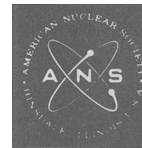


# BOOK REVIEW



Selection of books for review is based on the editors' opinions regarding possible reader interest and on the availability of the book to the editors. Occasional selections may include books on topics somewhat peripheral to the subject matter ordinarily considered acceptable.

*Title* Education for Peaceful Uses  
of Nuclear Explosives

*Editor* Lynn E. Weaver

*Publisher* The University of Ari-  
zona Press, Tucson,  
Arizona

*Pages* xii + 347

*Price* \$8.50

*Reviewer* John A. Wethington, Jr.

This book consists of the papers presented at the symposium, "Education for the Peaceful Uses of Nuclear Explosives," held at the University of Arizona, March 31-April 2, 1970. Lynn Weaver and the University of Arizona Press are to be congratulated for their persistence and promptness in collecting 31 independent manuscripts and presenting them in book form within such a short period of time. These individual papers, of uneven quality and usefulness, are helpful to people who were unable to attend the symposium. I can personally attest to this since, because of the miracles of modern transportation, my arrival at the conference was delayed by one-half day, and in reading the book, I found my interest was most stimulated by papers I had not heard.

Articles are grouped under five general headings: (1) Status of Nuclear Explosives Engineering in 1969, (2) Technological Requirements for Nuclear Explosives Engineering, (3) Legal Problems and Educational Programs, (4) University Research and Manpower Needs, and (5) Educational Development. These areas are of considerable interest to educators in departments of nuclear engineering or applied science. Since ther-

mal reactors are no longer great research efforts but essentially off-the-shelf items, people in these subject areas are looking for new fields to conquer. Project Plowshare activities constitute one such area.

Clearly, in the limited space available, a reviewer cannot comment on each paper; therefore I will limit my comments to those that I found particularly interesting. G. W. Johnson's "Technological Development of Nuclear Explosives Engineering" is a pleasant and easy-to-read account of Plowshare history. H. F. Coffey and Gary Higgins give excellent coverage of possible uses for nuclear explosives. One who has not really reflected on the use of these devices in underground engineering will be amazed at their versatility and potential. Wilson Talley in "Nuclear Technology" presents an interesting overview of the various technologies involved in using nuclear explosives. My impression is that I should go and do a lot of studying in subject areas unfamiliar to me. Paul Kruger, an educational pioneer in this field, summarizes the university courses in the use of nuclear explosives being taught in the United States during 1969—a surprisingly large effort. John V. Vinciguerra deals with the touchy subject "Needs of Government and Industry for Trained Nuclear Explosives Engineers." Anyone familiar with the manpower problems in physics will reflect carefully on this chapter. It should also be mentioned that Project Plowshare has suffered a budget cut; consequently manpower needs have diminished.

It has always been my belief that the less data a scientist has available, the harder he waves his hands when giving a speech. There is a

great deal of "hand-waving" in this volume. The one clear exception is Fred Holzer's "Gasbuggy Experiment." Here is a real experiment with real data, and this fact is reflected in his extremely interesting paper. More recent data have shown what an outstanding success the Gasbuggy experiment was, and now one wonders what will be the ultimate conclusions from the Rulison event.

This volume is useful for those people who are thinking about either teaching or research efforts in the field of nuclear explosives. Should they go into this subject area or not? The author has taken this step here at the University of Florida.

*John A. Wethington, Jr., professor of Nuclear Engineering at the University of Florida, graduated from Emory University and received his PhD degree in physical chemistry from Northwestern University. His work in nuclear energy dates back to 1943, when he was engaged in determining  $^{235}\text{U}/^{238}\text{U}$  ratios at the thermal diffusion plant in Oak Ridge, Tennessee. Subsequent assignments have included the Oak Ridge National Laboratory, Argonne National Laboratory, and the Puerto Rico Nuclear Center. He has been with the University of Florida since 1953, where he was instrumental in starting the Nuclear Engineering Sciences Department. Professor Wethington has lectured in both Europe and South America.*

*He spent the Summer of 1969 at the Lawrence Radiation Laboratory, Livermore, California, working with Project Plowshare. His concern was with possible methods for decontaminating natural gas produced from wells which have been stimulated by nuclear explosives.*