This publication will serve as a valuable reference for international regulatory requirements for the transport of radioactive materials. Review of these regulations will show general agreement with local government requirements. The user is cautioned that local considerations may dictate additional specific requirements that must be implemented. The standard is well organized and the enumerated paragraphs allow for clear cross-referencing. Only a very limited number of typographical errors were noted. An errata sheet was inserted but not bound into the publication. Immediate insertion of the corrections into the main text is suggested as this corrigendum is easily misplaced. In summary, this safety standard will serve as a practical reference for a wide audience that includes individuals from the practicing licensed engineer level through managers and even to representatives for various state and national governmental bodies.

After receiving his MS in nuclear engineering from the University of Missouri at Columbia in 1970, Gerald Schlapper joined the operations staff of the University of Missouri Research Reactor Facility. While on the staff, he supervised shipments of Type A and Type B quantities of radioisotopes, which included design and certification of shipping containers. On assumption of the position of reactor physicist in 1975, he acquired responsibility for spent-fuel shipments, which included safety analysis reports for spent-fuel casks. Dr. Schlapper received his PhD in nuclear engineering in 1977 and remained on the staff of the Research Reactor Facility until January 1981, when he assumed his current position as a faculty member of the Nuclear Engineering Department at Texas A&M University. During his career he has served as a consultant to various agencies including the U.S. Army, Argonne National Laboratory, and the U.S. Nuclear Regulatory Commission.

Advances in Radiation Protection and Dosimetry in Medicine

Editors	Ralph H. Thomas and Victor Perez-Mendez
Publisher	Plenum Publishing Corporation, New York (1980)
Pages	658
Price	$69.50
Reviewer	Gerald Schlapper

This volume consists of the *Proceedings of the Symposium on Advances in Radiation Protection and Dosimetry in Medicine* held in Erice, Italy, from September 16 to 25, 1979. This book is essentially a compilation of presentations by internationally recognized scientists from western Europe and North America of advances in radiation protection and dosimetry during the decade preceding this meeting. New modalities of radiation therapy are discussed along with advances in the protection of radiotherapy patients and the medical staff. The volume includes discussions of computed tomography diagnostic techniques, conventional (photon) treatment planning, and use of "new" particulate radiation forms in therapy.

The format of this publication follows that of a typical symposium or short course. This course, the third in a distinguished series, opens with remarks by Alessandro Rindi, director of the International School of Radiation Damage and Protection, Franscati, Italy. The remarks provide a historical presentation of the previous two courses in health physics and a very brief discussion of the topics to be covered. The introductory remarks are followed by the keynote address titled, "The New Particles and Their Application in Medicine," by Stanley Curtis of Lawrence Berkeley Laboratory. This paper reviews the applications of the "new" particles in clinical medicine to include depth-dose curves, treatment plans, methods of tumor localization, and other aspects of medical application primarily in the areas of radiotherapy and diagnostic radiology. This keynote address provides an excellent introduction to the papers that follow and, in addition, provides the novice reader with sufficient background so that he may grasp the main points of the succeeding presentations. The second lecture by Ralph Thomas provides additional fundamental information at a more detailed level. Thomas discusses the underlying assumptions of radiation protection and provides the reader with an excellent list of references for basic research and applied science efforts in the field of radiation protection. The introductory material is followed by articles by scientists internationally recognized in their fields of interest.

Sources of information on the adverse effects of ionizing radiation (fundamental radiobiology, animal experimentation, and epidemiological studies) are discussed by Silini, Paretzke, Rossi, Larsson, Broese, and Curtis. The limitations inherent in the data from these sources and the extrapolation of this data to humans are discussed. Areas of disagreement are also noted. Several presentations deal with dose effect relationships and estimation of radiation risk in man. Use of quality factors to predict biological response to radiation absorption is discussed along with varied opinions on the value to be employed for these calculations. These presentations by Paretzke, Rossi, and Silini provide for interesting reading as differing opinions are presented in an informed, scientific manner.

In addition to the discussions in the area of radiation protection, this volume also addresses sources of high linear energy transfer radiations (Schimmerling),[a] their application in clinical medicine (Curtis, Chen), detection and dosimetry systems for photons and "new" radiations (Perez-Mendez, Thomas, Larsson, Broese, Schimmerling). The final article by Thomas addresses a comprehensive radiation monitoring program to include environmental monitoring that is suggested for accelerator installations and completes the cycle of presentations that range from theoretical aspects of microdosimetry to macroscopic operational considerations.

This book is an extremely valuable review of recent advances in radiation protection in dosimetry. While, as the title indicates, the emphasis leans toward medical applications, this review provides material of interest to all professional health physicists. The inclusion of the emphasis on medical aspects in the title of the volume is, perhaps, misleading. The book contains a detailed index, which, when coupled with the papers and references supplied by

[a]Names of some of the lecturers in the areas discussed are enclosed in parentheses.

the lecturers in this symposium, will provide the reader with a survey of respected scientific studies in the area of radiation protection.

While on the staff of the University of Missouri Research Reactor, Dr. Schlapper was involved with the Operational Health Physics Program. He also served as a research fellow in the Nuclear Medicine Department of the Harry S Truman Veterans Administration Hospital. In January 1981, Dr. Schlapper joined the faculty of the Radiological Health Engineering Program of the Nuclear Engineering Department at Texas A&M University. He also serves on the consulting faculty of the Nuclear, Biological and Chemical Protection Branch of the U.S. Army Academy of Health Sciences. Dr. Schlapper has several publications to his credit that include articles on the development of neutron beam computed tomography.

Handling Radioactivity (A Practical Approach for Scientists and Engineers)

Author	Donald C. Stewart
Publisher	John Wiley & Sons, Inc., Somerset, New Jersey (1981)
Pages	282
Price	$39.50
Reviewer	Stephen T. Slack

The author's stated intention is to give an overall view of "the practicalities of handling radioactivity," and scattered throughout are phrases like "bench scale operations," claims that he is "not concerned with kilogram-quantities," and "many of the techniques are those of microchemistry." The actual contents, however, have a very different emphasis. In some places the book seems more like a refresher for architects and engineers engaged in designing new radioisotope facilities than an introduction for those who would use them. Indeed, even its title is something of a misnomer, since far more attention is given to the means of avoiding the handling of radionuclides, such as mechanical manipulators and transfer devices, than to the details of how to conduct operations with due respect for the radioactivity involved.

This does not mean that the book is valueless, but rather that it is apt to be purchased by people looking for something entirely different. Donald Stewart was, until his retirement, associate director of the Chemistry Division at Argonne National Laboratory. He seems here to have distilled this experience and put it in an easily accessible form. After two brief introductory chapters, he presents the focus of the book and almost half of its contents--two chapters on laboratory design. Specific consideration is given to layout, heating, ventilating and air conditioning systems, utilities, shielding, viewing and lighting, remote manipulation and materials transfer. The number of references brought together here is staggering. Chapter 4 alone lists 143 references, some with multiple publication. If budgets ever again permit construction of the sort of facility he has in mind, the designers will be well advised to have a copy of this book at hand. One would wish, however, that more attention had been paid to the problems of renovation.

The chapter on operations deals chiefly with monitoring and decontamination; some attention is paid to protective clothing. The chapter on radiation effects is short but comprehensive. Having a chapter on nuclear criticality seems to once again belie the stated purpose of the book, but it is certainly both informative and entertaining. Another chapter summarizes the various regulations concerning the transportation of radioactive material, chiefly those for high specific activity.

The final chapter on radioactive wastes is better left unread. This topic has been of prime concern to radionuclide users for several years. Regulations, attitudes, and practices have changed several times for some types of waste. The material presented is good in principle, but contains enough misinformation to get the uninformed reader into trouble--with the burial site if he tries to bury free-standing liquids, or with the Environmental Protection Agency if he tries to evaporate them.

The book contains the usual number of typographical errors and several gross errors of fact. [Perhaps the most glaring is the statement that many semiconductors can be transmuted into new elements by the (n,γ) "capture reaction" on p. 207.] It should, however, be purchased by the libraries of most institutions dealing with radionuclides, if only for its value in bringing together the references on so many facets of design and protection. It might even be considered as required reading for members of radiation safety committees and some of the administrators of institutions involved with moderate to high activity radionuclides.

Stephen T. Slack (PhD, physics, The Pennsylvania State University, 1974) did graduate work in nuclear physics, has worked in medical physics, and currently is chief of the Medical Physics and Radiation Safety Division and radiation safety officer for West Virginia University. He regularly teaches a course on radiation safety and radionuclide use.

Heat and Mass Transfer in Metallurgical Systems

Authors	D. Brian Spalding and N. H. Afgan
Publisher	Hemisphere Publishing Corporation Washington, D.C. (1981)
Pages	610
Price	$85.50
Reviewer	Ozer A. Arnas

This book is a compendium of papers presented at the 1979 Seminar of the International Centre for Heat and Mass Transfer, Dubrovnik, Yugoslavia. As in the publications of previous seminars, the papers are grouped together to give greater coherence to the various topics covered.

The groups and the number of papers in each are: