The book is built around, as noted, the reports of 12 accidents which, upon analyses, yielded the foregoing conclusions. Data given for each accident include: year of occurrence; type of accident; type of activity; system involved; mode of operation; substances involved; consequences; description; cause; in almost 70% of the accidents in which the causes are known.

The book is a very welcome addition to the chemical accident/emergency response literature, for as more is learned about the root cause of accidents, better prevention/response systems will evolve. *Major Accident Reporting Systems* should be required reading for industrial safety managers as well as operating managers.

My only criticism of the book is that there is no index. That is not a major problem, but one would have been useful. There are, however, internal (in the texts) summary and classifying data by accident type, and chemical involved.

GARY F. BENNETT

Storm Water Management Technology, US Environmental Protection Agency, Noyes Data Corp., Park Ridge, NJ, 1993, 375 pages, price US$ 48.00, ISBN 0-8155-1327-5

Issued first by the US Environmental Protection Agency in September, 1992, under the title *Storm Water Management for Industrial Activities — Developing Pollution Prevention Plans and Best Management Practices*, the book provides industries with comprehensive guidance on the development of storm water pollution prevention plans and of identification of 'best management practices' (BMPs) (as advertised in the EPA report title). It also provides technical assistance and support to all facilities subject to pollution prevention requirements established under National Pollutant Discharge System (NPDES) permits for storm water point source discharge.

Written as a user's guide, step-by-step directions and worksheets guide the user through the process of developing and implementing a storm water pollution prevention plan.

The book has four chapters and eight appendices. By title, the chapters are:

1. Introduction
2. Storm water pollution prevention plan
3. Activity-specific source control BMPs
4. Site-specific industrial storm water BMPs

GARY F. BENNETT

Toluene Toxicity — Case Studies on Environmental Medicine, No. 21, Agency for Toxic Substances and Disease Registry, US Department of Health and Human Services, Division of Health Education, E33, 1600 Clifton Rd. NE, Atlanta, GA 30333, 1993, 18 pages, no charge.

Although toluene (also known as toluol or methyl benzene) is one of the most common chemicals, its use is increasing partially because of its popularity as a solvent replacement for benzene. Gasoline contains 5–7% toluene by weight, making toluene a common airborne contaminant in industrialized countries. Although many organic

solvents have great addictive potential, toluene is the most commonly abused hydrocarbon solvent, primarily through 'glue sniffing'.

The publication follows the regular routine of previously studied subjects, starting with an objective statement, and proceeds into a case study in which a 28-year-old pregnant female comes to a medical doctor office with complaints of coughing spasms, chest tightness, and a sensation of being unable to breathe. The symptoms began about 6 h earlier, while she was repainting a disassembled bicycle with an acrylic lacquer spray paint in a small, poorly ventilated basement area, taking about 2 h to complete. Two years previously she was exposed to fumes of toluene diisocyanate (TDI) from an accidental spill during employment at an industrial research laboratory. She was hospitalized for several days but fortunately recovered.

A pretest, followed by exposure pathways, outlines the usually accepted knowledge that the solvent is both volatile and flammable. The odor threshold for toluene in air is about 160 parts per billion (ppb) which is about 500 times lower than the level permitted in the workplace. In water, it can be tasted and smelled at a level of 40 ppb. Because toluene is lipid-soluble, it has a moderate tendency to bioaccumulate in the food chain. In gasoline it is released to the atmosphere during the production, transport, and combustion of gasoline.

Common household products and cigarette smoke are the principal sources of toluene indoors. Indoor air is often several times higher in toluene concentration than outside air. Cigarette smokers absorb about 80–100 μg of toluene per cigarette. Toluene is used as a solvent in cosmetic nail polishes at concentrations up to 50%. Intentional inhalation of toluene makes it one of the most abused hydrocarbon solvents. Glues, paints, and solvent mixtures are the most frequent products involved.

The section 'Who's at Risk', in addition to occupations which use the material, notes the very real attraction of 10- to 15-year boys who concurrently use or later develop an alcohol, marijuana, or opiate problem.

Under Biologic Fate, we learn that inhalation is the primary route of toluene exposure, but significant amounts can be absorbed through ingestion and dermal contact. Peak blood concentrations occur 15–30 min after inhalation.

Under physiologic effects we note that the principal effect of toluene exposure is central nervous system depression. Toluene is a respiratory-tract irritant and respiratory depression leading to death can result. Toluene appears to lower the threshold of myocardian susceptibility to the dysrhythmic effects of catecholamines. Sudden death among volatile-solvent abusers has often been preceded by strenuous physical activity.

Physical examinations, and signs and symptoms of acute exposure as well as chronic exposure, and laboratory tests are included.

Standards and regulations for toluene in the workplace air, as well as in the air and water of the environment, are summarized. A posttest on the material discussed in the booklet, with answers, is very useful. Suggested reading list and sources of information conclude the work.

In general, the material is well arranged and easy to reference, even if the reader is not a medical toxicologist. It doubtlessly will be cited as an important reference.

HOWARD H. FAWCETT