MUNICIPAL INCINERATOR ASH—TECHNICAL AND REGULATORY TRENDS

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Generally the discussion presented in the paper is an excellent summary of the current status of incinerator ash disposal. However the authors ignored a third, very important technical issue that should be considered when discussing the "problem" of municipal ash disposal. This third technical issue is, what is the real potential for movement of potentially dangerous substances from the residues into the environment. This is basic to the technical definition of this problem, for only if potentially dangerous substances move out of the body of ash and into the environment is an environmental problem created.

It is generally conceded that fly ash, and to a lesser extent, bottom ash, contain elevated amounts of heavy metals, and fly ash in particular will have a quantity of dioxin/furan sorbed onto the particles. It is also generally conceded that the dioxin/furan does not readily desorb from the fly ash and move out into the surrounding environment. The dioxins/furans on ash then don't seem to create an environmental problem.

Heavy metals are generally dissolved in greater amounts as they are exposed to liquids of increasing acidity. The EP toxicity test uses an acidic liquid. This liquid apparently dissolves more metals than water passing through ashfills and/or landfills, since test results that I have seen of leachate liquids actually discharged from landfills show heavy metal levels generally below drinking water standards [1].

Again, it seems to me that the fact that incinerator residues contain elevated levels of heavy metals does not necessarily indicate that they create an environment risk. Rather, a risk is only created if those metals are dissolved, or mobilized, and move out of the body of ashes and into the general environment such that they adversely impact public health and welfare.

We can pass all manner of laws and write numerous and varied regulations but, if we don't start out from the proper technical foundation, we will discover that we have solved nonproblems at great expense, or, worse yet, we will have blocked utilization of one effective solution, incineration, to a very real environmental problem, management of our solid waste.

REFERENCE

[1] "Characterization of MWC Ashes and Leachates from MSW Landfills, Monofills, and Co-Disposal Sites." EPA 530-SW-87-028. NUS Corporation, Pittsburgh, Pennsylvania, October 1987.

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One of the roles performed by ASME's Solid Waste Processing Division is providing objective technical information on waste management issues. On the subject of municipal incinerator ash, the authors do an excellent job of fulfilling this role. The paper is a good summary of major technical and regulatory issue on ash.

As the paper states, the technical capabilities are available for environmentally acceptable disposal of ash. Ash disposal is not a technical problem; rather, it is an economic and regulatory problem. The paper supports the view point that if the new EPA regulations are written with care and reason, then the economics of ash disposal should be acceptable to most waste-to-energy operations.

The paper covers many of the key topics in the ash disposal debate. One additional issue that warrants mentioning is the appropriate pH for the extraction procedure used to test ash. Similarly, should the extraction procedure differ for monofills versus codisposal? A related matter, which the paper comments on, is the impact of lime from scrubbers or furnace injection on ash leachate characteristics. The paper points out that metal concentrations in the leachate will be low if pH is high; therefore, the appropriate pH for the extraction procedure should be established to represent conditions in the landfill.

Finally, there is a need to communicate the technical resolution of ash disposal issues to the public and legislators. Hopefully, the work within the Solid Waste Processing Division can reach all parties involved.