material has been included. Parts 1 and 2 are very well written, and provide a rigorous and well co-ordinated treatment which will be very useful to the intended readership. Part 3 (about 55 pages) is not as up to date or as rigorous as one would expect from the quality of the rest of the book; for example, the treatment does not take account of recent criticisms concerning the validity of various risk comparisons. However, this is redeemed by Parts 1 and 2, which are well worth the purchase price for those wishing to read a good account of the treatment of the reliability engineering side of risk analysis.

R .F. GRIFFITHS

Risk Analysis of Six Potentially Hazardous Industrial Objects in the Rijnmond Area, a Pilot Study, D. Reidel Publishing Co., Dordrecht, ISBN 90-277-1393-6, 793 pp inc. index, cloth U.S.$ 110.00.

This is a report of a "Canvey Island" style risk analysis carried out by Cremer and Warner, covering installations in the Rijnmond area. Previous risk studies such as the Rasmussen Report on US light water reactors and the 1978 Canvey Island study generated subsequent independent reports criticising the work. Here the Rijnmond Public Authority have included critiques from other consultants (Battelle and Science Applications Incorporated) as well as the comments of representatives from industry and of the commision that was appointed as the steering committee. The study cost 2½ million Dutch guilders (about the same as the Canvey Report of 1978), and took 2½ years to complete. The report of the steering committee, which comprises part 1 of the book, is dated March 1981. Part 2 is the main report by Cremer and Warner (August 1979), Part 3 a supplementary report (March 1980) from Cremer and Warner, Part 4 the review by Batelle (January 1980), Part 5 the comments by various industrial representatives and members of the steering committee. SAI's comments are given in an appendix; a 1979 conference paper on the behaviour of ammonia in the event of spillage authored by J.M. Blanken of UKF is reproduced as an appendix.

The whole report makes stimulating reading in that the material is reproduced, as it were, "in the raw". There are the unrestrained signs of exasperation from the industrial commentators : "Whether it is cost effective to spend enormous amounts of money in calculating useless data is not for us to judge", and "Batelle's explosion model is yet another of an endless series of models for unconfined vapour cloud explosions". Cremer and Warner, as the principal consultants, are the targets for criticism from all sides. There is much discussion on the assumptions and uncertainties, including the importance of establishing adequate models for such items as initial air entrainment and rain-out fraction for releases from pressurised containment, and the toxic response to irritant gases. UKF claims that it has been demonstrated by animal tests that the acute toxicity of ammonia is less severe than represented by the model used, but offers no results or references on this work. Perhaps the most disheartening

aspect for this reviewer was the lack of agreement on the crucial question of the density of ammonia—air mixtures. Cremer and Warner have clearly taken on board the work on this subject in the 1978 Canvey Report, but UKF's position, as stated in Part 5 and Blanken's Appendix, is grossly optimistic in the light of the Canvey Study work on this subject. Blanken's paper (dated 1979) makes no reference at all to the 1978 Canvey Study.

With so much money and time spent one would have hoped that there would have been the opportunity for better communication and agreement on such technical matters. For all this, the report is an important publication in a contentious area, and those involved in risk analysis will want to read it; they will certainly enjoy doing so.

R.F. GRIFFITHS

Respiratory Protection, edited by B. Ballantyne and P.H. Schwabe, Chapman and Hall Ltd., London, 1981, 376 pp. inc. index, £20; *Detection and Measurement of Hazardous Gases*, edited by C.F. Cullis and J.G. Firth, Heinemann Educational Books Ltd., London, 1981, 226 pp. inc. index, £25; *Hazards in the Chemical Laboratory*, edited by L. Bretherick, Royal Society of Chemistry, London, 1981, 567 pp. inc. index, £15.

These three edited collections will be of particular interest and use to those concerned with various aspects of safety and protection in the laboratory and in the workplace. Bretherick has undertaken the updating of the 2nd edition published in 1976 which was edited by Muir. The current edition amply justifies the need for such a revision, and the book is excellent value. The nine chapters by various authors give an authoritative supplement to the listing of hazardous chemicals data, which makes this book that much more useful than those that simply give the data. This should be a standard reference for all concerned with laboratory safety.

Cullis and Firth bring together a worthy collection on hazardous gases, concentrating on techniques of measurement and monitoring. The chapters are well referenced and illustrated. The authors are drawn from industry, government bodies and universities, and present well founded chapters on measurement of flammable gases and vapours, oxygen deficiency, monitoring toxic gases in the workplace, personal monitoring, statistical aspects and air sampling strategies, standard atmospheres, and history and law. The book provides a good background for those with an operational concern in this field.

Ballantyne and Schwabe present 6 chapters on basic principles, including sources, physiological responses, behaviour of particles in the lung, toxic effects, and occupational health aspects. This is followed by 8 chapters on the design and manufacture of various protection devices, and 6 chapters on specific applications such as in coal mining, the asbestos industry, the nuclear industry, fire protection and disease protection. Again, the collection is