

- There were 12 pages devoted to conversion factors, handy to have, but so well known, they were not needed.
- There was no discussion of stack emission tests or destruction efficiency determination, nor were the Part B application requirements of RCRA discussed.
- POHC (principal organ hazardous components) was defined, but the U.S. Environmental Agency hierarchy of POHCs based on their difficulty of combustion was not.
- As in his previous book, Brunner discussed control technology, but neither the efficiency thereof nor the emissions therefrom, were based on real-life tests of incineration systems.
- There was no discussion of the significance of temperature or residence time in the combustion process, and the concomitant per cent distribution.

There is an excellent series of chapters on pollution control as there was in Brunner's prior book but I rather would he had expanded on the topic and had more information (data) on incinerators, especially pictures and diagrams of operating systems, emission, controls and especially the efficiency of combustion. Inclusion of real-world data, pictures, diagrams, etc., of existing systems would have been most useful and markedly strengthened the book.

GARY F. BENNETT

Disposal or Hazardous Wastes in Industrial Boilers and Furnaces, by C. Castaldi et al., Noyes Publications, Park Ridge, NJ, 1986, ISBN 0-8155-1067-5, 429 pages, \$48.00.

The publishers have combined two very good reports prepared for the U.S. Environmental Protection Agency:

1. A Technical Overview of the Concept of Disposing of Hazardous Waste in Industrial Boilers (1984).
2. Evaluation of the Feasibility of Incinerating Hazardous Waste in High Temperature Industrial Processes (1983).

In the first report, the goal of the authors was to:

- Survey hazardous waste generated.
- Assemble an inventory of industrial boiler capacity capable of hazardous waste combustion.
- Characterize the combustion characteristics of typical boilers.
- Characterize the hazardous wastes suitable for combustion.
- Identify the matrix of wastes/boiler type suitable for hazardous waste combustion.
- Provide an overview of considerations for further evaluating the waste/boiler destruction option.

In the second of the two reports, the authors evaluated several high-temperature processes for the incineration of hazardous wastes: metallurgical furnaces, brick and lime kilns, glass furnaces and sewage sludge combustion. Each process was evaluated in the context of the time/temperature profile, geographical location, product quality considerations, institutional factors and environmental impacts. Promising alternatives were identified.

GARY F. BENNETT

Techniques for Industrial Pollution Prevention — A Compendium for Hazardous and Non-Hazardous Waste Municipalities, by M.R. Overcash, Lewis Publishers, Chelsea, MI 48118, U.S.A., 1986, ISBN 0-87371-071-1, 203 pages, \$34.95.

The book is a compendium of successful waste elimination schemes utilized in France. Most of the processes deal with wastewater (although a few treat air streams) — most recover valuable by-products from those streams, avoiding both cost of treatment of the liquid and disposal of residue.

Industries discussed (with specific examples, flow sheets and cost given) are:

1. Agriculture and Food
2. Construction Materials
3. Chemical Manufacturing
4. Metallurgy
5. Surface Treatment
6. Textiles
7. Tanneries
8. Wood Products

The changes discussed include: removing of by-products (by use of one or more of the following unit operations of chemical engineering: extraction, centrifugation, crystallization, evaporation, absorption, scrubbers, electrolysis, ultrafiltration, filtration, water recycle, dry processing, stream recovery, stream segregation, process substitution, process modification, regeneration and bath recycle.

In the first chapter, Overcash has written: "Waste elimination is much more a thought process or problem-solving sequence which attempts to go further back into the source of waste and to employ engineering principles which reduce hazardous waste or recover useful materials from such waste." The French report contains 73 good examples of those procedures.

This is an excellent book that should stimulate ideas well beyond the bound of the examples found. I highly recommend it.

GARY F. BENNETT