

Medical Waste Co-Firing Comes of Age

Karl Smith-Berntson (71370.146@compuserve.com; 717-755-1081)

James M. Stuart (717-755-1081)

DONLEE Technologies, Inc.

693 North Hills Road

York, PA 17402-2211

Abstract

The United States Environmental Protection Agency has estimated that about 4.3 million metric tons of medical/hospital wastes are generated annually in the United States, of this approximately 60% comes directly from hospitals. The other 40% are generated by such facilities as laboratories, physicians offices, dental offices, veterinarian clinics, funeral homes and care facilities, just to name a few. There are approximately 6,700 Medical Waste Incinerators (MWIs) in the United States. The dioxin emissions from these incinerators is a major public health hazard and therefore other means of medical waste disposal must be found.

In early 1992 DONLEE Technologies, Inc., in cooperation with the Department of Energy Fossil Energy Program, completed pilot testing of simulated non-infectious waste combustion, co-fired with coal, at its test facility in York, Pennsylvania. The goal of this testing was to demonstrate the ability of fluidized bed combustion to completely destruct medical waste with minimized dioxin emissions. The test facility is a full scale circulating fluidized bed unit with a maximum heat input capability of ten million BTU per hour. The tests showed that the circulating fluidized bed system is ideally suited to meet the medical/infectious waste destruction needs of the health care industry. The dioxin emission levels proved to be significantly lower than those from presently operating MWIs.

Based on the successful test results, a cooperative agreement with the Department of Energy Fossil Energy Power Systems, DONLEE Technologies, and the Veterans Administration was reached to design, construct, and test a demonstration unit at the Veterans Administration Medical Center in Lebanon, Pennsylvania. Plant design and construction was started in 1993, with DONLEE Technologies functioning as both the technology supplier and the plant EPC contractor.

After some delay the construction of the demonstration unit finally reached completion in the spring of 1996. The unit is currently undergoing initial shakedown and testing to

Research sponsored by the U.S. Department of Energy's Morgantown Energy Technology Center, under contract DE-FG21-91MC27205 with DONLEE Technologies, Inc., 693 N. Hills Rd., York, PA 17402-2211; telefax: 717-755-0020.

verify the base operating parameters. The unit will first be fired with coal only, followed by the introduction of non-infectious waste and finally total waste, including the "red bag" material.

The program calls for an extended testing period of up to one year. While the unit is being operated as part of the steam supply system at the VA Hospital, the hospital's waste is destroyed via combustion in the Fluidized Bed Unit.

It is anticipated that after successful demonstration at the Lebanon facility, several other VA or private hospitals will be interested in utilization of this technology for disposal of their infectious and non-infectious waste.