

Summary of Session 6

Characterization and Properties

of Industrial Wastes

by

Henry Johnson, session chairman
General Motors Technical Center

The session on characterization and properties of industrial wastes consisted of three formal presentations and a question and answer period between attendee's and the speakers panel. In the formal presentation, industrial wastes were described in somewhat general terms based upon research done on such wastes (R. Ottinger of TRW), actual experience with chemical wastes (G. Johnson of MMM), the collection and handling of a multitude of industrial wastes (B. Hendrickson of BFI) and future solicitor and recipient of such wastes (J.Trapp of Cincinnati Metropolitan Sewer District).

Research on industrial waste to date indicate that in general the same characteristics which are important when dealing with municipal wastes also prevail for industrial wastes. These characteristics include actual physical form, temperature required for combustion, off-gases produced, ash generated and heat value. A problem with dealing with industrial waste was exemplified by a solid which, under elevated temperature, became a tarry "mess" and totally fouled a fluidized bed incinerator unit. In addition to environmental emission control and equipment deterioration, such unpredictable occurrences as the formation of the tar was indicated as a real problem in dealing with industrial wastes.

The presentation on energy recovery from chemical waste indicated that sizable energy and financial savings could be realized if the problem of corrosion and fouling of boiler tubes could be solved. The question of equipment deterioration was also of particular concern to John Trapp in his presentation on a municipalities use of industrial waste for energy recovery. In addition to the equipment deterioration problem, Bruce Hendrickson of BFI pointed out the problem of profitability required by a private firm such as BFI as opposed to break-even costs necessary for public facilities to operate.

The question of economics vs. technology was addressed again during the discussion session but no definitive resolution could be reached because the two principles are somewhat inseparable. This is to say that new technology which would preclude corrosion problems could be so expensive that its use would be prohibitive thus not really solving the problem.

Those areas of research needs specifically delineated during the presentations and discussion were as follows:

- 1) Evaluation of stoker spreader boilers including corrosion, fouling of tubes, and environmental emissions.
- 2) Shredding of industrial wastes should be evaluated since it is seemingly more difficult and costly than shredding municipal waste.
- 3) Operation of storage bins and silos should be investigated for costs, down time, and alternative systems alternative approaches.
- 4) A standard method for determining BTU content which is relevant to municipal and industrial waste is sorely needed.
- 5) Adequate means of characterizing industrial waste are needed from a chemical and physical standpoint rather than a source of origin basis.

List of Speakers for Session 6

Henry Johnson, session chairman
General Motors Technical Center

Robert Ottinger, session co-chairman
TRW

John H. Trapp
Cincinnati Metropolitan Sewer District

Gene A. Johnson
Minnesota Mining and Manufacturing Co.

Bruce Hendrickson
Browning-Ferris Industries