

*Controlling In-Plant Airborne Contaminants*, by J D Constance, Marcel Dekker, New York, NY, 1983, 341 pages, S Fr 123 00

In the introduction to this text, Constance writes that health and safety hazards associated with certain occupations were probably recognized before the dawn of history. Hippocrates recognized lead pollution in the fourth century, and R C Ellenberg as early as 1473 wrote about the problems associated with CO, Hg and Pb. It long being recognized that certain chemicals can cause health problems, industry realizes it must provide a good in-plant environment to protect workers' health and safety by controlling dust fumes, gases, smoke and noise. To the end, Constance writes "This book was written with a special purpose in mind to provide a useful reference work for the practicing engineer in his evaluation and design of systems for the control of the industrial plant environment. (Engineers) will find the material most helpful in their introduction to the field of making the industrial plant more liveable. With this thought in mind, time-saving approaches are emphasized through the use of charts, graphs, tables and tested samples of actual workable design."

The book has 13 chapters — single chapters were written on theory, plant layout and hazard areas, moisture control, noise control, and heat control, eight chapters are devoted to air contamination and ventilation. Clearly, indoor air pollution control is the central theme of the book.

In an initial quick scan of the book, I focussed on a well-developed table of contents (3 pages), followed by even more detailed outline of the contents at the beginning of each chapter. Both are most helpful. The first chapter is an interesting (but rather simplistic for a chemical engineer or chemist) introduction to chemical calculations. It is followed by a chapter on "identifying sources of air contamination, with emphasis on the petroleum industry." Leaks from valves, etc. at refineries are of high concern in the U S because the hydrocarbons emitted lead ultimately to the formation of ozone, sources of leaks are discussed — but from the perspective of industrial hygiene rather than air pollution control.

Ventilation, both natural and forced, are covered in chapters four and five, being unfortunately separated from a logical following of the second chapter by an interesting, but possibly out-of-place here, chapter on plant layout and classification of hazardous areas.

In chapter 8, Constance treats dust control in the workplace, both from the health (OSHA standpoint) and the explosion perspective. Air collection principles, equipment and costs are all discussed. Chapter 9 discusses pressure ventilation. Air pollution control in laboratories is the topic for the 10th chapter. Fume hood design, makeup and exhaust systems, maintenance of air systems and safety features are all discussed.

Chapter 11, on moisture control in process buildings, is followed by one on noise control (which the author precedes by the words "think quiet"). On a personal note, it is delightful to find an author who, like myself, be-

heves (and treats) noise as a common air pollutant. Having been exposed to a number of guest lectures on noise control in pollution courses I teach, I have read the chapter in a little more detail than the others, and must commend the author for his completeness and conciseness. It is well done.

Heat stress too is another important industrial hygiene consideration, and the author discusses industrial heat and its control in his last chapter in his text.

There are two appendices -- one giving detailed calculation procedures for solving gas-purging problems graphically, the control of explosive or toxic air-gas mixtures, evaporation rates, etc. Appendix B will be appreciated by faculty who might use the book as a text, as it has a good compilation of problems supplementing the text material.

GARY F BENNETT

*PCBs Human and Environmental Hazards*, by F M D'itri and M A Kamrin (Eds), Butterworths, London, 443 pages, £50 00

PCBs are simultaneously one of the most useful and one of the most feared chemicals manufactured and used by man. Because of their non-biodegradability in the environment, and the suspicion that they will cause cancer, their use is extremely limited. In 1976, Senator Gaylord Nelson introduced a bill to amend the pending Toxic Substances Control Act (TSCA) to require the U.S. Environmental Protection Agency to establish labelling and disposal requirements for PCBs, and mandated an eventual ban on their manufacture and processing.

As a result of the continuing concern for the health effects and the large numbers of unanswered questions surrounding PCBs, Michigan State University in Lansing, Michigan, held an International Symposium in March 1982. This book contains 29 of the papers presented at the symposium plus a final chapter resulting from a panel discussion. The book is divided into five sections:

- 1 Scientific, social and political overview — 8 papers
- 2 PCB analysis and monitoring — 4 papers
- 3 Metabolism and toxicology — 7 papers
4. Effects on human health — 3 papers
- 5 Regulations — 7 papers

As with most symposiums discussing controversial topics, the papers definitively answer few questions, ask many, and present a great deal of information.

The key incident that focussed attention on PCBs concerned an accident in Yusho, Japan. From calculations, we know that the rice oil consumed by the people there contained approximately 2,000 mg/l of PCBs — but they were not the only toxic materials present, chlorinated naphthalene