- High Temperature Fluid Wall Destruction – Advanced Electric Reactor
- Infrared Destruction
- Plasma Arc Pyrolysis
- Molten Salt Destruction
- Supercritical Water Oxidation
- *In situ* Vitrification

Non-thermal Technologies

- Chemical Dechlorination
- UV Photolysis
- Solvent Extraction
- Biological Treatment
- Stabilization Fixation
- Chemical Degradation Using Ruthenium Tetroxide
- Chemical Degradation Using Chloro-iodides
- Gamma Ray Radiolysis

For each of the technologies, the authors provide the following data:

- Process Description
- Performance Evaluation
- Costs of Treatment
- Process Status

A final chapter is devoted to the factors affecting technology selection, both technical and cost.

The U.S. EPA has indicated that incineration is the only sufficiently demonstrated technology for dioxin wastes in that it can attain 99.9999% destruction and removal efficiency of the principal organic hazardous constituents. Of the non-thermal technologies, those that show the most promise and have undergone the highest level of recent investigation and testing are chemical dechlorination and UV photolysis. Both of these technologies are currently being field-tested on dioxin-contaminated soil.

GARY F. BENNETT

What Went Wrong? – Case Histories of Process Plant Disasters, 2nd ed., by T.A. Kletz, Gulf Publishing, Houston, TX, 1988, ISBN 0-87201-919-5, 238 pp., US $45.00.

The author, with over 40 years experience in the process industries, has collected many unfortunate incidents of past years, into a very readable book that will "help to keep the memories alive". This is important because many incidents are repeated after people forget, or move to a new position, or whatever. It is a must reading for every new engineer entering the process industries and should not only be on the shelf of all personnel connected with operations, but

also be periodically reviewed in order to jog one's memory of *what can go wrong*. It is also an excellent reference for teachers of safety-related courses in college's and universities.

The author has organized the specific incidents into logical chapter headings, but in addition has cross-referenced where appropriate. His suggested remedies start the thought process of "what if this happens" and can be easily adapted to one's own plant. The book will serve as an excellent starting point to develop individual *Standard Operating Procedures* for a given situation – for example, a maintenance foreman might use the examples that apply to his plant as a set of Do's and Dont's for his crews. This could be periodically reviewed by everyone, in order to prevent forgetting the small details involved.

The chapter on common hazards and accidents in computer controlled plants is a good beginning. Undoubtedly, in time more horror stories will be added that can be traced to programming errors or data entry errors, but the author's suggestion that the programmer be a member of the HAZOP team is a good one. It is even more important that someone at the plant level understand what the system is intended to control or not control, and when changes are made in the computer program and by whom.

I found the book most enjoyable reading, even his comparison of the various terms used in the U.S. and U.K. No engineer or manager concerned with safely operating, maintaining or designing process plants should be without this book.

LESLIE E. LAHTI

Corrosive Containing Waste Treatment Technologies, by L. Wilk, S. Palmer and M. Breton, Noyes Data Corp, Park Ridge, NJ, 1988, ISBN 0-8155-1180-9, 426 pp., US $52.00.

The RCRA amendments passed by the US Congress have spawned numerous bans against land disposal of many wastes including acidic corrosive wastes with pH less than or equal to 2.0, among them. These wastes were banned from land disposal (excluding underground injection) effective July 8, 1987. Alkaline wastes with a pH greater than 12.5 will be banned for disposal effective May 8, 1990.

As is their practice, the US Environmental Protection Agency has issued a technical resource document (which was photocopied and reproduced as this book) to assist industries with their compliance task. Not much new material is given. Indeed, those dealing with the treatment of acidic industrial wastewaters would be familiar with most, if not all, the techniques discussed in the text. However, the authors have gathered in one place much information on equipment, chemicals and costs.

In addition to neutralizing techniques, the authors have reviewed and re-