenable to international monitoring than are prematurely reprocessed plutonium "rivers." Internationally monitored national spent fuel storage could also be reinforced by the availability of international sites for spent fuel storage. In this way the evolutionary regime would be reinforced by a balance between a modest amount of breeder demand-oriented reprocessing and safer storage alternatives for excess supplies of spent fuel.

Fuel assurances

The period of turmoil in nuclear commerce that followed the events of 1974–75 created insecurities in fuel supplies that added to incentives for premature use of plutonium. A useful way of strengthening the regime would

[17] Ibid., p. 1140.

be to reinforce national stockpile measures by an international institutional arrangement to insure vulnerable countries against interruptions in bilateral supplies. For large programs in countries meeting nonproliferation standards, this might take the form of special agreements for long-term supply. For small programs, modest, internationally controlled stockpiles of low-enriched uranium could be helpful and are still worth further exploration.

Cooperation in R&D

An evolutionary approach to weapons-usable fuels is a common interest of all countries. Nonetheless, countries with small nuclear energy programs must be assured of equality when their programs have grown to a size that economies-of-scale might justify breeder reactors. As their programs grow, they will need to begin research and development in advance of the point where the economies-of-scale have been reached. Thus in an evolutionary-developmental regime, countries with large nuclear energy programs will have to make provisions for the energy R&D needs of the smaller programs. Although this presents some risks from a proliferation point of view, it is preferable to the alternative of a chaotic nonregime where all countries use (often spurious) R&D justification for unnecessary weapons-usable fuels. An international evolutionary regime under the IAEA would present clearer criteria for cooperative programs whether in national or international facilities.

The steps mentioned above represent modest but important ways to strengthen the fuel cycle aspects of the international regime begun in the 1950s and focused on the IAEA. They will not by themselves solve the problem of nuclear proliferation, in part because the fuel cycle is only part of the proliferation problem, and in part because there is always a temptation for some to remain outside the regime. Nonetheless, the norms of the regime create a strong presumption against misuse of the fuel cycle and the institutions provide mechanisms that help ascertain that the norms are being observed.

The problem of priority

Nonproliferation is not a foreign policy; it is part of a foreign policy. Foreign policy always involves the adjustment of partly conflicting objectives in order to achieve as much as possible within the constraints of a refractory world. How nonproliferation fares in that adjustment process depends on the priority it receives. One of the effects of the attention given to the issue in the late 1970s was to raise the priority of the issue for a number of governments. Higher priority means higher costs, including the prospect of sanctions inscribed in U.S. law and in the Supplier Guidelines. A number of governments which might otherwise have been tempted to keep the weapons option open were deterred by the prospective high political costs of such actions.

On the other hand, it is often costly to *impose* sanctions as well as to

suffer them, and this is particularly true for sanctions that extend beyond an issue area and cut broadly across several domains of foreign policy. After the invasion of Afghanistan, for example, the United States found its foreign policy tightly bound by the legislated curtailment of military and economic assistance to Pakistan.

More generally, as the 1980s open, a number of skeptics inside and outside the bureaucracy urge a general lowering of the priority given to nonproliferation on the grounds that its negative effects are exaggerated. Proliferation may be disastrous for the particular countries that become involved in a regional nuclear arms race, but they argue that such a race would have little effect on the rest of the world. In particular, it would not affect the global balance of power, since the nuclear superpowers could always technically outrace the new entrants. From this point of view, it is not worthwhile for the large nuclear weapons states to invest much political capital in preventing the erosion of the nonproliferation regime.

Another group of analysts goes even further and argues that proliferation would have beneficial and stabilizing effects on world politics.[18] Just as nuclear weapons have produced prudence in U.S.-Soviet relations, they argue, so might nuclear weapons stabilize regional balances. This might be true if political conditions were similiar. But the transferability of prudence assumes governments with stable command and control systems, the absence of serious civil wars, the absence of strong destabilizing motivations such as irredentist passions and discipline over the temptation for preemptive strikes during the early stages when new nuclear weapons capabilities are soft and vulnerable. Such assumptions are unrealistic in many parts of the world. On the contrary, rather than enhancing its security, the first effects of acquiring new nuclear capability in many circumstances may be to increase a state's vulnerability and insecurity. And even a local use of nuclear weaponry would be a serious breach of a thirty-five-year global taboo.

The destabilizing aspects of proliferation are further complicated if one thinks of possible roles of nonstate actors. Whatever the prospect of successful acquisition of a nuclear device by a terrorist group, even threats of such action may create severe civil difficulties. Moreover, the possible theft of weapons-usable materials and black market sale to maverick states means that the problems posed by nonstate groups do not depend solely on their technological capabilities. Nor would the superpowers necessarily remain isolated from the effects.

Equally important is the way that the wide or rapid spread of nuclear capabilities could affect both the central strategic balance, and prospects for the gradual evolution of a peaceful and just world order. To illustrate both

[18] See, for example, Kenneth Waltz, "What Will the Spread of Nuclear Weapons Do to the World," in *International Political Effects of the Spread of Nuclear Weapons,* John Kerry King, ed. (Washington: G.P.O., 1979); and Adelphi paper forthcoming.

points, take the case of the Federal Republic of Germany and Japan. One of the striking and constructive features of the world since 1945 is that those two great powers of the prewar period have been reintegrated into world coalitions and institutions as the third and fourth most powerful states, in economic terms, without their feeling it necessary to develop equivalent nuclear military power. This makes the central strategic balance more calculable and contributes to the stability of Europe and Asia. It also presents examples of countries achieving significant status in world politics without nuclear weaponry. At a certain point—especially if it were to call into question the basic decisions hitherto maintained by Germany and Japan—widespread proliferation would surely have profound consequences which even the most sanguine superpower strategists could not ignore. Over the long term, if countries are able to achieve their goals of security, status, and economic well-being without the necessity of developing military nuclear power, the prospects improve for the evolution of new forms of effective power, coalitions, and institutions.

Unfortunately, there can be no decisive answer in the debate over the effects of proliferation. Particular outcomes may differ. Some cases may start a disastrous chain of events; other may turn out to have benign effects. At the same time, a great power, particularly one that plays a critical role in maintaining a regime, must take a prudent and cautious approach to the assessment of risks both inside and outside a region. The consequences of guessing wrong about effects are not the same in both directions; a stable outcome may be a happy regional surprise; an unstable outcome that triggers a chain of proliferation events could have a disastrous effect on the global regime.[19] In the debates about priority that are bound to occur in this decade it is important to remember the difficulty of maintaining a regime.

Rate vs. degree of proliferation

Even if there is a high priority given to nonproliferation, difficult policy choices exist in relating the rate and degree. Proliferation is sometimes conceived in simple terms of a single explosion. Indeed that concept is enshrined in the NPT. But it can also be conceptualized as analogous to a staircase with many steps before and after a first nuclear test. A first explosion is politically important as a key landing in the staircase, but militarily, a single crude explosive device does not bring entry into some meaningful nuclear "club." The very idea of a nuclear club is very misleading. The difference between a single crude device and a modern nuclear arsenal is as stark as the difference between having one small apple and having an orchard. While the rate of proliferation refers to the politically symbolic event of a first explosion, the degree of pro-

[19] In my judgment these considerations are not adequately dealt with by Waltz, cited above.

liferation refers to the size, military quality, and deliverability of a country's nuclear arsenal.

As technology spreads and proliferation occurs, the United States will have to direct more attention to these questions of advanced proliferation. Controls on information about laser fusion devices, technology with advanced weapons uses, launchers, and other delivery systems will require more systematic analysis. Strategic and arms control policies will also require attention from this perspective. Formulating sanctions that deter a quickening rate while creating firebreaks after a first explosion will be a delicate balancing act.

Obviously there is a trade-off between the attitudes and measures that are taken to deter first explosions—the events that politically symbolize the rate of proliferation—and the measures taken to limit the degree of proliferation after the first explosion. Yet clearly there is a difference, for example, between a South Asia in which India and Pakistan engage in an escalating nuclear arms race, and a situation which stabilizes around the fiction of one-time "peaceful nuclear explosions." Measures to deal with the degree of proliferation will be difficult to announce in advance, but will need advanced thought.[20] That thought must balance the effects of rate and degree; and of any measures both on the region and on the general regime. And the regime tends to be defined in terms of rate alone.

Relations among regimes

International regimes coexist in different issue areas with a degree of autonomy from each other. Nonetheless, they also exist within an overall political context and can have a net strengthening or weakening effect on each other. In one direction the nonproliferation regime interacts with other nuclear weapons and arms control regimes, in the other direction with international energy and economic regimes. A successful nonproliferation policy in the 1980s will require attention to the connections in both directions.

The relation between nonproliferation and other arms-control regimes is not as simple as it first appears. The usual connections are made by provisions like Article 6 of the NPT, and by various UN Disarmament Committee resolutions calling for a halt to the "vertical proliferation" of the arms of the superpowers.

This gives rise to certain paradoxes in nonproliferation policy. Ironically, calculability and stability of deterrence between the United States and the USSR has occurred over time and at high levels of weaponry. By historical evolution this pattern has produced prudence in their relationship and

[20] See Lewis Dunn, "After INFCE: Some Next Steps for Nonproliferation Policy," *Hudson Institute Paper* 33 (Autumn 1979).

extended deterrence to their allies who have thus been able to eschew the development of nuclear weaponry. Changes in the balance which are perceived as weakening the credibility of deterrence threaten not only the stability of the central relationship, but reduce the sense of security that permits allied states to foreswear proliferation. It is paradoxical but true that under many circumstances the introduction of a single weapon in a new state may be more likely to lead to nuclear use than the introduction of an additional thousand each by the United States and the Soviet Union.[21]

On the other hand, to profess indifference to the superpower nuclear arms relationship can weaken the nonproliferation regime in two different ways. First, a disdain for the arms control institutions and concerns expressed by nonweapons states can exacerbate the discrimination issue that is the central dilemma in nonproliferation policy. Second, nuclear doctrines and deployments which stress the usefulness of nuclear weapons in warfighting situations may help to increase the credibility of deterrence, but they also tend to make nuclear weapons look more attractive to others. If states that have deliberately eschewed nuclear weapons see them treated increasingly like conventional defensive weapons, they may one day reconsider their decisions. In short, the relation between nonproliferation and the general nuclear arms control regimes will require a sensitivity to both horns of the dilemma, during what promises to be a difficult period in the superpower relationship.

An analogous problem arises in relation to efforts to control conventional arms. Too often in the late 1970s, U.S. policy was unwilling to come to terms with the "dove's dilemma" of chosing between conventional or nuclear weapons. Conventional weaponry is an alternative to nuclear weaponry in providing a sense of military security in situations of extreme threat. On the other hand, conventional arms can be complements as well as alternatives to nuclear weapons. Arms transfers that provide effective delivery systems for nuclear weapons are no solution to the "dove's dilemma" nor to the problems of limiting advanced proliferation. Again, the need to balance the relations between security policies will be critical in the 1980s.

In the realm of energy and economic regimes, it is important that the moderate restrictions of an evolutionary approach to the nuclear fuel cycle not appear as a general posture of technology denial by advanced countries. Threats that poor countries will go nuclear to turn the terms of the North-South dialogue are not particularly credible because nuclear weapons are so ill-suited to such a purpose. But indifference to the energy and economic concerns of poor countries can weaken the nonproliferation regime. A forthcoming posture on energy and technology transfer including the development of nonnuclear energy alternatives, and other measures to deal with energy in-

[21] George Quester, "Nuclear Proliferation: Linkages and Solutions," *International Organization* 33 (Autumn 1979).

security, can help take the edge off of confrontations which may generate a spiteful dynamics over status and attention rather than security.

While national security concerns are the dominant reason for most states to preserve and strengthen the nonproliferation regime, at the same time, it is important not to neglect the status/prestige interests that nations have. Above all, it is important on prestige grounds that overt discriminatory solutions be avoided. Justifiable temporary differentiation and permanent discrimination are not the same thing. The United States must be careful not to reinforce the illusion that being a nuclear weapons state provides unusual privileges or position in international affairs. The weight of a state's voice in international forums, how it fares in the Law of the Sea, the exchange rate for its currency, or in resource transfers really does not have much to do with whether it possesses a nuclear weapon or not. There are other more usable and directly effective forms of power. The nuclear weapons states must be careful not to try to use nuclear status to threaten in other areas. And their general posture in international energy and economic regimes is bound to have an effect on their ability to manage the acceptability of the degree of discrimination that is inherent in the nonproliferation regime.

Conclusion

Three-and-a-half decades have passed since the energy of the atom was used in warfare. Yet rather than nuclear doom, the world has seen a surprising nuclear stability, thus far. Equally remarkable is the fact that while over the same period nuclear technology has spread to more than two-score nations, only a small fraction have chosen to develop nuclear weaponry. A third notable point about the period has been the development of an international nonproliferation regime—a set of rules, norms, and institutions, which haltingly and albeit imperfectly, has discouraged the proliferation of nuclear weapons capability. Can this situation last? Obviously there will be changes in political and technical trends, but the prospects that proliferation may be destabilizing in many instances, that nuclear weapons need not enhance the security position of states, and that superpowers cannot fully escape the effects provide the common international interest upon which the nonproliferation regime is based. Under such conditions some inequality in weaponry is acceptable to most states because the alternative anarchic equality is more dangerous. So long as countries can be made better off without a bomb than with one, then a policy of slowing the spread of nuclear weapons technology rests on a realistic formulation of common interests, and there are serious prospects for maintaining a legitimate and stable international nuclear regime.

Realistically, an international regime does not need perfect adherence to have a significant constraining effect, any more than deviant behavior means

the irrelevance of domestic legal regimes. Nevertheless, there is a tipping point beyond which violations lead to a breakdown of normative constraints. The police function is traditionally the domain of the great powers in international politics, but if their preponderance in the nuclear issue area erodes, and they become diverted by other issues, there is a danger that the gradual historical curve of proliferation could approach such a tipping point.

Given the natural decline in American preponderance in the nuclear issue area, it was important that the burden of leadership in regime maintenance be more broadly shared. To a considerable extent, INFCE and the other initiatives of the late 1970s helped to accomplish this spreading of the burden. The United States persuaded others to share its agenda. For example, in sharp contrast to attitudes three years ago, key figures in Japan warn against asserting only "our own position and lacking the wider perspective of anti-proliferation."[22] Or as one long-term French official noted wryly and privately in Vienna near the end of the INFCE, "we may encroach on your markets, but somehow we seem to have inherited your nonproliferation policy in the process." Changed attitudes are reflected in many decisions such as the June 1977 German policy of no further exports of reprocessing plants, or the agreement about sanctions in the 1978 Suppliers Guidelines, or the French pressure on South Africa and restrained response to Brazilian inquiries about breeder technology, and other examples not yet public. As important as the specifics is the general convergence that Lellouche describes elsewhere:

> The 1946 Baruch Plan, the Atoms for Peace Plan of 1953, the creation of the IAEA in 1957, the Test Ban Treaty of 1963, the Nonproliferation Treaty of 1968, the formation of the London Suppliers Group in 1974 and the launching of INFCE in 1977—each of these landmarks in the history of nonproliferation has been the product of U.S. policy. However the conditions which once made it possible for the United States to control proliferation unilaterally are no longer present. This in turn requires a change in mentality on the part of American leaders. Indeed the greatest achievement of the Evaluation would be to help change this mentality within the United States itself just as the Evaluation has helped to develop in Europe and elsewhere a greater awareness of the security implication of nuclear power development.[23]

To a very considerable extent, leadership in the job of maintaining the nonproliferation regime is now shared. But collective leadership is difficult to manage. The United States still has to adjust to sharing the process. The wrong policies in the 1980s could still sacrifice the current modest success in regime maintenance on the altars of either purism or cynicism. The best is sometimes the enemy of the good. So also is short-sighted blindness to the possible conse-

[22] *Asahi Shinbun*, editorial, 25 February 1980.
[23] Pierre Lellouche, "International Nuclear Politics," *Foreign Affairs* (Winter 1979/80): 347–8.

quences of the worst. Unfortunately, there is no simple solution to the political problem of proliferation. But given the difficulty of constructing international institutions in a world of sovereign states, and the risks attendant upon their collapse, political wisdom begins with efforts to maintain the existing regime with its presumption against proliferation.