

The implications of the theory and framework for the management of safety developed in Parts 1 and 2 is explored in Part 3. This deals with the two fundamental objectives identified earlier:

- Control of safety by the design of safe and healthy organizations and safe systems of work; and
- the control of safety through the ongoing effective management of work and safety

In Chapter 4 the first objective is described as non-adaptive control, and the second as adaptive control. All four chapters in Part 3 contain discussion on both. The chapters are:

9. Safety: management responsibilities and practices
10. Safety management: strategies
11. Managing the work environment: the design of safe work
12. Managing people and their attitudes to safety

The interdependence of these four areas is underlined.

I found the book interesting to read. It brings together in one volume much of what is now considered to constitute a quality approach to management which embraces safety. The arguments are supported by many citations to relevant research and related works—typically 50 or so per chapter. Each chapter is well referenced to other parts of the text and concludes with a succinct and useful summary. The cross referencing means that the reader can dip into the “story” at any part and quickly pick up the thrust of the approach. I only spotted a couple of mistakes in these forward and backward references.

The authors claim that the book is presented in a style and at a level appropriate for informed line managers, health and safety professionals, and final year and Masters level students. I agree.

The book contains some useful practical pointers, but there is some digging to do. This is not a chore as the book flows along nicely.

C. Nussey

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Major Hazards Monograph: Sulphur Trioxide, Oleum and Sulphuric Acid Mist. Richard Griffiths (ed.), Institution of Chemical Engineers, Rugby, UK, 1996/A5 softback, £25.00, 70 pp. ISBN: 0 85295 373 9.

Recently there have been two significant releases of sulphur trioxide/oleum in the UK. Last summer a release from a pressurised tank led to what was described as a large white cloud. The release occurred near a major road and motorway. Motorists and local residents were advised over the radio networks to close windows and shut off ventilation systems. No one was seriously injured but a number of people were taken to hospital.

This monograph, prepared by a Working Party of the UK's Major Hazards Assessment Panel, deals with:

- properties, manufacture, uses and handling of sulphur trioxide and oleum;
- health effects of sulphuric acid aerosols (there are no data for sulphur trioxide; it reacts rapidly with water to form sulphuric acid); and
- formation and dispersion of sulphuric acid mist following loss-of-containment accidents (the complex behaviour exhibited by sulphur trioxide and oleum when released into humid atmospheres and on to 'wet' ground is well described).

Detailed information is given in five appendices dealing with toxicity (humans and animals), brief details of some incidents, and the approach adopted by the Health and Safety Executive for modelling the spill behaviour and the subsequent formation and dispersion of clouds and plumes of sulphuric acid mist. The latter descriptions are sufficiently comprehensive to provide useful insights into how the methods could be codified into computer programs. Weaknesses in the methodology are constructively criticised. The Working Party concludes that "there is a need for reappraisal of the modelling procedures used with the objective of developing more realistic treatments of the source characteristics in relation to the subsequent dispersion behaviour."

The Working Party is to be congratulated for producing a very well written and useful summary of currently available hazard assessment information on sulphur trioxide, oleum and sulphuric acid mist.

C. Nussey

Waste Minimization and Cost Reduction for the Process Industries, P.N. Cheremisinoff, Noyes Data Corporation, Park Ridge, NJ, USA, 1995, \$64.00, 331pp. ISBN: 0-8155-1388-7

The purpose of this book, according to the author, is to provide a base of information and analysis to assist in implementation of the policy of reducing and/or minimizing hazardous waste generation in manufacturing and more specifically in the process industries. The book is an outgrowth of the author's assignment by the United Nations Economic and Social Commission for Asia and the Pacific on waste auditing and reduction.

The book has the following eight chapters:

- Waste reduction
- Auditing
- Waste minimization data/information requirements – A general approach for manufacturing
- Estimating releases to the environment
- Waste questionnaires – Water control checklist
- Analysis of process chemistry example processes
- Industry profile – fertilizers
- Treatment of effluent fertilizer industry example