thus find an interesting assortment of units and scale designations. The text is remarkably free from typographical errors.

All in all, this is an interesting volume and should prove most useful to those who have a need for a general understanding of air-cooled condensing systems but who will not be directly involved in detailed system design.

John F. Bregar, who received his PhD in nuclear engineering at the University of Arizona in 1966, has been a professor of engineering on the faculty of mechanical engineering at Arizona State University since 1965. He has considerable experience in the Naval Reactors Program for the Newport News Shipbuilding and Dry Dock Company and participated in the construction and operational testing of the Shippingport Nuclear Power Station, the prototype for reactor plant for aircraft carriers at Idaho Falls, and on a number of nuclear submarines. His current interests are in nuclear power plant systems.

Annual Review of Nuclear Science

Editor	Emilio Segre
Associate Editors	J. Robb Grover H. Pierre Noyes
Publisher	Annual Reviews, Incorporated (1974)
Pages	612
Price	$17.50
Reviewer	Joseph G. Gratton

As usual, the editors of the 1974 *Annual Review of Nuclear Science* have put together a group of very fine papers of importance to the nuclear physics community.

Each article meets the series' requirements that the work contain enough original material to justify its presentation. I would be remiss not to note that some articles are very marginal in this regard. The liberal use of references in the articles is excellent for those who wish to seek out a deeper understanding of the areas discussed.

The "Post-Fission Phenomena" review appeared to me to be an especially good summation of the work. In a lighter technical vein, but of no less interest, was Guinn's review of "Applications of Nuclear Science in Crime Investigation." The approach taken by the author was of special interest to this reviewer.

The articles presented in this 1974 Review were all well written and should be of considerable interest to its readers.

Joseph G. Gratton (MS, nuclear chemistry; BS, nuclear physics) is in a management position at the U.S. Energy Research and Development Administration (ERDA) and has been associated with the nuclear science community in both government and industry for 27 years. He has been a major contributor to the publication programs of both the U.S. Atomic Energy Commission/ERDA and the American Nuclear Society.

Science Policy Making in the United States and the Batavia Accelerator

Author	Anton G. Jachim
Publisher	Southern Illinois University Press at Carbondale and Edwardsville
Pages	208
Price	$8.95
Reviewer	V. Lawrence Parsegian

The 1976 fiscal year budget of the U.S. Energy Research and Development Administration (ERDA), which assumed the development responsibilities of what had been the U.S. Atomic Energy Commission (AEC), includes $17 900 000—for the support of high-energy physics. The interesting aspect is that of this total, $10 200 000 is earmarked for the Fermi National Accelerator Laboratory (FERMILAB) located in Batavia, Illinois. The money will go toward increasing the accelerator capabilities beyond the 200-GeV (or BeV) particle energies for which it was designed to energies of 400 GeV or higher. How this midwestern region became the site for a facility that was regarded as "the scientific prize of the century" is the theme of the volume by Anton G. Jachim. It is a case study that carries large implications for the scientific enterprise in the nation's other activities.

The story begins in the 1960's, following two decades of rapid growth of the scientific enterprise through government support. During that period physics and physicists rode the crest. The success of the atomic energy programs had given unusual credibility to the values that derive from basic research. High-energy physicists were especially favored, both through professional prestige and through financial support for one powerful accelerator facility after another, most of which were located on the east and west coasts. The next step was an accelerator facility estimated to cost $350 million. By then the mood of the nation had changed to become somewhat critical of large annual increases in funds for basic research, and especially critical of grants that seemed always to go to the same established laboratories. (Of course, there was no thought of reducing the support given to the Vietnam war.)

Competition for research funds brought focus on the procedures by which government agency funds were allotted. Clearly the procedures were consonant with the "Matthew Effect," which Robert Merton had derived from the gospel according to Matthew ("For whosoever hath, to him shall be given . . ."). The practice of depending on specialists to review research proposals assured that only those who were recognized as specialists would be supported, thereby tending to limit others to the leavings.

The large state universities of the midwest had achieved considerable reputation for the quality of their graduates, but they were not regarded as research centers. The Midwest Universities Research Association was organized in 1953 to improve that reputation. Now, a decade later, the Association felt ready to make claim to this newest most powerful accelerator and national laboratory that was under consideration. But there was the question of how that claim could be given validity against the claims of powerful universities of California

and of the Northeast, the faculties of which staffed the advisory committees of government agencies, and of the National Academy of Sciences. There was also the huge obstacle in the logic that large federal moneys should go to those most skilled for the work to be done.

By 1963, however, political forces in Washington and in state capitals demanded that considerations of regional equality be included in the application of that logic. U.S. Representatives and Senators entered the fray, along with the National Academy of Sciences and the AEC Even more participation was demanded of the state agencies and universities of the midwest to demonstrate their readiness for the research task. What they lacked in high-energy research experience was made up by advance checking of the likes and dislikes of each visitor who came as a member of a site selection team. There were ready answers with which to satisfy every visitor. As a result, when the 150 potential sites were reduced to a half dozen, the midwest was still represented. The people had learned how to persuade the AEC.

Ironically, when by Mar. 1966 a site in Illinois was selected, local residents rose in protest. Fortunately, a more receptive town was still available in the same region. But then the issue of civil rights raised its head, almost turning attention to other parts of the nation for a site. Nevertheless, on Dec. 16, 1966, the site of Weston, Illinois was finally selected, to become known as Batavia.

The fight did not end there, however. Before long the AEC was called to answer other critics from the press, the universities, and from Congress for its decision. Where equality in regional development had been a primary consideration in the early stages of the fight, the AEC was now forced to deny that aspect as having been important in the choice. There came next the decision to allow only $250 million for the construction. Here again the challenge was met by the midwest scientists, who at the same time redesigned the accelerator to permit later modifications to double the particle energies with little additional cost.

Since these events, the members of Congress have been emboldened to question the magnitude of funds to be assigned for support of all basic research and to question the methods for allocating the funds by peer review, whether for basic or applied research. This occurs at a time when the concept of the gross national product as measure of progress is itself under attack. Social scientists are quick to point out that neither basic research nor technological innovations have reduced economic disparities within the nation or within the world at large. The trend toward giving political and social considerations a larger voice in the support of research therefore continues. Where this will leave the role of science and of the scientist in human affairs is not altogether clear. For some years now science and the scientists have served the forces that make for national defense and war, and only time will reveal whether they will be worse off with more lay masters.

Jachim's volume is well worth the time it takes to read it, even allowing for some of its wanderings.

Prior to coming to Rensselaer Polytechnic Institute (RPI) in 1954 to head the Engineering School, V. Lawrence Parsegian served as director of research with the New York Operations Office of the AEC. He has been an active participant in national policy discussions bearing on the relative roles of government, university, and industrial research. Currently he is Rensselaer Professor Emeritus of RPI, with interests continuing in the role of energy and of technology for human progress.