

Book Reviews

Hazardous Waste Incineration Engineering, by T. Bonner, B. Desai, J. Fullenkamp, T. Hughes, E. Kennedy, R. McCormick, J. Peters and D. Zanders, Monsanto Research Corporation, prepared for publication by A.P. Dillon, Noyes Data Corp., Park Ridge, NJ, 1981, \$45, 432 pp.

In preparation for promulgating and implementing the rules and regulations required by the Resource Conservation and Recovery Act (RCRA), the U.S. Environmental Protection Agency commissioned a number of studies on the state of the art of disposal options.

Monsanto Research Corporation of Dayton, Ohio, undertook one of these studies on hazardous waste incineration under U.S. EPA Contract No. 68-03-2550, submitting their report in November 1980. The foreword to the report begins: "The engineering guidelines contained in this book are a compendium of material available in the literature on the current state-of-the-art technology for hazardous waste incineration. They are intended to be used as a source of information for operational decisions and as a reference in the preparation of permit applications for hazardous waste incineration facilities."

To say the least, the authors have been thorough. Chapters are included on: (1) current practices, (2) waste characterization, (3) incineration and air pollution control system design evaluation, and (4) overall facility design operation and monitoring.

In the latter chapter there are a number of sub-chapters such as: (1) site selection, (2) waste receiving area, (3) storage, (4) blending and processing, (5) combustion process monitoring, (6) air pollution control device inspection and monitoring, (7) scrubber wastewater treatment system, (8) fugitive emissions, and (9) materials of construction.

There are three appendices almost as interesting as the main part of the book itself: (1) laboratory scale testing, (2) trial burn summaries and (3) a final added chapter on generic incineration processes, foreign technology, stack sampling and analysis and equipment costs.

GARY F. BENNETT

Sociobehaviorial Response to Chemical Hazards: Preparation for and Responses to Acute Chemical Emergencies at the Local Community Level, by E.L. Quarantelli, Disaster Research Center, Ohio State University, Columbus, Ohio, 1981, 133 pp., \$7.50.

This book is a report summarizing four years of work at Ohio State University, part of which was sponsored on the Problems-Focused Research Program of the National Science Foundation.

The scope of the book, well described by the title, is further detailed by the Table of Contents:

I. Studying the problem

- nature of acute chemical hazards: the current situation
- guiding framework for the study (model)
- research procedures and data

II. Findings: preparations for emergencies

- risk, vulnerability and threat perception
- availability and mobilization of resources
- patterns of community social organizations
- social climate
- the planning process and preparedness

III. Findings: responses to emergencies

- effects of preparedness planning on responses
- impact and situational contingencies
- first responders and initial definitions
- convergencies and outflow pattern
- similarities and differences between chemical and non-chemical disaster response
- conclusions and implications

It is a far different book to those normally read by technologists, but well worth the effort, I feel, to go through it, for the social scientist has a far different but very worthwhile perspective that we, who are so close to the technical aspects of hazardous chemicals, need to consider.

GARY F. BENNETT

Reliability and Risk Analysis: Methods and Nuclear Power Applications, by N.J. McCormick, Academic Press, London, 1981, 446 pp inc. index, £26.20

This book is designed as a teaching text and as a reference work for those professionally involved in the field of risk analysis. Exercises are included to meet the needs of the undergraduate engineer. The nineteen chapters are grouped in three parts. Part 1 deals with the basic techniques of reliability engineering, including chapters on failure data, probability concepts and distributions, reliability and availability, event and fault tree analysis and computer programs for the latter. Part 2 examines risk assessments for nuclear reactors, nuclear-materials transportation and waste disposal. Part 3 deals with risk comparisons for non-nuclear risks, risk-benefit assessments, and risk acceptance. There are ample references, the index is good and much illustrative