

# Waste Combustion Systems

## Project Description



Design and supply a complete incineration system for the destruction of industrial wastes generated at a large chemicals plant in Shanghai Chemical Industrial Park (SCIP), Shanghai, China.

### Plant description

The plant consists of two identical process lines, each with multi-part feed system, rotary kiln (co-current), secondary chamber, wet ash handling system, heat recovery system and emission control system. The system is designed to process sludges, waste oils, waste liquids, bulk solids and containerized wastes. A complex system of 35 different control racks mix and control the flow of composite liquid wastes into the primary and secondary chambers burners and lances.

### Start-up Date

Mid 2006

### Capacity

4,600 kg/hr of composite waste feed per line. The kiln and secondary have a combined heat release capacity of 14.9 million kcal/hr per line.

### Equipment

For the Project, Metso supplied the following equipment and services:

- Engineering, design and supply of complete incineration system, feed to stack
- Local manufacturing of major equipment fabrications
- Automatic feeding systems for sludges, waste liquids, bulk and containerized solids
- Rotary kilns – two (2) 3.8 m diameter x 15.24 m long
- Secondary combustion chambers – 2+ seconds retention time at 1100 °C
- Wet ash removal systems, drag chain conveyor type
- Water tube heat recovery boilers, two (2), each producing 14,000 kg/hour at 28 barg, 280 °C superheated steam at rated capacity

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- Emission control systems – dry treatment process, followed by a wet treatment process. The dry portion consists of conditioning tower, dry lime injection, activated carbon injection and a fabric filter. The wet treatment that follows includes a two-stage wet scrubber, followed by a particulate removal stage for submicron particulate created by reactions between acid and basic components in the gas stream.
- Refractories, ducting, exhaust stacks
- Control systems, instrumentation, Continuous Emission Monitors (CEM)
- Erection and start-up assistance

