

# BOOK REVIEWS

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



## **Textbook of Nuclear Medicine: Basic Science**

<i>Editors</i>	A. F. G. Rocha and J. C. Harbert
<i>Publisher</i>	Lea & Febiger (1978)
<i>Pages</i>	412
<i>Price</i>	\$27.50
<i>Reviewer</i>	Dennis Patton

The editors have assembled an impressive panel of writers from the United States and Brazil, who have compiled a textbook that is an important contribution to nuclear medicine. It is a companion textbook to another by the same editors (*Textbook of Nuclear Medicine: Clinical Applications*). The book on basic science covers a wide range of subjects, and, unlike previous books on the subject, has special chapters on ultrasound, CT scanning, radio-carbon breath analysis, and neutron activation analysis. The book will be of interest to scientists associated with clinical or developmental nuclear medicine, and to nuclear medicine physicians needing a better background in the basic sciences. The book is quite thorough and contains a good bibliography with each chapter. The authors concentrate on principles, leaving the lengthier tabular data to the references. The subject matter is current: computer applications, semiconductor detectors, and new radiotracers, in addition to the four special chapters mentioned.

Quality control procedures for radiotracers are well documented, though quality control for instrumentation is also needed. Chapters dealing with instrumentation could have provided more practical information on clinical use for the benefit of scientists. Dose calibrators are only mentioned, and there is no discussion on operation or quality control. Compton effect and backscatter are important concepts to clinical nuclear medicine and should be discussed more widely. Internal radiation dosimetry is discussed, but there is no discussion of external dosimetry, an important omission.

In general, the style of writing is quite clear and key points are easy to find. The book will serve as an excellent introduction or reference, and together with the companion volume on clinical applications, makes an important addition to the nuclear medicine library.

*Dennis D. Patton, MD (AB, physics, University of California at Berkeley, 1953; MD, University of California, Los Angeles, 1959), was in private practice in Santa Monica, California from 1960 to 1965. Following a residency in radiology, he was certified by the American Board of Radiology in 1968 and by the American Board of Nuclear Medicine in 1972. He served as assistant professor of radiology and director of nuclear medicine at the University of California at Irvine, from 1968 to 1970; associate professor of radiology and clinical director of nuclear medicine, Vanderbilt University, from 1970 to 1975; and professor of radiology and director of the Division of Nuclear Medicine, University of Arizona, 1975 to the present. Dr. Patton's research interests are the evaluation of novel imaging techniques in nuclear medicine, measurement of cerebral blood flow using tracer techniques, and clinical decision analysis.*

## **Professional Engineer's License Guide**

<i>Author</i>	Joseph D. Eckard, Jr.
<i>Publisher</i>	Herman Publishing, Inc. (1978)
<i>Pages</i>	108
<i>Price</i>	\$6.95; cloth \$11.95
<i>Reviewer</i>	David J. Hall, P.E.

*Professional Engineer's License Guide* is a complete analysis of how one goes about obtaining Engineering Registration. It is a step by step procedure manual. While much of the material needed can be obtained from one's own State Board as listed in Appendix E, the book does gather all the necessary information in one place.

The references in Appendix D are helpful to a potential registrant for review. Especially helpful are the thoughts on "why registration?" and the latest views of the professional societies on the industry exemption clause.

However, the book does have several errors, including

1. *Educational Requirements* (p. 8). "In Arizona and many other states if one goes to a non-Engineer's Council for Professional Development engineering curriculum school

for four years and graduates, the length of time before being allowed to take the exam is usually graduation plus 5 or 6 years of experience.”

2. *Oral Exams* (p. 24). Arizona requires an oral examination and several other states do also. The Arizona oral exam covers the Arizona law and the operation of the State Board of Technical Registration. Under this section the applicant should be warned to obtain the state rules and study them carefully before the exam.

3. Throughout the booklet (for example, pp. 26 and 27) the author uses “he” a great deal. It should be noted that both men and women become registered. The text should be rewritten with this in mind.

*David J. Hall, P.E., has many years experience in the engineering profession both as a practitioner and a teacher. He is associate dean of engineering (ret.) of the University of Arizona. A graduate of Michigan State University and the University of Michigan, he is registered as a professional engineer in Michigan (expired when moved to Arizona) and Arizona, with emphasis in civil engineering. Mr. Hall has served on the Arizona State Board of Technical Registration and organized many engineering examination review classes.*

### **World Energy—Looking Ahead to 2020**

(Report by the Conservation Commission of the World Energy Conference 1978)

*Publisher* IPC Science and Technology Press (1978)

*Pages* 274

*Price* \$32.50

*Reviewer* Robert A. Fjeld

The World Energy Conference, since its inception in 1924, has assembled and published estimates of world (exclusive of the Eastern Bloc) energy resources. In 1975, the Conference established a Conservation Commission to consider energy supply and demand for the 1985 to 2020 time period. International Study Groups were formed to provide information on the supply of conventional resources such as oil, gas, coal, hydraulic, and nuclear fission; unconventional resources such as solar, geothermal, and nuclear fusion; and possible conservation measures. These Study Group reports were subjected to the scrutiny of Review Boards to provide the Commission with a broad base of expert opinion. This book represents the Conservation Commission’s conclusions concerning primary energy resource availability, demand projections, conservation potential, and possible energy supply strategies.

The major conclusion of the Commission concerning

energy demand should come as little surprise. Energy demand is expected to climb as technological and economic development spread to an increasingly larger fraction of the world’s populace. While the ratio of energy per unit income will likely decrease in the industrialized world either naturally or by political measures, it will increase substantially in the developing nations. On the supply side, oil and gas production is projected to peak near the end of the century, with its market share decreasing from a present level near 70% to less than 30% in 2020. Consequently, coal, nuclear, and solar sources will be called upon to provide world energy needs. The supply projections show significant increases in coal production (to meet 20% of 2020 demand); dramatic growth of fission power capacity to between 3200 and 5500 GW(electric) (to meet 30% of 2020 demand); and immediate breakthroughs in solar, including solar-electric, technology (to meet 10% of 2020 demand). Conservation is noted as a key element of future energy policy, but the Commission feels that projected demand cannot be met solely through more efficient use of currently available resources. It is stressed that energy strategy should focus on maximum production of conventional coal, oil, gas, and fissile resources; significant development of nonconventional oil and gas resources; and timely development of renewable resources such as hydraulic, solar, geothermal, biomass, and fusion. Receiving strong emphasis is the need for urgent action to conserve and develop energy resources, lest the world find itself locked into an “energy-constrained future” in which “those who can least afford it are likely to be the first to suffer.” The Commission makes specific recommendations for decision makers and notes that a pessimistic policy leading to oversupply is certainly to be preferred to an optimistic policy leading to shortage.

The book begins with a Digest (executive summary) and is followed by chapters on Energy Resources; Energy Conservation; Research, Development, and Demonstration; Energy Demand; and Supply Strategies. Although the chapters are written by different authors, the book does not suffer as style and format are consistent. Prefacing the results of a large study by a summary is a common practice that is very helpful to the reader. However, in this case, one must be aware that the first chapter is a summary of chapters that are themselves summaries drawn from the Study Group reports and Report Review Boards. For more detail one must consult the Study Group reports, which have also been published. Of particular interest might be the nuclear report, *Nuclear Resources* by J. S. Foster of Montreal Engineering Co., Ltd.

The book is excellent as a concise source of energy resource estimates and projections of world supply and demand for the midterm future and should definitely be on the bookshelf of an energy generalist.

*Dr. Robert A. Fjeld is on staff at the Nuclear Engineering Department at Texas A&M University. His primary interests are in the areas of environmental aspects of energy conversion and radiation applications.*