

certainly (I believe) from the author's course notes from an environmental class. The book would be an excellent text for such a course, though I would supplement it with exercises to make it more useful.

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Emergency Planning for Industrial Hazards, by H.B.F. Gow and R.W. Kay (Eds.), Elsevier Applied Science, London, UK, 1989, ISBN 1-85166-260-X, 387 pp., £60,00.

This book contains 36 papers presented at the European Conference on Emergency Planning for Industrial Hazards. Organized by the Commission of the European Communities, this conference was held in Varese, Italy, in November 1987.

This reviewer is deeply involved in Emergency Planning in the United States and is acutely aware of the requirements (and problems) resulting from EP-CRA passed by Congress in 1986 (Emergency Planning and Community Right-to-Know Act) but blissfully ignorant of what is happening in Europe. This book rectified that situation.

The conference was really a response to the European Communities' Directive on Major Accident Hazards of certain industrial activities. The directive requires that on-site and off-site emergency arrangements should be made for certain potentially hazardous industrial activities. The directive, however, did not specify the way in which these objectives are to be achieved, and one aim of the conference was to discuss the approach adopted by the various national authorities and other organizations to satisfy the requirements of the Directive.

The conference (and the resulting proceedings) was arranged in six main sessions dealing with organizational aspects, design of plants, exercises and auditing, appropriate techniques, lessons learned from past incidents and provision of information for the public.

The first two major sections of the text are: (1) Organisations Implementing Emergency Planning and (2) On-site and Off-site Emergency Planning Design. The four papers in the first session and the eight in the second gave an excellent overview of the planning activities of the various member countries of the European Community. The paper by Genesco of France entitled "Emergency and Intervention Plans: The French Experience" is a perfect example of the type of papers in this section. Other papers discussed planning activities in Germany, the Netherlands, the United Kingdom and Italy. Several papers take a more restrictive role and discuss emergency plans at single-site, major complexes of chemical plants or even single plants.

The third major section of the Proceedings deals with Exercising and Auditing Emergency Plans. Six excellent papers are included here, and for me

this section of the book is the most interesting. Three of the papers were written by fire brigade members detailing experiences in Germany, Denmark and the United Kingdom. The last paper contained the admonition exercises in whatever form are required to test emergency plans. One other paper by Macchi, Morici and Podillucci (Exercise Study for an Emergency of Chemical Origin) has some interesting tables of distances for danger levels from various amounts of chlorine released under various meteorological conditions. Personally, I consider toxic gas releases, response to them and the calculation of evacuation distance as the most difficult of all chemical engineering (response) problems. I am delighted to see a paper on this topic, with tabulation of the evacuation distance. For example:

“The release of 240,000 km of chlorine under worst meteorological conditions yields a 4 km distance for 50% mortality; for negligible impact, the evaluation distance is almost 15 km.”

The fourth section of the Proceedings (seven papers) contains a discussion of techniques for Emergency Planning. This section could easily be retitled “Use of Computers and Expert Systems in Emergency Response”. At least three of the papers discuss concepts underlying the use of expert systems. A couple of other papers discuss computer data bases.

One of the six papers in Section 5, Lessons Learned from Emergency Management Incidents, is by E.L. Quarantelli of the United States. Dr. Quarantelli is a member of the editorial board of this Journal and is well known for his pioneering research on community preparedness and response. It is on that topic that he has written. Other papers deal with specific incidents such as a chemical plant fire, LPG leak, explosion, oil spill, pipeline rupture and gas explosion and refinery fire.

The final four papers (Section 6: Information to the Public Prior to and During an Emergency) deal with risk communication, hazard protection, public information and alarm systems.

A summary of the concluding session of the conference, a list of conference participants, and an index complete this Proceedings volume.

My overall rating of the book and its future utility is very high. I recommend its purchase by emergency planning personnel on both sides of the Atlantic.

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Managing Industrial Hazardous Waste: A Practical Handbook, by G.F. Lindgren, Lewis Publishers, Chelsea, MI, 1989, ISBN 0-87371-147-5, 389 pp., \$59.95.

In many previous reviews, I have written that the U.S. Congress-authored