SOLID WASTE PREPROCESSING: THE RETURN OF AN ALTERNATIVE TO MASS BURN

STUART H. RUSSELL
Thermo Electron Energy Systems
Waltham, Massachusetts

Discussion by

William G. Honsaker
Westinghouse
Fullerton, Ohio

This paper is a good compilation of solid waste preprocessing past and present.

As I read this paper, I was initially confused by the definitions, until I recognized Mr. Russell was including Refuse Derived Fuel (RDF) and Dedicated Prepared Fuel (DPF) under the general name of solid waste preprocessing.

The strengths of the paper are the lessons learned and the tables with associated discussions. The paper could be more complete with cost information on the recent projects.

One clarification: the National Recovery Technologies system at Gallatin, Tennessee, uses the rotary trommell drum with magnet bars to break the bags and remove ferrous and fines. They then use an eddy current device to detect nonferrous and an air jet to divert the nonferrous from the remaining waste stream. They also use some hand picking for heavy ferrous items.

On Table 1, the author might add a footnote *(c)* by the Tacoma facility, as they are now in construction of fluidized bed combustors to handle about 400 TPD of RDF as well as coal and wood waste. Start up is expected in 1989.

On Table 2, the Haverhill/Lawrence facility is undergoing expansion as is noted with a footnote *(c)*, but I understand that Ogden Martin is putting in a 1650 TPD mass burn system and will operate the DPF system at about 600 TPD.

It might be noted that the Columbus, Ohio facility has undergone extensive rehabilitation, and the Miami, Florida, facility should have a footnote *(b)*, as the current operator, Montenay, is making extensive changes.

I do agree with the author's conclusions, and anticipate additional DPF facilities as well as simple preprocessing with mass burn units will frequently be used in the future.

Discussion by

John D. Eppich
Los Angeles County Sanitation District
Whittier, California

The author, in his abstract, describes a paper which will review the history of preprocessing and describes the advances employed in the new preprocessing systems and also discusses why preprocessing is returning to popularity.

The author has done just that throughout his paper and has quite simply and adequately described certain

significant issues or trends in preprocessing and how it affects the future of preprocessing as an alternative to mass-burn. The author breaks preprocessing into two distinct groups, the RDF which he defines in a more narrow term as those using existing boilers and the DPF as those which would burn their fuel in new boilers. He then shows clearly that the success of preprocessing in the early years occurred only when certain common general characteristics were followed: *(a)* the system had to be simple using reliable equipment; and *(b)* the system had a combustive fuel in combustion units dedicated to burning the prepared fuel. We all are familiar with some of the more complicated early projects which did not meet with success; however, this paper clearly shows in simple terms what succeeded and why it did. Furthermore, you can determine from this if future preprocessing projects also could be expected to succeed if they follow the very simple design outlined by the author. The author in his section on reasons for return to preprocessing has focused on issues which are significant both in obtaining public and political acceptance as well as in controlling the cost of operation. By preprocessing before combustion, the facility not only reduces the amount of ash which eventually will be disposed of at a landfill, but also increases the probability of removing from the wastestream those items which, had they remained in the wastestream, would have contributed disproportionately to the heavy metal content in the ash.

Based on the proposed legislation for ash disposal being discussed in the Senate and in the House of Representatives, it appears that the author may be quite correct in anticipating a resurgence in preprocessing for the waste-to-energy business, whether it be with dedicated boilers or, as the author says, hybrid systems using conventional mass burn technology.