

WET ELECTROSTATIC PRECIPITATORS (WESPs)

The Monroe Wet Electrostatic Precipitator (WESP) provides high efficiency collection of PM_{2.5}, 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_{2.5} 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

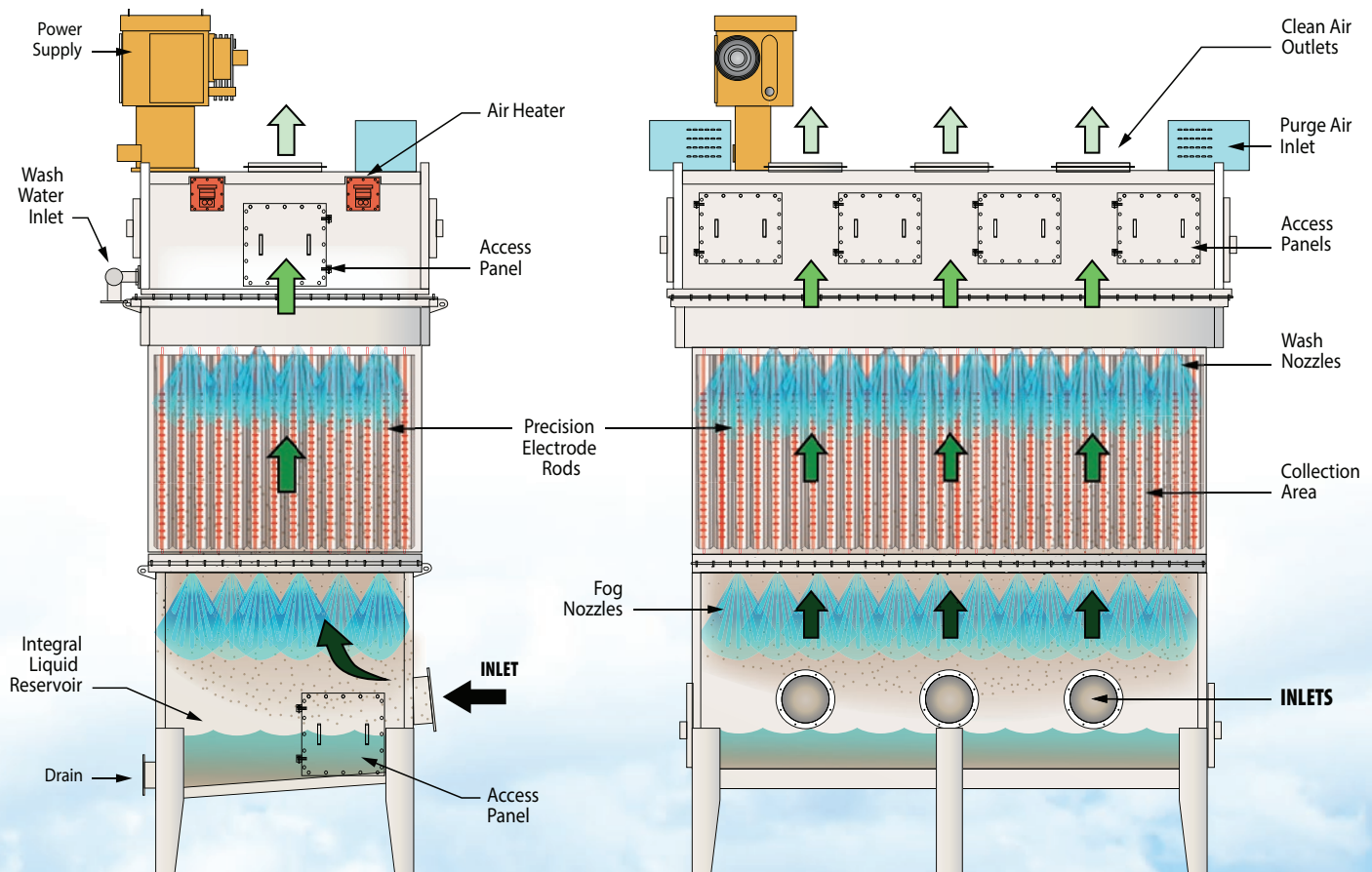
Monroe Environmental Wet Electrostatic Precipitator systems are capable of meeting the most stringent PM_{2.5}, opacity, and condensable particulate regulations.

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



*Installation of a Wet ESP for
smoke abatement at a fire
materials testing facility*

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_{2.5}, 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 streams
- Liquid reservoirs with customizable configurations and control schema as integral or stand-alone systems



Applications

- Textile production
 - Laminator exhaust
 - Oven exhaust
 - Dryer exhaust
 - Boiler emissions
 - Biomass & fertilizer production
 - Wood fiber, cellulose, & pulp
 - Acid mist & aerosols
 - Smoke capture
 - PM_{2.5} & submicron dust
 - Opacity reduction
 - And many others
- 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