Life and death after Trinity: bombs, reactors, "nukespeak"

The Cult of the Atom: The Secrets of the Atomic Energy Commission

D. Ford
273 pp. Simon & Schuster, New York, 1982. $13.95

Nukespeak: Nuclear Language, Visions, and Mindset

S. Hilgartner, R. C. Bell, R. O'Connor
282 pp. Sierra Club, San Francisco, 1982. $14.95

The Nuclear Barons

P. Pringel, J. Spigelman
578 pp. Avon Books, New York, 1981. $4.95.

Reviewed by Gordon Adams

Life in the "uranium age" as seen in 1941. Most activities take place underground; the park-like surface is given over to recreation and transportation. This illustration, from the January 1941 issue of *Popular Mechanics*, appears in *Nukespeak*, reviewed here. (© Hearst Corporation, with permission.)

The nuclear age, born out of mammoth government funding for the wartime work of the Manhattan Project, has grown up sustained by close relationships among the executive branch of the government, industry and Congress. Scientists have helped bring these groups close together. As the links among them have become more apparent, they have started to contradict myths we have about our free-enterprise economy and about the independence of our leading citizens and scientists.

These three books describe our gradual loss of credulity and bring enlightenment to the history and development of nuclear weapons and nuclear power. *Nukespeak* provides detailed insight into the language of the "nuclear mindset," without explaining the political role it plays—how the redefinition of language serves the alliance of government and nuclear industries. *The Cult of the Atom* offers a detailed, thoroughly researched understanding of how government agencies and private industry exclude the public while they make political decisions that meet their own interests. *The Nuclear Barons* moves this analysis to the international level, focusing not only on the development of the US nuclear-power and nuclear-weapons programs but on similar developments in France, Canada, the United Kingdom, the Soviet Union, Germany, Japan and India, among others. The myths that surround the US atomic enterprise have been promulgated in many other countries as well.

The Nuclear Barons and *The Cult of the Atom* very carefully chart the development of the nuclear-power industry. They deflate the myths that our economy is based on free enterprise, that entrepreneurship earns its own rewards and that the government plays a minimal hand. After World War II the nuclear-power industry was subsidized by military spending and was fostered by institutionalized government–industry planning. Through the energetic efforts of scientists, administrators and industrialists—Edward Teller, Lewis Strauss, Alvin Weinberg, Glenn Seaborg and Hyman Rickover—new institutions emerged in

Gordon Adams is director of the Defense Budget Project at the Center on Budget and Policy Priorities in Washington, D.C. He is the author of *The Politics of Defense Contracting: The Iron Triangle*.

American politics: the Atomic Energy Commission, with responsibility for civilian and military nuclear development, and the US Congress Joint Committee on Atomic Energy. These bodies planned and implemented Federal subsidies that provided the nuclear-power industry with at least $12 billion from 1946 to the present day. They also awarded major military subsidies crucial for enticing private industry. Pringle and Spigelman in *The Nuclear Barons* describe the pivotal role Admiral Rickover played. Responsible both for AEC naval reactor development and for the Navy's nuclear submarine program, Rickover also succeeded in enlisting Westinghouse. The relationship between the Navy, AEC and Westinghouse became a model for relationships between the government and the nuclear industry as a whole. As Ford quotes former Senator Abraham Ribicoff, it became "difficult to determine in the organization scheme of the AEC, where the Commission ends and industry begins." An *atomic triangle* of industry–Congress–Federal agencies was firmly in place.

With the development of military reactors, civilian reactors inevitably followed—regulated by their proponents. Ford unmasks the myth of the scientific integrity of Federal agencies. He brings to life how the atomic triangle became dedicated less to the development of scientific knowledge than to the promotion of its own power. The dual mandate—to regulate and to promote nuclear power—led to a continuing unacknowledged conflict within the AEC. As industry–government interpenetration progressed, the public eventually lost control of this critical industry and its technology. The AEC used company-supplied data on reactor safety and put industry in charge of implementing safety regulations developed jointly by the companies and AEC.

Ford demonstrates how the public was denied access to critical information on reactor safety. He relates (page 48) that industry and AEC officials joined together to produce and promote public-relations materials, sponsoring films and pamphlets on nuclear power. Both Ford's book and *Nukespeak* illustrate the constant effort by the nuclear-power industry and government agencies to keep from the public information that contradicted the official sales pitch on behalf of nuclear power. They cover such critical areas as nuclear-reactor safety, the risk of loss of life due to reactor accident, and the impact on the public of the release of radiation from nuclear-weapons tests. Ford, in particular, uses voluminous AEC records to document that the Agency withheld information that indicated that nuclear reactors were far less safe than the AEC wanted the public to believe.

The effort to alter public perceptions of the risks involved in nuclear power and nuclear weapons was lengthy and intense. In an Orwellian exercise, public-relations strategists for the industry sought to redefine public understanding. Ford describes (page 78) the efforts of Hal Stroube of Pacific Gas and Electric to urge the elimination of such "objectionable words" from the description of nuclear power as "criticality," "poison curtain," "nuclear excursion," "scram," "maximum credible accident." The effort to mystify the public continued well into the 1970s. According to Frank B. Shants, of the Public Service Company of New Hampshire (1978), it was important to "counter the activists not with facts but with closed factory gates, empty schools, cold and dark homes, and sad children."

The myth that scientific inquiry involves an objective search for the truth has also suffered. Ford presents the example of Norman C. Rasmussen, author of a major, and much criticized, analysis of reactor safety. A professor at MIT, Rasmussen was a consultant to public agencies as well as to such companies as Burns and Roe (nuclear-power engineers) and Reedy Communications (a consulting firm instructing companies on how to debate critics of nuclear power). *Nukespeak* details how scientists as policy makers seem to lose their commitment to true inquiry. The nuclear enterprise became cloaked in the veil of national security and its scientist-policy-makers began to see themselves as a new priesthood bringing us the benefits of new energy and nuclear deterrence and seeing that we weren't bothered by public discussion of the down side of those benefits. Within this priesthood, truth-tellers were scorned and cast out because they lacked loyalty. *Nukespeak* gives the example of Thomas Mancuso, an industrial epidemiologist hired by AEC to study occupational radiation at Hanford and Oak Ridge. Mancuso's refusal to cover up the risks of radiation led to AEC termination of funds for his work, rather than to exploration of the real risks and dangers involved in nuclear plants. Mancuso's contract and data were transferred to friendlier hands in the community at Oak Ridge and Hanford. Mancuso's experience is matched in the military community. Pentagon whistle-blowers like A. Ernest Fitzgerald and George Spanton have suffered the same fate in the past 15 years. The practice within the community is not one of free inquiry: As Pringle and Spingelman put it, the test is "loyalty to the institution." Information for its own sake no longer exists; it must serve institutional needs; if it doesn't, it must be buried and its bearer removed. This experience of closed policy-making,

with suppression of truth and dissent, suggests we need to be skeptical when Alvin Weinberg, former head of Oak Ridge National Laboratories, asks, as he did in 1977, that the public accept a "nuclear priesthood" to run the nuclear industry, and rely on its good judgment about the risks involved. The record of the scientific community in managing the enterprise of nuclear power and nuclear weapons is not promising.

Fortunately for what remains of democracy, truthfulness and scientific inquiry in the United States, the reality about the nuclear age began to emerge. The radiation damage suffered by Japenese fishermen in the 1954 BRAVO nuclear-weapons test, the realization in the Vietnam war that the government could not pursue a policy as successfuly as it claimed, the realization in Watergate that government officials might lie, the accident at Three Mile Island that revealed critical risks in the nuclear enterprise—all of these events have made it clear that the public must become involved in the process of deciding about nuclear energy and the military nuclear future.

Broadening the arena of debate over nuclear power and nuclear war has been difficult. The most important change has been the development of alternate sources of information and expertise that can survive tests of scientific accuracy and objective judgment. Scientists and engineers have begun to leave nuclear-power companies and speak of their experience. Economists, environmentalists and researchers have begun to examine claims about the cost and safety of nuclear reactors and about the wisdom of pursuing yet another generation of destabilizing nuclear weapons. Gradually, this information has challenged the proponents of nuclear power and nuclear war. The debate over nuclear power has been the more successful, fueled by reactor safety incidents, the realization that nuclear power would cost a great deal more than promised, and the decline in demand for energy that followed the Middle East crisis of 1973. Nuclear technology's day is now passing. A similar stage in the debate over nuclear weapons is still a step away, but approaching rapidly.

With Enough Shovels: Reagan, Bush & Nuclear War

R. Scheer
285 pp. Random House, New York, 1983. $14.95

To explain his policy on arms control, President Ronald Reagan said in an interview (*The Wall Street Journal*, 3 February 1984), "The only way we were going to convince them [the Soviet Union] that common sense called for reduction of arms was to build our own defenses to where we had a deterrent capacity." At the same time, Sir Rudolph Peierls wrote "one can argue about the size of the minimum deterrent, but there is no question that the stockpiles are grossly in excess of that minimum" (*Bulletin of the Atomic Scientists*, January 1984). Peierls, one of the world's pre-eminent physicists, was adviser to the British Government for many years and has maintained active involvement in nuclear-arms-control discussions.

Robert Scheer's book *With Enough Shovels: Reagan, Bush and Nuclear War* is a useful reference to help one make sense of the disparity between these two statements. Scheer, a national reporter for the *Los Angeles Times*, has based his book on interviews with Reagan, George Bush, Eugene V. Rostow and other Administration officials. The title of the book is taken