

the authors have reviewed the human understanding of radiation, starting with Becquerel, Roentgen and Curie.

In the next chapter 'Plowshares or swords', the background of the atomic bomb is explained in understandable language, leading up to the Manhattan Project which produced plutonium and uranium-235. After the three bombs were demonstrated, the surrender of Japan followed in short order. Attempts to secure true international control of atomic energy were, unfortunately, unsuccessful, and the atomic arms race continued until recent times. Meanwhile, the US Atomic Energy Act of 1946 encouraged both nuclear power plants and radionuclides including carbon-14, tritium, phosphorous-32, iodine-131 and technetium-99m, all important in biomedical research and health care, the application of which is discussed in the chapter on nuclear medicine.

In the chapter on 'Living with uncertainty', the fear which Three Mile Island and Chernobyl has implanted in many minds is analyzed, including the contamination of air and water, and the question of ultimate disposal of nuclear waste. On the plus side, the irradiation of food is gradually being accepted.

'The search for truth', which is the title of the final chapter, outlines risk perception and assessment where radiation is involved, and the difficulties in assigning standards for permissible limits of radiation to workers as well as the public which has been ongoing since 1928.

In the Epilogue, the hope is expressed that, through better understanding of both the biology and physics of the human brain, mankind will soon properly access the positive aspects of radiation as a source of good. The book is highly recommended as a first step in this direction.

HOWARD H. FAWCETT

*Chemical Protective Clothing Performance Index Book*, by Krister Forsberg and Lawrence H. Keith, Wiley, New York, NY, 1989, ISBN 0-471-51430-6, 308 pp., \$ 59.00.

Selection of the proper chemical protective clothing (CPC) by emergency response personnel and clean-up workers is of the utmost importance to worker safety at the scene of a hazardous materials release. The wide variety of suit manufacturers, suit materials and testing procedures, as well as the wide variety of products that may be encountered, all play major roles in the consideration of the correct CPC to be employed. Add to these factors the added stress of the emergency nature of the situation and you have the potential for a disaster with deadly consequences.

This book is designed to ease some of the burden on the health professional bridled with the CPC choice. The book discusses the results of testing over 200 chemical protective suits against 650 of the more commonly encountered

chemicals and their mixtures. The book provides the reader with a framework of the terms 'permeation rates' and 'breakthrough times'. Using the predescribed data base, the book goes on to develop a list of compatibility charts that will provide the user with an invaluable tool to assist in the mitigation of the incident.

This book, when used in concert with the 'GlovES+' computer program should be included in the resource library of any organization in the hazardous materials response industry.

DAN KERR

*Accidental Releases of Air Toxics: Prevention Control and Mitigation*, by D.S. Davis, G.B. DeWolf, K.A. Ferland, D.L. Harper, R.C. Keeney and J.D. Quass, Noyes Data Corp., Park Ridge, NJ, 1990, ISBN 0-8155-1210-4, 649 pp., \$ 86.

As the review was being written, the US Congress was in the process of passing a significant revision of the Clean Air Act. One of the most important aspects of their act deals with air toxics. The concern expressed by the legislators mainly revolve around chronic emissions of these chemicals. But there is another mode of release – accidental. An that is the topic of the book, which presents an overview of the methods available for identifying, evaluating, preventing, controlling and mitigating hazards in facilities that use, manufacture or store acutely toxic chemical that could be released into the air.

The book is really a combination of three manuals written for the US EPA by members of the Radian Corporation. These three manuals deal with the following topics in the control of accidental releases of air toxics:

- User's Guide
- Prevention and Protection Technologies
- Post-Release Mitigation Measures

The first section begins with a brief history of accidental releases such as Bhopal and Chernobyl (two devastating accidents that have had a tremendous effect on the chemical and nuclear industries). Next, hazardous chemicals and their key properties of interest are defined. These introductory chapters are followed by chapters on hazards in process operations, method for hazard identification and evaluation, principles of control, guide to facility inspections and costs of accidental releases and their prevention.

The second section of the book (Manual No. 2) has four major sections (following a short introductory section):

- Section 2, which covers process design consideration, addresses the basic fundamental and operational characteristics, of chemical process systems. It highlights the major hazards associated with various characteristics of systems, and discusses control measures that reduce three hazards.