2. Air Pollution Management Issues — a broad but not comprehensive approach to air pollution and its control. Discussed are acid rain (this section should have been entitled acid deposition), the greenhouse effect, indoor air quality, dispersion modelling (very light on the mathematics) and a description of air pollution control equipment.

3. Water Pollution Management Issues — discussed are water pollution modelling and control followed by municipal and industrial wastewater treatment, but there is no good discussion of water pollution in general and its impact on the environment.

4. Solid and Hazardous Waste Management Issues — this section has nine separate chapters discussing general solid waste management issues, including municipal, medical and hazardous waste control. Chapters are devoted to a number of individual hazardous pollutants, including asbestos, oils and metals. Also discussed are household hazardous waste, underground storage tanks and Superfund.

5. Additional Environmental Concerns — covers a potpourri of topics that include noise pollution, energy conservation and pollution prevention.

6. Environmental Management Considerations — devoted to daily environmental management issues such as worker training and safety crisis management, the monitoring of background contamination levels and risk assessment and communication.

The book jacket says this book is written for those with little or no experience in pollution prevention and control and for that purpose, it is not badly written although I feel it lacks continuity and depth in several topics (air and water, as noted above). Also, I found an absence of diagrams for pollution control equipment a major detriment. It is just difficult to imagine a cyclone or a bag house without a picture. Also, a flow diagram of a wastewater treatment plant is totally absent. A final criticism — totally inadequate references from zero references for the Superfund chapter and only five for hazardous waste incineration (and three of these references were one of the author's own books and the other two were U.S. EPA reports, which I often find difficult to obtain).

GARY F. BENNETT

Application of HAZOP and What-If Safety Reviews to the Petroleum, Petrochemical and Chemical Industries, by D.P. Nolan, Noyes Data Corp., Park Ridge, NJ, 1994, $45.00, 128°pp., ISBN: 0-815S-1353-4

"This publication is intended to provide guidance to HAZOP (Hazard and Operability) and What-If review teams associated with the petroleum and chemical industries. It describes the nature, responsibilities, methods and documentation required in the performance of such reviews. This ensures the reviews are conducted in a timely, effective and professional manner as may be prescribed by a company's Process Safety Management (PSM) Policy."

"HAZOP and What-If reviews are two of the most common petrochemical industry qualitative methods used to conduct process hazard analyses. Up to 80% of a company's process hazard analyses may consist of HAZOP and What-If reviews with the remainder 20% from checklist, Fault Tree analysis, Event Tree, Failure Mode and Effects Analysis,

etc. An experienced review team can use the analysis to generate possible deviations from design, construction, modification, and operating intent that define potential consequences. these consequences can then be prevented of mitigated by the application of the appropriate safeguards.''

The relevant chapters describing the establishment and performance of these vital tasks are as follows:

- Team Members, Qualifications and Responsibilities
- Management Support and Responsibilities
- Review Applications
- HAZOP and What-If Review Procedures
- HAZOP and What-If Worksheets
- Report Preparation and Distribution
- Handling and Resolution of Recommendations
- Schedule and Cost Estimates

The book ends with five very useful appendices:

- Typical Company Safety Policy Statement
- Quality Assurance Audit Checklist
- Probability, Severity, Risk and Risk Acceptance Tables
- What-If/Checklist Questions
- HAZOP Parameters, Deviations, and Possible Causes
- PC LCD Projection Panes

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Volatile Organic Compounds in the Atmosphere R.E. Hester and R.M. Harrison, eds., Issues in Environmental Science and Technology 4, The Royal Society of Chemistry, Cambridge, UK, 1994, L 15.00 (U.S. $27.00), 40 pp. ISBN 0-85404-215-6

This most excellent review of the topic of Volatile Organic Compounds (VOCs) was published as part of The Royal Society of Chemistry's biannual volume on Issues in Environmental Science and Technology. Prior volumes have dealt with:

mining and its environmental
impact waste incineration and the environment
waste treatment and disposal.

This volume, the fourth in the series, contains eight papers dealing with many aspects of VOCs – from their production in nature to their emission from building materials in modern homes. In this book, the contributors explored many of the scientific aspects relating to VOCs in the atmosphere under the following chapter titles:

1. Sources, Distributions, and Fates of VOCs in the Atmosphere
2. Atmospheric VOCs From Natural Sources
3. The UK Hydrocarbon Monitoring Network
4. Source Inventories and Control Strategies for VOCs
5. Gas Phase Tropospheric Chemistry of Organic Compounds