

## WET ELECTROSTATIC PRECIPITATORS (WESPS)

The Monroe Wet Electrostatic Precipitator (WESP) provides high efficiency collection of PM<sub>2.5</sub>, submicron, and fine particulate matter. Monroe Wet ESPs are designed to achieve very low PM emissions with reliable operation and minimal maintenance.

## Effective control of fine particulate matter emissions

- PM<sub>2.5</sub> and submicron particulate
- Condensables and aerosols
- Opacity reduction and elimination
- Boiler and dryer emissions
- Biomass & fertilizer production
- Smoke capture
- Textile production
- And many others

### Monroe Wet ESP Design & Operation

Monroe Environmental Wet Electrostatic Precipitator systems are capable of meeting the most stringent PM<sub>2.5</sub>, opacity, and condensable particulate regulations.

The Monroe WESP is an upflow collector with precision sparking elements and a high voltage electrical field which provide exceptional particulate charging and collection. Integral pre-conditioning sprays, washdown, and optimized liquid management configurations provide efficient cleaning of the collection tubes and ensure long term operation with minimal maintenance.

Incoming gases can be pre-treated with a Monroe Packed Bed Scrubber or Venturi Scrubber to remove acids and larger particulate prior to the WESP.

At the precipitator inlet, a fine mist spray and air straightening section precondition the PM for collection. The high voltage corona, electrodes, and collection tubes charge and separate the PM from the gas stream.



#### Applications

- Textile production
- · Laminator exhaust
- Oven exhaust
- Dryer exhaust
- Boiler emissions
- Biomass & fertilizer production
- Wood fiber, cellulose, & pulp
- Acid mist & aerosols
- Smoke capture
- PM<sub>2.5</sub> & submicron dust
- Opacity reduction
- And many others



Collected solids and liquid drain from the tubes and clean gas exits at the top of the precipitator.

### Benefits of a Monroe Wet Electrostatic Precipitator

- Lower Operating Costs: Energy usage for a Monroe WESP can be significantly lower vs. alternative higher-pressure PM filtration systems.
- Submicron PM Removal: Wet ESPs provide extremely high collection efficiency on PM<sub>2.5</sub>, aerosols, and other sub-micron PM emissions which are typically the most difficult and costly to collect.
- Optimized Water Management: Monroe's wastewater treatment expertise allows us to incorporate systems to achieve continuous removal of solids, oils, and suspended PM. Many configurations are available to meet site requirements.
- **Reliable Operation:** Monroe Wet Electrostatic Precipitators require little maintenance and operator interface. Heavy duty construction, minimal moving parts, and optimized control schema ensure long term reliability.

# WESP Designs Customized to Your Application

Monroe Environmental offers the ability to customize the WESP design for a new application or as a retrofit into an existing pollution control train. Liquid management, materials of construction, pre-treatment,



instrumentation, and controls will be properly configured by Monroe engineers to successfully integrate the Wet Electrostatic Precipitator into your plant.

- Several materials of construction available for compatibility with gas stream or available liquid stream
- Liquid reservoirs with customizable configurations and control schema as integral or stand-alone systems

- Pump, piping, and valves to suit customer preferences and layout requirements
- Instrumentation and controls offered as standard package or built to customer specifications
- Integration with other Air Pollution Control Equipment is possible with Monroe's engineering and application expertise



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