

Instruction Sheet

DEP7007GG Control Equipment

This form is a detailed description of information related to control information at the facility. Only complete the sections for those pieces of control equipment that are utilized. Make additional copies as necessary.

Source Name: Enter the name of the facility.

KY EIS (AFS) #: Enter the Kentucky Emissions Inventory Section identification number of the facility. The KY EIS number follows the format: 21-____-_____. A new facility will not have a KY EIS number.

Permit #: Enter the permit number of the permitted facility. This number is found on the front page of the permit. A new facility will not have a permit number.

Agency Interest (AI) ID: Enter the agency interest number of the facility. This number is found on the front page of the permit. A new facility will not have an agency interest number.

Date: Enter the date the form was completed. If the form is being revised, enter the date the form was revised.

Section GG.1: General Information - Control Equipment

Complete this section for all control devices. Complete Sections GG.2 through GG.11, as applicable. For control equipment listed on GG.11, manufacturer's equipment specifications and recommended operating procedures may be submitted.

Control Device ID #: Enter the Control Device ID #.

Control Device Name: Enter the Control Device name.

Cost: Provide the cost associated with the device.

Manufacturer: Enter the manufacturer of the device.

Model Name/Serial #: Enter the model and serial number.

Date Installed: Enter the date the control device was installed.

Inlet Gas Stream Data for All Control Devices:

Temperature: Record the temperature in °Fahrenheit.

Flowrate: Record the flowrate in standard cubic feet per minute (scfm at 68°F).

Average Particle Diameter: Enter the average particle diameter.

Particle Density or Specific Gravity: Record the particle density or specific gravity in lb/ft³.

Gas Density: Record the gas density in pounds per cubic foot.

Inlet Gas Stream Data for Condensers, Adsorbers, Afterburners, Incinerators, Oxidizers Only:

Gas Moisture Content: Record the gas moisture content as a percentage.

Gas Composition: Enter the gas composition.

Fan Type: Enter the type of fan used.

Equipment Operational Data for All Control Devices:

Pressure Drop Range: Enter the pressure drop range in inches of water.

Pollutants Collected/Controlled: Provide a brief description of the pollutants collected or controlled.

Pollutant Removal: Enter the percentage of pollutants removed.

Section GG.2: Flare Source Information

Control Device ID/#: Enter the ID and # of the flare.

Identify all Emission Units and Control Equipment that Feed to Flare: Identify all emission units and control equipment that use the flare.

Type of flare: Identify the type of flare, this may include steam-assisted, air-assisted, or non-assisted.

Process gas flowrate: Record the flowrate in standard cubic feet per minute (scfm).

Net heating value of stream: Record the net heating value of the gas stream in Btu/scf.

Removal efficiency: Record the removal efficiency as a percentage.

Flare rated capacity: Record the rated capacity in MMBtu/hr.

Section GG.3: Cyclone

The control device manufacture's equipment specifications and recommended procedures may be submitted in place of this information.

Control Device ID/#: Enter the Control Device ID and #.

Identify all Emission Units and Control Equipment that Feed to Cyclone: Identify all emission units and control equipment that use the cyclone.

Identify Number of Cyclones: Enter the number of cyclones. Indicate if the cyclone is single or multiple. If multiple, enter the number of multi-clones.

Identify Type: Indicated if the cyclone is high efficiency, conventional, or high throughput).

Inlet Height: Record the inlet height in feet.

Inlet Width: Record the inlet width in feet.

Bottom Cone Height: Record the bottom cone height in feet.

Body Height: Record the body height in feet.

Body Diameter: Record the body diameter in feet.

Dust Outlet Tube Diameter: Record the dust outlet tube diameter in feet.

Gas Outlet Tube Diameter: Record the gas outlet tube diameter in feet.

Vortex Finder Height: Record the vortex finder height in feet.

Section GG.4: Electrostatic Precipitator (ESP)

The control device manufacture's equipment specifications and recommended procedures may be submitted in place of this information.

Control Device ID #: Enter the Control Device ID and #.

Identify all Emission Units and Control Equipment that Feed to ESP: Identify all emission units and control equipment that use the ESP.

Identify Type: Indicate whether the ESP is a dry negative corona, wet negative corona, or wet positive corona.

Number of Stages: Enter the number of stages.

Number of Plates per Stage: Enter the number of plates per stage.

Plate spacing: Record the plate spacing in inches.

ESP Total Width: Record the ESP total width in feet.

ESP Total Height: Record the ESP total height in feet.

Collection Plate Height: Record the collection plate height in feet.

Length of Collection Plate: Record the length of the collection plate in feet.

Particle Migration (Drift) Velocity: Enter the particle migration (drift) velocity, specify the units.

Particle Resistivity: Enter the particle resistivity, specify the units.

Voltage Across Plates: Enter the primary and secondary voltage across plates in volts.

Primary and Secondary Current: Enter the primary and secondary current in amperes.

Section GG.5: Scrubber

The control device manufacturer's equipment specifications and recommended procedures may be submitted in place of this information.

Control Device ID #: Enter the Control Device ID and number.

Identify all Emission Units and Control Equipment that Feed to scrubber: Identify all emission units and control equipment that use the scrubber.

Identify Type of Scrubber: Indicate if the scrubber is venturi scrubber, packed bed scrubber, spray tower, or other. If other, please specify.

Venturi Scrubber:

Throat Type: Indicate it is fixed or adjustable.

Packed Bed Scrubbers:

Packing Type: Identify the type of packing.

Packing Height: Record the packing height in inches.

Spray Towers:

Number of Nozzles: Enter the number of nozzles.

Nozzle Pressure: Record the nozzle pressure in psig.

Type of Flow: Indicate if the flow is concurrent, countercurrent, or crossflow.

Length in Direction of Gas Flow: Record the length in direction of the gas flow in feet.

Cross-Sectional Area: Record the cross-sectional area in square feet.

Venturi Throat Velocity: Record the Venturi throat velocity in feet per second.

Mist Eliminator:

Type: Indicate if the mist eliminator is mesh or vane.

Cross-Sectional Area: Record the area of the cross section in square feet.

Pressure Drop: Record the pressure drop in inches of water.

Scrubbing Liquid:

Chemical Composition: Enter the chemical composition.

Flowrate: Record the flowrate in gallons per minute (gal/min).

Fresh Liquid Makeup Rate: Record the fresh liquid makeup rate in gallons per minute (gal/min).
Describe Disposal Method of Scrubber Effluent: Describe the method of disposal of the scrubber effluent.

Section GG.6: Filter

The control device manufacturer's equipment specifications and recommended procedures may be submitted in place of this information.

Control Device ID #: Enter the Control Device ID and number.

Identify all Emission Units and Control Equipment that Feed to Filter: Identify all emission units and control equipment that use the filter.

Identify the Type of Filter Unit: Indicate if the filter is a baghouse, cartridge, collector, or other. If other, specify.

Identify the Type of Filtering Material: Indicate if the filtering material is fabric, paper, synthetic, or other. If other, specify the material.

Filtering Area: Record the filtering area in square feet.

Effective air-to-filter ratio: Record the effective air-to-filter ratio in acfm/ft².

Continuous monitoring instrumentation: Identify the type of continuous monitoring equipment.

Additional materials introduced into the Control System:

Material: Identify the type of materials introduced into the system

Injection Rate: Record the injection rate of additional materials in pounds per hour.

Identify Cleaning Method: Indicate if the cleaning method is shaker, pulse air, reverse air, pulse jet, or other. If other, specify.

Identify Gas Cooling Method: Indicate if the gas cooling method is ductwork, heat exchanger, bleed-in air, water spray, or other. If other, specify.

For Ductwork:

Length: Record the length of the ductwork in feet (ft).

Diameter: Record the diameter of the ductwork in feet (ft).

For Bleed-in Air:

Flowrate: Record the flowrate for the bleed-in air as standard cubic feet per minute (scfm).

For Water Spray:

Flowrate: Record the flowrate of the water spray in gallons per minute (gal/min).

Section GG.7: Afterburner/Incinerator/Oxidizer

The control equipment manufacturer's equipment specifications and recommended procedures may be submitted in place of this information.

Control Device ID/#: Enter the Control Device ID and number.

Identify all Emission Units and Control Equipment that Feed to

Afterburner/Incinerator/Oxidizer: Identify all emission units and control equipment that use the afterburner, incinerator, or oxidizer.

Identify Type: Indicate if the control device is an afterburner, incinerator, oxidizer, or other. If other, specify.

Number of Burners: Enter the number of burners.

Burner Rating: Record the burner rating in British Thermal Units per hour (Btu/hr).

Dimensions of Combustion Chamber: Record the dimensions of the combustion chamber, specify the units.

Residence time: Record the residence time in seconds.

Combustion chamber temperature: Record the temperature of the combustion chamber in °F.

Type of Catalyst: Enter the type of catalyst, if applicable.

Type of Heat Exchanger: Enter the type of heat exchanger, if applicable.

Auxiliary Fuel:

Identify Fuel Type: Enter the fuel type.

Higher Heating Value: Record the higher heating value of the fuel, specify the units.

Hourly Fuel Usage: Record the hourly fuel usage, specify the units.

% Sulfur (maximum): Record the maximum percentage of sulfur in the fuel.

% Sulfur (average): Record the average percentage of sulfur in the fuel.

% Ash (maximum): Record the maximum percentage of ash.

% Ash (average): Record the average percentage of ash.

Composition and Quantities of Combusted Waste: List the composition and quantity of combusted waste.

Section GG.8: Adsorber

The control device manufacturer's equipment specifications and recommended procedures may be submitted in place of this information.

Control Device ID/#: Enter the Control Device ID and number.

Identify all Emission Units and Control Equipment that Feed to Adsorber: Identify all emission units and control equipment that use the adsorber.

Identify Adsorbate: Identify the adsorbate. Identify any compound that were removed.

Identify Adsorbent: Indicate if the adsorbent is an activated carbon, activated alumina, silica gel, synthetic polymers, zeolite, or other. If other, specify.

Dimensions of Each Bed:

Thickness in Direction of Gas Flow: Record the thickness in direction of gas flow in inches (in).

Cross-Sectional Area: Record the area of the cross-section in square inches (in²).

Weight of Adsorbent per Bed: Record the weight of adsorbent per bed in pounds (lb).

Number of Beds: Enter the number of beds.

Type of Regeneration: Indicate if the regeneration is replacement, steam, or other. If other, specify.

Regeneration time: Record the regeneration time in minutes.

Method of Regeneration: Indicate if the method of regeneration is alternate use of beds, source shutdown, or other. If other, specify.

Time On-line Before Regeneration: Record the amount of time on-line before regeneration in minutes.

Section GG.9: Condenser

The control device manufacturer's equipment specifications and recommended procedures may be submitted in place of this information.

Control Device ID/#: Enter the Control Device ID and number.

Identify all Emission Units and Control Equipment that Feed to Condenser: Identify all emission units and control equipment that use the condenser.

Identify Type of Condenser: Indicate if the condenser is a spray tower, jet ejector, single-pass shell and tube, or multi-pass shell and tube. If multi-pass shell and tube, indicate number of passes.

Identify Type of Coolant: Indicate if the coolant is water, brine, liquid nitrogen, CFC/HFC, or other. If other, specify.

Coolant Temperature:

Inlet: Record the temperature of the inlet in °F.

Outlet: Record the temperature of the outlet in °F.

Coolant Liquid Flowrate: Record the coolant liquid flowrate in gallons per minute (gpm).

Coolant Gas Flowrate: Record the coolant gas flowrate in standard cubic feet per minute (scfm).

Condensing Surface Area: Record the area of the condensing surface, specify the units.

Outlet Gas Temperature: Record the outlet gas temperature in °F.

Outlet Gas Composition: Enter the composition of the outlet gas.

Section GG.10: SCR/SNCR

The control device manufacturer's equipment specifications and recommended procedures may be submitted in place of this information.

Control Device ID/#: Enter the Control Device ID and number.

Identify all Emission Units and Control Devices that Feed to SCR/SNCR: Identify all emission units and control equipment that use the SCR/SNCR.

Type: Identify if the unit is SCR or SNCR.

Gas Composition: Identify the composition of the gas.

Injection Grid Design: Describe the design of the injection grid.

Design Temperature Range: Record the minimum and maximum temperatures in °F.

Reagent: Identify the type of reagent. For each reagent listed, record the minimum and maximum injection rate in lb/hr.

Maximum Design Ammonia Slip:

For SCR only: Identify the composition, volume, weight and replacement schedule of the catalyst.

Section GG.11: Other Control Equipment

Control Device ID/#: Enter the Control Device ID and number.

Identify all emission units and control devices that feed to control equipment: Identify all emission units and control equipment that use the control equipment.

Type of control equipment: Provide a description and diagram, including dimensions, of the control equipment.

Section GG.12: Notes, Comments, and Explanations

Use this sheet provide additional notes, comments, or explanations on the information provided in Sections GG.1, GG.2, GG.3, GG.4, GG.5, GG.6, GG.7, GG.8, GG.9, GG.10, and GG.11.