it to instructors who are willing to fill in the gaps with more perspective than is provided in the text. To those elderly nuclear engineers who would like to buy an up-to-date book for the shelf – keep hoping, but save your money for now.

Robert C. Axtmann
Princeton University
Princeton, New Jersey

(About the reviewer: Since 1959 Robert C. Axtmann has been Socony Mobil Associate Professor of Nuclear Studies in Princeton University's School of Engineering and Applied Science. He teaches nuclear physics (to engineers) and reactor theory (to anybody). Earlier assignments include two years in the Physics Division at ANL and seven years at Savannah River.)

Radiation Effects on Organic Materials. Edited by Robert O. Bolt and James G. Carroll. Academic Press, New York and London, 1963, 576 pp., $13.50.

Prepared under the auspices of the Division of Technical Information of the United States Atomic Energy Commission, this collection of essays is concerned with nuclear radiation and its effects on the properties of organic liquids, solids, and gases.

A broad gamut of subjects and materials are covered in the sixteen chapters by the thirteen contributing authors and co-authors. In sequence from Chapters 1-16, the titles of the chapters are: Introduction; Interaction of Radiation with Matter; Mechanisms of Chemical Effects of Ionizing Radiation; Radiation Chemistry of Pure Compounds; Polymers; Plastics; Elastomeric Materials; Coolants; Lubricants; Adhesives; Textiles; Coatings and Films; Dielectric Fluids; Fuels and Fluid Shield Materials; Coal, Wood and Explosives; and Potential Benefits.

Although the book is well written in general, special mention should be made of the clarity of presentation of the second and third chapters by Amos S. Newton on the Interaction of Radiation with Matter and the Mechanisms of Chemical Effects of Ionizing Radiation. Considerable thought and scholarly attention must have been devoted to these two chapters.

The editors have done a very commendable job. No really serious errors were detected, the book is well referenced, and the format and writing is very readable.

Perhaps the outstanding feature of the book is its extensive coverage of the literature. Although there are some definite errors of omission, a considerable amount of literature has been cited which is not too readily available.

About the only mildly negative reaction this reviewer underwent in perusing this volume was an apparent lack of coherence. However, this lack is somewhat inherent in any collection of essays by various authors.

In summary, this book is an excellent reference text, and it will prove very useful to any engineer who might have design or material problems involving radiation effects on organic materials.

Dr. Vincent P. Calkins
General Electric-Nuclear Materials
and Propulsion Operation
Cincinnati (Evandale), Ohio

(About the Reviewer: Dr. Vincent P. Calkins is currently Manager, Nuclear Materials at the General Electric-Nuclear Materials and Propulsion Operation in Cincinnati (Evandale), Ohio. He worked on the Manhattan Project at Iowa State University under Dr. F. H. Spedding and on the NEPA Project at Oak Ridge. His fields of interest include: selection of materials for nuclear reactors; the chemistry, ceramics, and metallurgy of high temperature materials; and basic phenomena of physics.)

Fabrication of Control Rods for Nuclear Reactors. By William E. Ray, Rowman and Littlefield, Inc., New York, (1963). $6.95.

This is one of a new monograph series on Metallurgy in Nuclear Technology produced by the American Society for Metals under sponsorship of the Atomic Energy Commission. According to the author's preface it is directed toward acquainting those "engaged in non-nuclear metallurgical work with the fabrication procedures for producing control rods for nuclear power reactors."

The sponsors could not have picked a more knowledgeable man to write this monograph than William E. Ray. Mr. Ray spent the years from 1955 to 1960 with the General Electric Co., at the Knolls Atomic Power Laboratory, and during this period a major part of his efforts were directed toward development of novel control/poison systems with a special effort directed toward improvement of fabrication technology. Subsequently, while with Dresser Products Inc., he retained this interest both in development and production. Rods for several of the current crop of new reactors, including the Experimental Gas Cooled Reactor and the Molten Salt Experiment at Oak Ridge as well as BONUS Reactor in Puerto Rico were built under his direction. In addition,