NUCLEAR NON-PROLIFERATION

CONGRESS AND THE CONTROL OF PEACEFUL NUCLEAR ACTIVITIES

Robert L. Beckman

A WESTVIEW SPECIAL STUDY

Nuclear Non-Proliferation
Congress and the Control of Peaceful Nuclear Activities

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About the Book and Author

This book examines the Nuclear Non-Proliferation Act of 1978 and other stringent non-proliferation laws that seek to tighten U.S. nuclear export criteria and strengthen the international non-proliferation regime. It juxtaposes efforts of nuclear managers with those of reformers who remain intent on strengthening safeguards to prevent horizontal proliferation. Dr. Beckman looks at the development of the Atoms for Peace program, the mindset that grew up along with it, and the shifts in congressional thought about the promise and problems of the peaceful nuclear fuel cycle.

Robert L. Beckman is visiting assistant professor at the U.S. Naval Academy, Annapolis, Maryland. He was formerly consultant with the Science Policy Research Division and Environment and Natural Resources Policy Division, Congressional Research Service, Library of Congress.

For my father and for Byron:
They taught through example
that manhood consists less
in doing what one pleases
than in living what one values.

And for my mother and Grace:
Women of compassion, lovers of truth.

They helped grind the moral lens.

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Robert L. Beckman
Falls Church, Virginia
May 1985

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Introduction

On March 10, 1978, President Jimmy Carter signed the Nuclear Non-Proliferation Act of 1978, Public Law 95-242 (NNPA). It was a major piece of legislation in a continuing series of legislative acts to limit the further spread, or proliferation, of nuclear weapons and the materials and facilities needed to make them. In remarks at the bill signing ceremony, President Carter said that the legislation "would be a much more predictable factor in the decisions made by foreign nations." He added that "some of our friends abroad will have to readjust their policy."[1] In additional remarks, Sen. Charles Percy (R-Ill.), one of the chief sponsors of the legislation, said that "this day marks the moment when the nuclear nonproliferators take over against the nuclear salesmen. . . . [W]e insist upon safety of humanity taking first precedence, I think, over the sale of nuclear materials."[2]

Their remarks highlight several of the paradoxes and conflicts that accompany the use of nuclear energy for peaceful purposes. The United States has struggled for over thirty years to reconcile inherent contradictions and competing interests that give rise to disagreements about ways to use nuclear power without further spreading nuclear weaponry. The same disagreements and conflicting worldviews hinder domestic and international efforts to design and implement a system of nuclear controls. Such a system has been elusive.

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[1]U.S., President, Public Papers of the Presidents of the United States (Washington, D.C.: Government Printing Office, 1980), Jimmy Carter, 1978, vol. 1, p. 498.

[2]Ibid., p. 499.

An inescapable fact for policymakers is that the use of uranium for peaceful purposes ensures the production of fissionable material that can be used to help manufacture nuclear weapons.[3] Thus, the worldwide spread of nuclear reactors makes access to potential bomb ingredients much easier. U.S. nuclear policy, based as it has been for over thirty years on a simultaneous course of promotion and control of the peaceful uses of atomic power, continues to search for better ways to balance the tensions among the interests that compete for predominance in the manipulation of nuclear energy by humans: national security, scientific and material progress, health and safety, prestige, influence, and nuclear commerce. Because the United States is a leading nonproliferator and purveyor of nuclear technology, its policy choices grow increasingly complex in the face of relentlessly constricting change in world demand for nuclear equipment, technology, and materials.

Those policy choices--and the tensions created by the seemingly contradictory and competing domestic and foreign policy goals--are the subject of this study. Many studies of nuclear nonproliferation, while acknowledging the connection between peaceful nuclear power and nuclear weapons,[4] emphasize the dangers of a lack

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[3]Thorium and protactinium can also be utilized, but the problems with them are numerous; most work to date has been with the more easily fissioned element uranium and its derivatives. Nevertheless, the search for an alternative fuel cycle goes on. See "Thorium Fuel Cycle Gets Another Look," Atomic Industrial Forum Special Report, February 10, 1977.

[4]Informed discussions on the links between nuclear reactors and nuclear weapons can be found in Bennett Boskey and Mason Willrich, Nuclear Proliferation: Prospects for Control (New York: Dunellen Co., 1970); Ted Greenwood, Harold A. Feiveson, and Theodore B. Taylor, Nuclear Proliferation: Motivations, Capabilities, and Strategies for Control (New York: McGraw-Hill Book Co., 1977); Nuclear Power Issues and Choices, Report of the Nuclear Energy Policy Study Group, Sponsored by the Ford Foundation, administered by the MITRE Corporation (Cambridge, Mass.: Ballinger Publishing Co., 1977); U.S., Congress, Office of Technology Assessment, Nuclear Proliferation and Safeguards (New York: Praeger Publishers, 1977); Mason Willrich and Theodore B. Taylor, Nuclear Theft: Risks and Safeguards (Cambridge, Mass.: Ballinger Publishing Co., 1974); and U.S., Congress, Senate, Committee on Government Operations, Peaceful Nuclear Exports and Weapons Proliferation,

of international controls by looking at the institutional, economic, and political impediments to such control. Although a few studies document the changing attitudes and policies of the United States toward nonproliferation that create such impediments,[5] no study analyzes either the changes or the consistencies in U.S. nonproliferation legislation and policies that have directly affected international control.

This study is an attempt to provide that analysis. Specifically, the study examines the history of U.S.

Committee Print, 94th Cong., 1st sess., April 1975.

Numerous early studies argued for international controls and some form of world-ordering institution to police and enforce the controls. Among those are Harrison Brown, Must Destruction Be Our Destiny? (New York: Simon and Schuster, 1946); Harry Gideonse and others, The Politics of Atomic Energy (New York: Woodrow Wilson Foundation, March 1946); Morton Grodzins and Eugene Rabinowitch, eds., The Atomic Age, Articles from The Bulletin of the Atomic Scientists, 1945-1962 (New York: Basic Books, 1963); Henry DeWolf Smyth, Atomic Energy for Military Purposes, The Official Report on the Development of the Atomic Bomb under the Auspices of the United States Government, 1940-1945, (Princeton, N.J.: Princeton University Press, 1945); and U.S., Department of State, Committee on Atomic Energy, A Report on the International Control of Atomic Energy, Publication 2498 (Washington, D.C.: Government Printing Office, March 16, 1946), hereafter cited as the Acheson-Lilienthal Report.

[5]The most thorough report on the early atomic energy years and the development of a U.S. policy is in "A History of the United States Atomic Energy Commission" by Richard G. Hewlett and Oscar E. Anderson, Jr., The New World, 1939/1946, vol. 1 (University Park: Pennsylvania State University Press, 1962); and Richard G. Hewlett and Francis Duncan, Atomic Shield, 1947/1952, vol. 2 (University Park: Pennsylvania State University Press, 1962). Through the years there have been studies that examined certain aspects of changing U.S. policy. See, for example, William Bader, The United States and the Spread of Nuclear Weapons (New York: Western Publishing Co., 1968); Leonard Beaton and John Maddox, The Spread of Nuclear Weapons (London: Chatto and Windus, 1962); Philip Mullenbach, Civilian Nuclear Power: Economic Issues and Policy Formation (New York: Twentieth Century Fund, 1963); and Mason Willrich, Non-Proliferation Treaty: Framework for Nuclear Arms Control (Charlottesville, Va: Michie Co., 1969).

efforts to establish an international control system alongside domestic efforts to write legislation that would control peaceful nuclear exports. Since virtually every enduring problem of international control that the world faces in the 1980s was anticipated and examined in the 1946 Acheson-Lilienthal Report, a question can be raised about whether, and how, the contemporary political environment and approaches to international control differ, if at all, from those recommended in 1946.

From the beginning, concern was raised that without international safeguards (those sanctions and methods of control and inspection to detect diversion of fissionable materials to weapons use), the number of states with atomic armament programs would grow. As the number of nuclear weapons states slowly increased, along with the number of nonnuclear weapons states with the requisite skills and materials to produce a weapon,[6] legitimate and sober concerns were raised by some that the United States was hampering efforts to build an effective system of controls.[7] Certainly there is growing evidence that U.S. policy and recent nonproliferation legislation must be reevaluated to ensure that their goals can be accomplished by attainable controls, and that they provide the requisite support for effective operation. A mismatch between policy and controls can serve the purposes of neither.[8]

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[6]A list of the near-nuclear countries, their incentives and their capabilities, along with other so-called "problem countries," is in Leonard S. Spector, Nuclear Proliferation Today (New York: Vintage Books, 1984). Problem countries include, at a minimum, Argentina, Brazil, India, Iraq, Israel, Libya, Pakistan, and South Africa.

[7]See Bertram Wolfe, "Could America's Nuclear Policies Be Counterproductive?" Bulletin of Atomic Scientists (BOAS) (January 1980), pp. 43-48; and Amory B. Lovins, L. Hunter Lovins, and Leonard Ross, "Nuclear Power and Nuclear Bombs," Foreign Affairs 58 (Summer 1980), pp. 137-1177. Other recent analyses are contained in U.S., Congress, Senate, Committee on Governmental Affairs, Reader on Nuclear Proliferation, Committee Print, 96th Cong., 2d sess., (December 1980).

[8]For a detailed study of current U.S. non-proliferation policies toward near-nuclear countries, along with the policies of those countries, see Joseph A. Yager, ed., Nonproliferation and U.S. Foreign Policy (Washington, D.C.: Brookings Institution, 1980). For an analysis of the limitations of the NNPA, together

The challenges to national sovereignty necessitated by an effective safeguards system have been explored throughout the years. It is thus particularly appropriate that this study assess the legislative basis of U.S. nuclear nonproliferation policy and actions at a time when world attention is again focused on the shortcomings of control mechanisms and the dangers portended by anarchy in nuclear affairs.

A thesis of this study is that the international control of nuclear energy* is more a political than a technical or scientific problem.[10] Governments do not

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with suggestions for modification of U.S. policy, see U.S., General Accounting Office, Comptroller General's Report to the Congress, The Nuclear Non-Proliferation Act of 1978 Should Be Selectively Modified (Washington, D.C.: Government Printing Office, May 21, 1981).

*With the explosion of the fusion (thermonuclear) weapon, "atomic energy" was expanded to "nuclear energy."

[10]A countering view is that an international control system demands technical analysis. According to the Nuclear Control Institute (NCI), a Washington-based nuclear think tank, the international nuclear energy industry and the international safeguards regime developed to control that industry continue with anachronistic thinking. For nearly forty years, the conventional wisdom has been that fissionable material, particularly plutonium, could be made secure against diversion and use in nuclear weapons. NCI maintains that an independent, technical study of the safeguards problem, if it is conducted by analysts without a stake in the nuclear industry's continued existence, will show that the safeguards problem is virtually insoluble for the plutonium economy. The risks of using plutonium, therefore, would outweigh the benefits.

Lacking such a technical analysis, NCI maintains, the nuclear industry continues under its own momentum, advertising that safeguards for all forms of nuclear energy-generated electricity are adequate.

The reason no such dedicated technical analysis has been initiated, however, is because of a lack of political will to address the problem outright. Studies have been undertaken to address problems in the entire fuel cycle, and their conclusions generally reinforce the fact that there is no one technology that is inherently more proliferation-resistant than another, but none has looked specifically at both the political and technical ramifications of plutonium and the inability of the safeguards system to provide timely