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Book Reviews

Tailings Management: Problems and Solutions in the Mining Industry, by Gordon M. Ritcey, Elsevier, Amsterdam, 1989, ISBN 0-444-87374-0, 970 pp., Dfl 395.00 ($225)

During the past 10–15 years the mining industry has experienced many environmental problems that relate to the management of tailings discharged from mining and milling processes. Environmental concerns include pollution of surface waters, groundwater, soils, and air emissions. This book represents an excellent document to aid anyone in the mining industry to better understand environmental problems related to tailing management and to develop environmentally acceptable solutions in the field.

The author is to be congratulated on relating this important environmental subject to the specific needs of the mining industry. All aspects of the mining industry that relate to tailings management have been included in this exhaustive, all-encompassing book.

It is highly recommended anyone in industry, government, or academia who is connected with environmental management of the mining industry. This important reference book is well conceived and organized. In addition, it provides many useful references at the conclusion of each chapter.

CHARLES A. WENTZ

Introduction to Industrial Gas Cleaning, by F.A.L. Pullen, Academic Press, San Diego, CA, 1988, ISBN 0-12-223652-1, 285 pp., $55.

This is possibly the best air pollution control textbook I have seen in years, at least from the fundamental (mathematics) viewpoint. The book evolved over a 10-year period from class notes used in an Air Pollution Control course given to fourth year chemical engineering students at the University of Waterloo in Ontario, Canada.

While most air pollution control texts lean heavily on descriptive material, their design aspects are mainly empirically based. Not so, this text. Pullen presents enough descriptive material to set the stage before giving design equations based on basic fundamental principles. The text has numerous well-worked-out numerical examples and appropriately detailed formulae derived. Then, at the end of each chapter, he has included several problems to be assigned to students.

From a personal perspective, I found three areas in the text different from the material that I give students. First, I spend more time defining the air

pollution problem than Pullen does. Hence, I found the six-page introduction too short. Next, I assign problems on stack sampling for the students to solve. At the end, Pullen did treat the topic of source testing (Chapter 9), but he did not include a well-worked-out numerical example as he did in the rest of the text, nor did he give problems to be assigned to the students. Finally, the text lacks a discussion of dispersion modelling, which I believe is fundamental to the air pollution control problem/solution.

However, put this criticism aside, as the text discusses the fundamental principles well and gives an excellent mathematical approach to the design of fabric filters, cyclones, scrubbers, electrostatic precipitators and adsorption systems.

GARY F. BENNETT

Safety Cases - Within the Control of Industrial Major Accident Hazards (CIMAH) Regulations 1984, edited by F.P. Lees and M.L. Ang, Butterworth, London, 1989, ISBN 0-408-02708-8, 363 pp. £60.00 ($120).

The editors have collected a series of reviews of safety cases done by practioneers in various industries. Chapter 1 is a review of major chemical hazards and a prediction of their consequences. The author discusses the broad range of harmful effects, pointing out that more than death, physical injury and environmental damage needs to be considered. The authors of Chapter 2 review the Safety Report Regulations in the Netherlands. The Dutch regulations require a more quantitative risk assessment than most other countries. Chapter 3 reviews more recent legislation in the USA, indicating that several states are rapidly catching up to some of the European countries, as well as pointing out that some measures may be so strict that companies will not be able to afford to stay in business.

Chapter 4 does not deal with a Safety Case, but instead discusses some of the planning issues involved in locating hazardous operations and plants. The author reviews the major approval steps required in Britain, highlighting the advantages of a full and open risk assessment process. The next chapter reviews Britain's methods of assessing 'consultation distances' (zones where there might be significant risk), discussing 3 specific cases, namely; LPG installations, toxic luquified gases and high pressure gas transmission pipelines. Chapter 6 is a reprint of a paper dealing with a number of points needed for effectively managing a hazardous installation.

The next chapter reviews 4 companies' approaches to the Safety Case, while Chapters 8 and 9 review guidance notes from industrial associations – the Chlorine Users Group of the Chemical Industries Association and the Fertilizer Manufacturers Association. Chapter 10 very briefly discusses the role of quantitative assessment from a report of the Advisory Committee on Major