

AIR POLLUTION CONTROL EQUIPMENT DATA – ELECTROSTATIC PRECIPITATOR

FORM E104  
7/2001

1. Name of Company: \_\_\_\_\_  
(As shown on Line 1, Form E001)

2. Equipment Name: \_\_\_\_\_  
(As shown on Line 10, Form E001)

3. **Equipment Data:**

Manufacturer of ESP: \_\_\_\_\_ Model No. \_\_\_\_\_

Date of Manufacture: \_\_\_\_\_ Date of Installation: \_\_\_\_\_ Cost of ESP: \_\_\_\_\_

Does ESP contain pre-cleaning equipment:  Yes  No

If yes, what type: \_\_\_\_\_  
(File applicable form for control equipment)

4. **Equipment Design:**

A. Volume of Gas discharged from ESP at dry standard conditions: \_\_\_\_\_ Dscfm

B. Number of Stages:  Single-stage  Two-stage

C. Mode of Operation:  Dry process  Wet process

5. **D. Pressure Drop Across ESP:**

Stated by Manufacturer: \_\_\_\_\_ In. H<sub>2</sub>O

Measured (actual): \_\_\_\_\_ In. H<sub>2</sub>O

6. **Inlet Gas Properties:**

A. Inlet Gas Temperature (T<sub>i</sub>): \_\_\_\_\_ °F

B. Inlet Gas Pressure (P<sub>i</sub>): \_\_\_\_\_ In. H<sub>2</sub>O

C. Inlet Gas Velocity (V<sub>i</sub>): \_\_\_\_\_ Ft/sec

D. Inlet Area (A<sub>i</sub>): \_\_\_\_\_ Ft<sup>2</sup>

E. Inlet Gas Density (ρ<sub>g</sub>): \_\_\_\_\_ Lbs/ft<sup>3</sup>

F. Inlet Gas Viscosity (μ): \_\_\_\_\_ Lbs/ft-sec

G. Inlet Gas Moisture: \_\_\_\_\_ %

H. Gas Stream Dew Point: \_\_\_\_\_ °F

I. Inlet Gas Flow Direction:  Horizontal  Vertical

7. **Component Information:**

Indicate which of the following are components of this ESP:

<input type="checkbox"/> Flow Rate Instrumentation	<input type="checkbox"/> Inlet Gas Temperature Instrumentation
<input type="checkbox"/> Dew Point Indicator	<input type="checkbox"/> Differential Pressure Instrumentation
<input type="checkbox"/> Heat Exchanger	<input type="checkbox"/> Evaporator Cooler
<input type="checkbox"/> Pre-heater	<input type="checkbox"/> Transmissometer

8. **Equipment Operation:**

A. Operation of ESP:      Continuous      Intermittent      Periodic

B. Shape of ESP:      Rectangular      Cubical      Cylindrical

C. Volume of ESP:      \_\_\_\_\_ Ft<sup>3</sup>

D. Dimensions of ESP:      Height: \_\_\_\_\_ Ft      Width: \_\_\_\_\_ Ft      Length: \_\_\_\_\_ Ft

E. Shell Material:      \_\_\_\_\_

F. Does the inlet duct contain any type of gas distribution plate:      Yes      No

9. **Cleaning Information:**

A. Cleaning Method (Check one):      Periodic      Continuous      By-passed

B. Cleaning Technique:      Side Rapping      Automatic Water Spray      Top Rapping

Cleaned by Gravity      Manually Washed

C. Cleaning Cycle:      \_\_\_\_\_ Times per week

10. **Electrode Information:**

A. Collecting Electrode Design:

Shape:      Tubular      Rod Curtain      Vertical Gas Flow Plates      Folded Plate

Smooth Plate      Dual Plate      Perforated Plate      Pocket-type Plate

Roll Plate      Box Plate      Zig-zag Plate

Type of Alloy:      \_\_\_\_\_

Electrode Dimensions:      Length: \_\_\_\_\_ Ft      Width: \_\_\_\_\_ ft

B. Discharge Electrode Design:

Shape:      Square Twisted Rods      Round

Ribbons      Other (specify):

Barbed

Type of Alloy:      Steel      Copper      Lead-covered Steel      Fine Silver

Stainless Steel      Aluminum      Hastelloy      Titanium

Nichrome

Precipitating Field Strength:      \_\_\_\_\_ KW/in.

11. **Rectifier Information:**

A. Type:      Tube-type      Solid State

B. Transformer Rating:      \_\_\_\_\_ Volts secondary

12. **Collected Emissions Disposal:**

A. Disposal Method:

Automatic (Describe): \_\_\_\_\_

Manual (Describe): \_\_\_\_\_

B. How often are the hoppers emptied: Every \_\_\_\_\_ Hours

C. Name of Commercial Disposal Company (If Applicable): \_\_\_\_\_

D. Is material wetted prior to disposal:  Yes  No

E. Disposal Site: \_\_\_\_\_

13. **Emissions Data:**

A. Emission type(s): \_\_\_\_\_

B. Inlet emission concentration ( $\rho_p$ ): \_\_\_\_\_ Lbs/ft<sup>3</sup>

C. Particle Properties: (Check one or more)  Powder-like  Explosive  Tacky  Mineral  
 Extremely Sticky  Corrosive  Toxic  Fly Ash  Mist  Tar  
 Hygroscopic  Other (Describe): \_\_\_\_\_

D. Particle Size Distribution in Microns ( $\mu$ )

Size	0-5 $\mu$	5-10 $\mu$	10-20 $\mu$	20-44 $\mu$	Greater Than 44 $\mu$
Give % by wt.	%	%	%	%	%

E. Mean Particle Size: \_\_\_\_\_ microns Mean Particle Diameter: \_\_\_\_\_ Microns

F. Particulate Control Efficiency:

Manufacturer's Stated Efficiency: \_\_\_\_\_ %

Required Efficiency: \_\_\_\_\_ %

Operational Efficiency (performance testing): \_\_\_\_\_ %

G. Efficiency for Particle Size

Size	0-5 $\mu$	5-10 $\mu$	10-20 $\mu$	20-44 $\mu$	Greater Than 44 $\mu$
Give % by wt.	%	%	%	%	%

14. **Fan Data:**

Location of Fan (check one):  Clean air side (pull through)  Dirty air side (push through)

Fan Design (check one A, B, or C):

Fan Type	Blade Type
A. <input type="checkbox"/> Centrifugal (radial flow)	<input type="checkbox"/> Forward Curve <input type="checkbox"/> Backward Curve
B. <input type="checkbox"/> Axial Flow (propeller)	<input type="checkbox"/> Straight <input type="checkbox"/> Propeller
	<input type="checkbox"/> Tube Axial <input type="checkbox"/> Vane Axial

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Fan Data:			
Diameter:	_____ In.	Braking Horsepower:	_____ BHP
Speed:	_____ RPM	Inlet Area:	_____ Ft <sup>2</sup>
Volume:	_____ Cfm @ STP	Outlet Area:	_____ Ft <sup>2</sup>
Static Pressure:	_____ In. H <sub>2</sub> O	Motor Horsepower:	_____ HP
<input type="checkbox"/> Standard		<input type="checkbox"/> Heavy Duty	
Submitted copy of manufacture's multi-rating tables?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Special Materials of Construction:		<input type="checkbox"/> Rubber, Phenolics, Vinyls, or Epoxy Covering	
<input type="checkbox"/> Aluminum	<input type="checkbox"/> Bisonite	<input type="checkbox"/> Zinc Chromate Primer	<input type="checkbox"/> Bronze Alloys <input type="checkbox"/> Stainless Steel
C. Compressor	<input type="checkbox"/> Positive Displacement <input type="checkbox"/> Dynamic <input type="checkbox"/> Reciprocating		

*This is to certify that I am familiar with the operations concerning this equipment and that the information provided on this application is true and complete to the best of my knowledge. **This form must be completely filled out before it will be acceptable.***

Mail to:  
CHATTANOOGA-HAMILTON COUNTY  
AIR POLLUTION CONTROL BUREAU  
6125 Preservation Drive  
Chattanooga, TN 37416

Company Official: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

***DO NOT WRITE BELOW THIS LINE***

\_\_\_\_\_ Engineer Approval      This form corresponds to permit number: \_\_\_\_\_

Special Notations: \_\_\_\_\_  
\_\_\_\_\_