

## Power Generation Environmental Services

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ES Engineering Services comprises many of the top professionals across all environmental regulatory disciplines. Our engineers, meteorologists, geologists, certified water/wastewater professionals and technicians inform and contribute to the creation of the very regulations on which we advise clients. We take it as our responsibility to assure that industry is protected along with the environment. We protect clients up front with training programs, and defend them when challenged with forensic support.

We provide our power generation clients with a variety of stack testing services. Our technicians have pioneered many of the testing methods we use to measure and quantify low concentrations of pollutants, including particulate matter (PM), nitrogen oxides (NOx), and hazardous air pollutants (HAPs), resulting from modern power generation technology.

We work with an array of power generators:

- Simple and Combined Cycle Gas Turbines
- Internal Combustion Engines
- Fossil Fuel Fired Utility Boilers
- Dairy Digesters, Landfill Gas, Solid Waste, Biomass Combustion
- Pyrolysis / Gasification

## Permitting and Compliance Management Services

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- Agency negotiations and expert witness services
- Air toxic investigations associated with the Mercury and Air Toxics Rule (a.k.a. Utility M.A.T.S)
- Dispersion / air impact and accidental release modeling
- Emission factor development, emission inventories and toxic release inventory (TRI)
- Environmental Management and Compliance Systems and Audits
- Expertise in use of Selective Catalytic Reduction (SCR) for NOx emission control
- Health risk and technology assessments
- Regulatory applicability determinations, investigation of control technology alternatives, and development of most efficient permitting strategies

## Emission Testing Services

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- Continuous Emissions Monitoring (CEMS), Relative Accuracy Test Audit (RATA), Calibration Gas Audits (CGA), Quarterly Relative Accuracy Audits (RAA), Linearity 40 CFR Part 60 and Part 75.
- Control equipment performance guarantee testing.
- Mercury controls and compliance testing.
- Particulate size distribution evaluations.
- SCR tuning and optimization.
- Ultra-low emission measurements for NOx, particulate matter and HAPs.

## Emission Testing Services

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- Complete US EPA reference method capabilities, including particulate matter (Method 5), SO<sub>2</sub> (Method 6C), NO<sub>x</sub> – (Method 7E), CO – (Method 10), PM<sub>10</sub> – (Method 201A / 202), metals (Method 29), VOCs (Method 25A), ammonia (CTM027), total reduced sulfur (Method 15A), Hg – (Method 29, Method 30B) (with on-site recovery), Hg – (Ontario-hydro), HCl – (Method 26A, Method 321).

## Ambient Monitoring Services

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- Data retrieval and review, remote systems configuration and control via wireless modem, Ethernet, internet, cell or landline phone, or spread spectrum radio.
- EPA reference/equivalent methods for criteria air pollutants and meteorological parameters.
- High-volume, low-volume discrete period samplers and low-volume continuous samplers.
- Integrated data acquisition systems to collect, store and transmit data.
- Monitoring network design and siting assistance, equipment procurement, system integration, field installation, operation and maintenance, and quality assurance audits.
- Turnkey remote monitoring stations equipped with automatic calibration checks, monitoring of instrument operating status and trained local field operators for routine checks.

## Client List

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Abengoa  
BHP-Billiton  
Cambria Cogeneration  
City of Anaheim Utility Department  
City of Cleveland  
City of Detroit  
City of Glendale Water and Power  
DTE Energy  
First Energy  
Georgia BioMass  
Imperial Irrigation District

Indiantown Cogeneration  
Northern Indiana Public Service Company (NIPSCO)  
NRG  
Optera Energy  
Peabody Energy  
Penn State University Campus Steam Plant  
Pepco Energy Generating Service  
Piney Creek  
Public Service Company  
Tri-State Generation and Transmission Association  
Western Water and Power Production, LLC