

Replacement of Outlet Monitors for the Continuous Emission Monitoring System At the York County Resource Recovery Center

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INTRODUCTION

As titled this paper is a description of our experiences with our original "time shared" outlet continuous emissions monitoring system and the replacement of it. I will detail some of the inherent problems we faced through the years with the time shared monitors. I will describe what the catalyst was which required us to replace our monitors. And the preparation for and replacing of the monitors with the benefits of having done so.

FACILITY CHARACTERISTICS

The York County Resource Recovery Center (YCRRC) is a 1344-ton-per-day facility that converts raw municipal solid waste (MSW) into useful energy. The plant has three combustor boiler trains using Westinghouse O'Connor water-walled rotary combustor technology. The facility started operating in the fall of 1989.

MSW is delivered to the facility in the waste storage area, from where it is fed by crane into the feed chute and from there to the combustor. The combustor is a 13.3-foot diameter inclined cylinder that rotates at a slow speed. Combustion air is supplied to the combustor to burn the MSW and to create hot flue gas, which is used to produce steam in the boiler. Steam from the boiler is used to generate electricity for sale to GPU.

Each unit of the YCRRC is designed to burn approximately 448 tons per day of MSW with a higher heating value (HHV) of 4500 Btu/lb. The Westinghouse Data Processing Family (WDPF) system located in the central control room operates the automatic combustion control that regulates feed ram speed, combustor rotation speed, and combustion air distribution. The combustion control logic is based on set-point parameters such as flue gas oxygen level, steam flow, flue gas carbon monoxide concentration, and combustion gas temperature.

Pollutant emissions are controlled using a spray dryer absorber and baghouse for each unit. A hydrated lime [$\text{Ca}(\text{OH})_2$] slurry is injected into a reaction vessel where acid gases (mainly SO_2 and HCl) are absorbed (lime slaking system: Wallace & Tiernan series A-758). The system is designed so that hot flue gas evaporates the atomized lime slurry to leave dry calcium salts. A fabric filter (baghouse) is used downstream of the spray dryer to collect the spray dryer reactant products, unreacted sorbent, and fly ash. Mercury emissions are controlled by an activated powdered carbon injection system (carbon injection system: Norit PAC Dosing System); the injection point is downstream of the