



## Book reviews

*Handbook of Health Hazard Control in the Chemical Process Industry*, by S. Lipton and J. Lynch, John Wiley and Sons, New York, NY, 1994, \$89.95, 1003 pp., ISBN: 0-471-55464-2

My first impression of this book was its vast size, over 1000 pages about  $8 \times 10''$  in size. It was written solely by its two authors and not edited as so many modern technology books are.

The preface notes that in recent years a substantial body of technology has been developed relating to the control of toxic hazards to human health in typical closed-unit chemical process plants. This book summarizing the technology of contaminant control is designed for use by both industrial hygienists and chemical engineers. It gives industrial hygienists and engineering professionals access to guidelines for eliminating health hazards in chemical processes while complying with OSHA and EPA regulations in hazard control.

To serve the needs of this varied audience, the book begins by covering the broad industrial hygiene subject of the anticipation, recognition, evaluation, and control of health hazards with particular reference to the chemical industry. Next, fugitive emission control regulations designed to minimize the release of criteria pollutants and air toxics are presented along with their relation to exposures and control options in chemical plants. Specific control options for most of the equipment used in chemical plants are discussed in detail, and the criteria for the most cost-effective option are presented. An exposure prediction technique aids in the selection of control options. Finally, certain special topics such as sampling, drainage, sewer emissions, and major process hazards complete presentation of the major aspects of health hazard control in the chemical process industry.

The book has 16 chapters titled:

1. Occupational Health Hazards
2. Sources of Exposure
3. Exposure Evaluation
4. Emission Regulations
5. Emissions Measurement and Estimation
6. Hazard Control
7. Valves
8. Control Valves

9. Flanges and Connections
10. Rotating Equipment
11. Sampling
12. Drains, Sewers, and Wastewater Emissions Control
13. Liquid Storage and Transfer
14. Dust Control
15. Major Process Hazards
16. Exposure Assessment

I read several sections and was surprised (and pleased) to read excellent write up on common pollution control units: oilwater separation, air flotation unit, cyclones and baghouses. That's my field of expertise and what was written was very good.

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*Nuclear Waste Cleanup Technology and Opportunities*, by R. Noyes, Noyes Data Corp., Park Ridge, NJ, 1995, \$76.00, 454 pp., ISBN: 0-8155-13881-X

Radioactive events and radiation-contaminated material generation of past activities involving the production of nuclear weapons and research into nuclear power production have left the U.S. Department of Energy with a complicated and expensive cleanup problem; one that my personal notes say could well exceed \$300 billion (US).

To be addressed at DOE sites are the following major problems:

1. Groundwater contamination
2. Plutonium-contaminated soil
3. Uranium processing residues
4. High-level waste in tanks
5. Buried transuranic waste
6. Mixed (waste containing both radioactive and hazardous chemicals) waste

Chapter 1 of this book outlines these problems, discusses DOE's organizational strategies for tackling them (i.e., Environmental Management Organization) and tells the reader how to interact with DOE in this massive cleanup project.

Chapter 2 is a short chapter that discusses (and defines) the different types of nuclear waste:

- high-level waste/spent nuclear fuel
- spent nuclear fuel
- transuranic waste
- low-level waste
- mixed waste

Sites to be cleaned up are discussed in the next two chapters. Chapter 3 treats DOE sites on a state-by-state basis. Chapter 4 discusses only federal agency sites, i.e., Department of Defense.

The discussion begins in earnest in Chapter 5, entitled "Storage and Disposal". Yucca Mountain and the Waste Isolation Pilot Plant (WIPP) come in for much attention.