CLEANING OF MUNICIPAL WASTE INCINERATOR FLUE GAS IN EUROPE

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The paper discusses the various methods used in Europe to reduce emissions of pollutants from the stack gases of municipal incinerators. With respect to NOx, the paper mentions two experimental postcombustion control approaches involving the addition of chemicals to the wet-scrubber system to oxidize or reduce the NOx to absorbable NO2 or dischargeable N2. As pointed out, these methods would be expensive.

Recently, a postcombustion treatment involving chemical injection into the flue gas stream upstream of the scrubbers has been demonstrated in a Swiss municipal incinerator. As described in Ref. [1], the process involves the injection of an aqueous solution of urea and/or other chemicals into the boiler effluent stream at several different levels. These chemicals react with the flue gas producing N2, CO2 and H2O. NH3 is also a byproduct of this reaction, but can generally be controlled to less than 5 ppm at NOx reductions in the range of 60%.

The process had previously been demonstrated for conventional fuels, but not variable quality unsorted municipal refuse. NOx reductions of 60–70% were achieved starting from an initial level of 350–400 mg/Nm3, and ammonia in the stack gas was found to be less than 5 ppm following an aqueous scrubber.

Further optimization of the chemical delivered to the levels of injection is believed possible. This process will be less costly than the possibilities cited in the paper.

REFERENCE