DEVELOPMENT OF AN INDUSTRIAL WASTE INCINERATOR SYSTEM: PILOT TESTING THROUGH FULL-SCALE OPERATION

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The electric radiant heater over a moving belt described here seems to be a very useful technique for incinerating some relatively uniform wastes, but the authors don't tell us enough. They say it's "cost effective", but fail to show any data supporting that statement.

Containers were shredded to help burn the sludge. What kind of containers? How fine do they have to be shredded?

It is useful to know that mixing the shredded particles and sludge was not as difficult as expected. It usually is difficult. Can't the authors tell us what factors made it unexpectedly easy?

No pictures. No diagrams. No detailed description of chamber, auxiliaries or arrangements. ASME should require more technical candor.

AUTHORS' REPLY

(1) Cost-effectiveness of operation — Data on actual operating cost was not available when paper draft was submitted in October, 1983. Schenectady Chemicals, Inc. (SCI), operators of the unit, has not separated cost of incineration from other waste handling costs within the plant. Data has been supplied by SCI for total waste handling operation, including waste sorting, mixing, ash disposal, and other tasks not related to sludge management indicating a total expenditure of $242,000 for 1983. A total of 900 tons of sludge/waste was processed. Approximately one-half of total cost was associated with sludge management. Cost for management was, therefore, $135/ feed ton. Costs for mixing/incineration alone have not been determined to this point.

(2) Container feed — Solid waste portion of feed material consisted of paper bags (some with polyethylene liner) and fiber drums of various sizes. Drums had metal top and bottom rings removed prior to shredding. Nominal particle size of shredded material was \( \frac{1}{8} \text{ in.} \times 1 \text{ in.} \) layer thickness of container. Only particle size limitation for shredded material is ability to pass through incinerator feed airlock. No testing was done to optimize particle dimensions for incineration. Occasional full-scale batch processing of shredded waste has not produced any significant feed or mixing problems.

(3) Ease of mixing — The flexible nature of the shredded solid waste particles and low viscosity of the sludge contributed to the relatively easy mixing of the waste components. The sludge contained a moderate amount of free liquid which was absorbed by the paper and fiber waste, and aided in mixing. See comments on full-scale processing in Item (2).

(4) Description of system — Use of photographs of the overall plant and installation was discouraged by SCI in light of ongoing discussions with environmental agencies at the time the paper was drafted. The oral presentation was supplemented with photographs of the actual installation.