

Handbook of Highly Toxic Materials Handling and Management, edited by S.S. Grossel and D.A. Crowl, Marcel Dekker, New York, NY, 1994, \$175.00, 544 pp., ISBN: 0-8847-8923-7

Since the release of methylisocyanate at Bhopal, India in 1984 with tragic consequences, the chemical industry under much public and government pressure has paid much attention to its hazardous material handling procedures. And so, too, the publishing industry with a continuing parade of texts on the topic. But a number of topics the editors thought were important were not covered in prior monographs on the subject. So Grossel and Crowl set out to fill the void via this text.

To compile the book, they enlisted the aid of ten other safety experts (a number of whom are known to me through the literature) to contribute the following twelve chapters:

- Introduction
- Industrial Toxicology
- Industrial Hygiene
- Personal Protective Equipment
- Design and Operating Considerations for Process Equipment
- Design Considerations for Piping and Instrumentation
- Storage of Toxic Materials
- Transfer of Highly Toxic Materials
- Containment and Disposal of Effluent Streams from Emergency Pressure Relief Devices
- Mitigation of Spilled Volatile Hazardous Liquids
- Equipment Maintenance
- Mechanical Integrity

Perhaps these editors have not broken any virgin ground in topics, but at least they have some different chapters than the other texts on the topic that I have reviewed and perhaps developed a new approach. I found Chapters 5 and 9 at least included new attacks on the problem. The emphasis is clearly on the chemical production and utilization process. Personally (probably because the topic was new to me), I found Trevor Kletz's discussion of equipment maintenance, the permit-to-work system and accident scenarios pertinent thereto and extremely interesting [but then again I could say that about everything he writes].

In summary, the editors have produced, in my opinion, a very useful text and one I feel will well serve process engineers. It indeed fills some voids in the literature.

GARY F. BENNETT

Scientific Basis for Nuclear Waste Management XVIII: Part 1 and Part 2, edited by T. Murakami and R.C. Ewing, Materials Research Society, Pittsburgh, PA, Vol. 353 (2 books), \$80.00, 1995, 1433 pp. total, ISBN: 0-55899-253-7

The Eighteenth International Symposium on the Scientific Basis for Nuclear Waste Management was held in Kyoto, Japan on October 23–27, 1994. Of the 180 papers

accepted for the meeting, 173 are presented in these proceedings. Major topics include:

0. General (opening session)
1. Glass
2. Reactive transport and microbes
3. Buffer materials
4. Groundwater and flow transport processes
5. Performance assessment/safety assessment
6. Spent fuel durability
7. Container materials
8. Ceramic waste forms
9. Cement
10. Radionuclide sorption in barriers and geological materials
11. Radionuclide solubility and speciation
12. Natural systems and analogue studies
13. Processing/separation
14. Site characterization
15. Radiation effects

A different perspective (from the listing in the Table of Contents shown above) in the coverage is given in the preface. “The principal topics addressed in this meeting included: (1) glass and crystalline waste forms; (2) spent nuclear fuel; (3) canister and overpack materials; (4) cement as a waste form and engineered barrier; (5) radiation effects; (6) radionuclide speciation, solubility and retardation; (7) colloids; (8) groundwater flow and transport processes; (9) performance and safety assessments; (10) site characterization; (11) processing and separation technologies; and (12) the use of natural systems to model long-term processes.

The papers, as the above two lists note, cover an immense range of topics. Theoretically, the book was edited, but with so many papers contributed by non-native English-speaking scientists, the quality of writing was not up to publishable standard in some papers. Additionally, there were lapses in the quality of standardization of various segments of the papers, i.e., references, abstract, conclusions.

GARY F. BENNETT

Handbook of Environmental Management and Technology, by G. Holmes, B.R. Singh and L. Theodore, John Wiley and Sons, New York, NY, 1994, \$74.95, 651 pp., ISBN: 0-471-58584-X

This book covers a large number of wide-ranging environmental topics, discussing their cause, effect and solution. It has 35 chapters divided into six sections.

1. Introduction to the Issues — offers an overview of the field as seen from the global perspective, dealing with topics such as the sources of pollution, the international effects of pollution and various regulatory approaches.