Evolution of Best Available Control Technology (BACT) for WTE Plants in New York State

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Typical Uncontrolled MSW Incinerator at Amsterdam, NY circa 1968

- Manual combustion controls
- Rudimentary settling chamber or cyclone dust collector
- Mainly opacity standards
First Dry Scrubber and Baghouse in New York State

- Alcoa Primary Aluminum Pot Furnace, Dry Scrubber Activated Alumina Fabric Filter
- Massena, NY circa 1969
Albany NY – Energy Answers Corp. WTE RDF (Refuse Derived Fuel) Suspension Fired Boiler Plant

- Good RDF WTE burning concept
- Equipped only with ESP, not BACT*
- BACT suggested, but not required

*BACT: Best Available Control Technology
Albany NY – Energy Answers WTE RDF
The Teller *Tesisorb* Dry Injection Scrubber

- First used in secondary aluminum and glass process furnaces
- Framingham, MA: Teller dry scrubber installed in WTE facility in 1974
- BACT Air Pollution Control technology transfer to Japan, Mitsubishi & Takuma 1976
- Control of dioxin emissions from incineration - Teller/Lauber 1983 AWMA, Atlanta GA
Teller Dry Scrubber circa 1980

- Japanese installations
- Tesisorb direct dry venturi injection to fabric filter inlet duct
- Lime + alumina + silica injection
First Teller NYS MSW WTE Facility

- Montenay, Dutchess County WTE Plant - 1989
  O’Connor rotary combustor WTE
- 450 tpd
- Modified to Dry Scrubber, Fabric Filter (FF), and Activated Carbon Injection (ACI)
Dutchess County, NY – Montenay WTE Plant
Hempstead NY – ARF (now Covanta) WTE Plant

- 3 units, 850 tpd ea., Mass Burn
- SDA
- Fabric Filter baghouse/lime injection
- Selective Non-Catalytic Reactor (SNCR) for NOx reduction, use of urea
- Continuous Emission Monitoring (CEM)
Hempstead NY – ARF (now Covanta) WTE Plant
Onondaga Covanta WTE plant, Mass Burn

- 3 units - 330 tpd each
- SDA
- FF/lime injection
- SNCR-NH3
- Act. C injection
- MACT Hg standard 80 ug/dscm
- CEM
Onondaga – Covanta WTE plant
BACT today and for the future

- U.S.: Implementation of EPA Maximum Available Control Technology (MACT) regulations
- E.U.: Best Available Technology (BAT) emission standards
- Afval Energie Bedrif (AEB), Amsterdam, the Netherlands
- Hybrid dry/wet scrubbers