

# PUGET SOUND CLEAN AIR AGENCY

## Additional Notice of Construction Application Requirements for

### ELECTROSTATIC PRECIPITATORS (ESP)

#### General

Equipment or Process Being Controlled [*Specify the source(s) of the particulate matter to be controlled. If the source(s) are also new, complete the applicable permit forms*]

Identify which of the following categories the project fits into:

1. New Construction (*New construction also includes existing, unpermitted equipment or processes*)
2. Reconstruction (*Reconstruction means the replacement of components of an existing facility to such an extent that the fixed capital cost of the new components exceeds 50% of the fixed capital cost that would be required to construct a comparable entirely new facility*)
3. Modification (*Modification means any physical change in, or change in the method of operation of, a source, except an increase in the Hours of Operation or production rates (not otherwise prohibited) or the use of an alternative fuel or raw material that the source is approved to use under an Order of Approval or operating permit, that increases the amount of any air contaminant emitted or that results in the emission of any air contaminant not previously emitted*)
4. Amendment to Existing Order of Approval Permit Conditions

Estimated Hours of Operation (hr/day, day/wk, wk/yr) [*Estimate the hours of operation for the new ESP - not necessarily the entire facility*]

Estimated Installation Date [*Estimate the date when the new ESP will be put into service*]

**Inlet Gas Stream Characteristics [Pretreatment (e.g., heating or dilution) is necessary if the temperature is not 50-100 °F above the dewpoint]**

Particulate Concentration (lb/hr, gr/acf, or gr/dscf) [*Specify the amount of particulate matter being vented to the ESP in pounds per hour, grains per actual cubic foot, or grains per dry standard cubic foot. (One pound contains 7000 grains.)*]

Particle Mean Diameter (micrometers) [*Specify the mass mean aerodynamic diameter of the particles in micrometers*]

Particle Resistivity (ohm-cm) [*Specify the approximate electrical resistivity of the particles on the collection plate in ohm-cm*]

Flowrate (acfm) [*Specify the airflow in actual cubic feet per minute. This is usually determined from the fan performance 'curve' based upon the expected static pressure caused by the sum of the pressure losses from each component in the ductwork, including the ESP*]

Temperature (°F) [*Specify the temperature in degrees Fahrenheit*]

Moisture (% by volume) [*Specify the moisture (water vapor) concentration in percent by volume*]

**Design** [*Most design information is available from the manufacturer or vendor. Submittal of a brochure, scale drawing or process and instrumentation diagram will facilitate the review of the permit application*]

Make & Model [*Specify the manufacturer and model of the ESP - not the serial number*]

Type of ESP [*Specify plate/wire, plate/plate, or tube/wire. Also specify if irrigated with water to remove collected particles.*]

Number of Stages [*Specify one stage or two. (Two stage ESPs have separate ionization and collection stages.)*]

Collection Efficiency (%) [*Specify the control efficiency of the ESP, as stated by the manufacturer*]

Specific Collection Area (ft<sup>2</sup>) [*Specify the total dust collection area of the ESP plates or tubes*]

Particle Migration (Drift) Velocity (ft/s) [*Specify the particle migration velocity, often called the drift velocity. This is the velocity at which the particles migrate toward the collection plate or tube.*]

Gas Conditioning Equipment (if any) [*Specify any reagents injected to adjust the resistivity of the dust cake, any upstream control equipment to remove coarse particles, and any heaters or dilution air used to keep the gas stream above the dew point*]

Method Used to Design/Size the ESP [*Specify the method used to select this design and size of ESP. If design calculations were performed, they should be submitted. If the design and sizing was based on similar (successful) applications, list the owners and the city and state where they are located*]

### **Stack**

Stack Height (ft) [*Specify the height of the top of the stack above ground level - not above the building or sea level*]

Stack Diameter or Rectangular Cross-Sectional Dimensions (inches) [*Specify the internal dimensions - not the external dimensions*]

Exhaust Flowrate (acfm) [*Specify the airflow in actual cubic feet per minute. This is usually determined from the fan performance 'curve' based upon the expected static pressure caused by the sum of the pressure losses from each component in the ductwork, including the cyclone*]

Exhaust Temperature (°F) [*Specify the temperature of the exhaust leaving the stack*]

Distance to Nearest Property Line (ft) *[Specify the distance from the base of the stack to the nearest property line.]*

Height, Length and Width of Buildings (ft) *[Specify the approximate dimensions of any buildings that are >40% of the stack height and are located within 5 building heights from the stack]*

**Operation and Maintenance**

Method Used to Establish Cleaning Frequency and Intensity *[Specify the method used to determine the rapping frequency and intensity.]*

Describe Preventive Maintenance *[Specify the expected inspection frequencies for broken discharge wires or rapping equipment, spark rate, voltage, etc. Also specify the records to be kept (e.g., records of all inspections and repairs, the amount of dust collected per month), and specify any spare parts to be kept on-site (e.g., electrodes, rapping equipment)]*

Methods Used to Prevent Emissions From Handling and Disposal of Dust *[Specify the equipment, procedures, and methods used to prevent emissions from the handling and disposal of dust. Is the receiving hopper completely enclosed? How is the dust hopper emptied without causing emissions?]*