

this section of the book is the most interesting. Three of the papers were written by fire brigade members detailing experiences in Germany, Denmark and the United Kingdom. The last paper contained the admonition exercises in whatever form are required to test emergency plans. One other paper by Macchi, Morici and Podillucci (Exercise Study for an Emergency of Chemical Origin) has some interesting tables of distances for danger levels from various amounts of chlorine released under various meteorological conditions. Personally, I consider toxic gas releases, response to them and the calculation of evacuation distance as the most difficult of all chemical engineering (response) problems. I am delighted to see a paper on this topic, with tabulation of the evacuation distance. For example:

“The release of 240,000 km of chlorine under worst meteorological conditions yields a 4 km distance for 50% mortality; for negligible impact, the evaluation distance is almost 15 km.”

The fourth section of the Proceedings (seven papers) contains a discussion of techniques for Emergency Planning. This section could easily be retitled “Use of Computers and Expert Systems in Emergency Response”. At least three of the papers discuss concepts underlying the use of expert systems. A couple of other papers discuss computer data bases.

One of the six papers in Section 5, Lessons Learned from Emergency Management Incidents, is by E.L. Quarantelli of the United States. Dr. Quarantelli is a member of the editorial board of this Journal and is well known for his pioneering research on community preparedness and response. It is on that topic that he has written. Other papers deal with specific incidents such as a chemical plant fire, LPG leak, explosion, oil spill, pipeline rupture and gas explosion and refinery fire.

The final four papers (Section 6: Information to the Public Prior to and During an Emergency) deal with risk communication, hazard protection, public information and alarm systems.

A summary of the concluding session of the conference, a list of conference participants, and an index complete this Proceedings volume.

My overall rating of the book and its future utility is very high. I recommend its purchase by emergency planning personnel on both sides of the Atlantic.

GARY F. BENNETT

Managing Industrial Hazardous Waste: A Practical Handbook, by G.F. Lindgren, Lewis Publishers, Chelsea, MI, 1989, ISBN 0-87371-147-5, 389 pp., \$59.95.

In many previous reviews, I have written that the U.S. Congress-authored

Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1986, and the regulations promulgated by the U.S. Environmental Protection Agency to carry out the Acts' mandates are probably the most difficult to understand and the largest set of environmental regulations ever published. Even the most experienced environmental engineer is at times almost overwhelmed by the Law's complexities and magnitude. So when a book comes along that helps in the task of coping with the law, especially a book that is practical, I am interested. An this book is both. The author is to be commended for making the regulations "almost" understandable. The author, though young, brings impressive credentials to the task: project manager for an environmental consulting firm, hazardous waste facility inspector for a state, and adjunct professor at a University.

In his preface, Lindgren writes:

"The purpose of the book is to provide those responsible for waste management as manufacturing firms with (1) a framework to understand the complex web of regulatory requirements and (2) a philosophy to guide waste management decision making within the regulatory context."

In as simple as terms as possible, the author has done just that, fortified by examples of practical application of the principles of the law. The author has commissioned several chapters from other practitioners to supplement his background. Contributed chapters deal with auditing, chemical hazard communications, community-right-to-know, legal aspects and the consultant's role.

The book has 27 chapters divided into four major sections:

- (1) Basics,
- (2) Regulatory Standards and Responsibilities,
- (3) Developing the Corporate Environmental Management Program,
- (4) Selected Considerations in Implementing the Environmental Program.

Personally, I like the shorter (15-page) chapters, as they highlight the topic with major headings and divide the material into easily digested "chunks". Lindgren uses this writing technique especially for complex subjects.

In addition to covering hazardous waste topics, Lindgren deals with the tangential areas of underground storage tanks, hazard communication, community right-to-know and auditing.

There are 11 appendices and an excellent bibliography. I often criticize writers for including irrelevant material in the appendices, but not in this case. The reader will find appropriate examples of U.S. EPA forms, a list of State agencies, and waste exchange and cross-references to the U.S. Department of Transportation (DOT) hazardous classification. This is useful because one often forgets that most waste is shipped by commercial carrier and is subject to DOT shipping regulations in addition to RCRA regulations.

In summary, a most difficult topic and a most useful book on it.

GARY F. BENNETT