Part II is unique since it stresses the health hazards (including chemicals exposure) to construction workers, and the necessity for control through medical surveillance and monitoring. Volatile organic solvents, as well as water-soluble inorganic compounds are noted, as well as the need for proper respiratory protection (not just a crude mask) when working with or around areas where asbestos, paint, and other agents are used. Eye protection, an often neglected "on-the-job" requirement, is stressed.

Physical health hazards, including noise, and its effect on hearing, mechanical vibration, and electromagnetic radiation, UV radiation, lighting levels for efficient construction, and electricity (which manifests itself not only in human shock but in the ignition source for flammable materials), as well as a serious hazard for welders are discussed with references. Other health hazards include biological hazards, including poisonous plants. Poisonous animals, such as certain snakes, are included in this list. The weather, both from the temperature and relative humidity, and the need for protective clothing, is noted. Working in cramped and unusual positions produces various injuries which may be, at times, disabling, such as slipped discs. Purity of drinking water and other foods both on and off the job should be considered. Mental stress, including strain and unhappiness, also can contribute to inability to work safely. Hazard monitoring including instrumentation necessary to effectively conduct it, is reviewed, again with references.

Part III discusses Fire, Explosions and Allied Hazards. The careless use of LPG (liquefied petroleum gases), use of fire to burn off paint on older buildings, other hazards such as the proper use and storage of explosives when used in demolition, high-visibility clothing, proper use of ladders, and a general assessment of the supervision of the project conclude the volume.

Regardless of the country or the specific laws, this volume contains the real fundamentals which will inspire better safety, which has both economic as well as human importance. It is clearly written, and will inspire construction workers to a better, more profitable, and longer life.

HOWARD H. FAWCETT

Emergency Relief System Design Using DIERS Technology, by H.G. Fisher, H.S. Forrest, S.S. Grossel, J.E. Huff, A.R. Muller, J.A. Noronha, D.A. Shaw and B.J. Tilley, Published by AIChE, 345 East 47th Street, New York, NY, 10017, 1992, ISBN 0-8189-0568-1, 538 pages, $130 (AIChE members), $165 (non-members).

The Design Institute of Emergency Relief Systems, DIERS, has been one of the more successful U.S. research efforts funded by an industry-wide consortium. Costing approximately $1.6 million since its inception in 1976, the program has spun off a fairly large body of technical literature concerning modeling of two-phase discharge and vessel "swell" upon rapid depressurization.

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In fact, one of the prime merits of this volume is that it provides focus, amid a multitude of individual references, on just what constitutes the DIERS technology. It is written by key member of the DIERS coordinating committee, and gives a number of example problem solutions, thereby strongly providing a handbook flavor. This handbook style is enhanced by clear explanations in "how-to-do-it" style for processing of experimental results from laboratory-scale calorimetry. It is also a reference book since a substantial fraction of the pages detail experimental results from large-scale depressurization experiments.

It is not, however, a tutorial exposition, for derivations are not provided for the stated equations. The authors provide an extensive bibliography, and lean heavily on references for theory development. The book would be stronger if its brief theoretical development followed the more general treatment made in the referenced bibliography. For example, the equation used to find the critical pressure ratio for the homogeneous equilibrium model (HEM) is buried late in the book, and is not used in the early example calculations.

To its credit, the book is well focused. The authors avoid the temptation to treat reactor runaway theory while they discuss calorimetry. Unfortunately, they focus somewhat too narrowly on top-vented vessels in describing vapor–liquid disengagement. The derivation of a "coupling equation" is a bit obscure. There is an unfortunate mix of SI and English units used throughout, although in some sections, examples are given in both sets of units.

Altogether, this is a most welcome compendium, well written, in a useful form.

JOHN L. WOODWARD

Encyclopedia of Environmental Control Technology, Vol. 5: Waste Minimization and Recycling and *Vol. 6: Pollution Reduction and Contaminant Control*, by P.N. Cheremisinoff (Ed.), Gulf Publishing Company, Houston, TX, 1353 pages, 1992, $155 (per volume)

According to the Editor, the main topic of the *Encyclopedia of Environmental Control Technology* is to "focus on in-depth coverage of the environmental and industrial pollution control areas. The volumes are intended to provide up-to-date information on technology, research, and future trends in this vast interdisciplinary field."

Volume 5: Waste Minimization and Recycling

Twenty-five main authors from different fields of expertise contributed to this volume. Most of the chapters appear to be various technical papers.

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