



PUGET SOUND CLEAN AIR AGENCY

Additional Notice of Construction Application Requirements for

THERMAL OXIDIZERS, CATALYTIC OXIDIZERS

General

Equipment or Process Being Controlled [*Specify the source(s) of the contaminants 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 oxidizer - not necessarily the entire facility*]

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

Inlet Gas Stream Characteristics [*Pretreatment (dilution) is necessary if the waste gas stream heat content is >13 Btu/scf (>10 Btu/scf for catalytic oxidizers) with an oxygen concentration <20% by volume. Also, for safety reasons, concentrations in the ductwork should never exceed 25% of the lower explosive limit.*]

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 oxidizer*]

Temperature (°F) [*Specify the temperature of the waste gas going to the oxidizer in degrees Fahrenheit*]

Pollutant Concentrations (lb/hr or ppmv of each pollutant) [*Specify the pollutant concentrations going to the oxidizer in pounds per hour or parts per million by volume*]

Heat Content (Btu/scf) [*Specify the heat content of the waste gas going to the oxidizer in British thermal units per standard cubic foot*]

Oxygen (% by volume) [*Specify the oxygen content of the waste gas going to the oxidizer 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 oxidizer - not the serial number*]

Type of Oxidizer [*Specify simple, recuperative, regenerative, or catalytic. Most oxidizers use a heat exchanger recuperate heat from the exhaust to preheat the waste gases being fired. Regenerative systems first transfer the heat from the exhaust to a bed of other material which is used to preheat the waste gases being fired*]

Type of Fuel [*Specify natural gas or #2 fuel oil (diesel).*]

Rated Heat Input (Million Btu/hr) [*Specify the rated heat input of the natural gas going to the oxidizer - not the waste gas*]

Estimated Fuel Usage (Million cu ft/yr, thousand gal/yr) [*Estimate how many million cubic feet of natural gas, thousands of gallons of #2 fuel oil (diesel) will be burned annually. Alternatively, specify how many billion Btu/yr*]

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

Method Used to Design/Size the Oxidizer [*Specify the method used to select this design and size of scrubber. 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*]

For Noncatalytic Oxidizers:

Combustion Chamber Temperature (°F) [*Specify the mean combustion chamber temperature in degrees Fahrenheit*]

Combustion Chamber Volume (ft³) [*Specify the volume of the combustion chamber in cubic feet.*]

Average Residence Time in Combustion Chamber (seconds) [*Specify the average time spent by molecules of waste gas in the combustion chamber*]

For Catalytic Oxidizers:

Catalyst Material [*Specify the type of catalyst (for example, platinum, palladium, manganese)*]

Catalyst Operating Temperature (°F) [*Specify the design operating temperature of the catalyst material in degrees Fahrenheit.*]

Catalyst Volume (ft³) [*Specify the volume of catalyst material in cubic feet.*]

Space Velocity (/hr) [*Specify the gas flow rate per unit volume of catalyst. This is equal to (acfm)(60 min/hr)/(ft³ of catalyst).*]

Method Used to Prevent Plugging of Catalyst: [*Specify if any equipment used to remove dust, lint, chaff, etc.*]

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

Methods Used to Regulate Operating Temperature [*Specify the locations of thermocouples and describe the operation of temperature controller and any interlocks that prevent the process from operating without the thermal oxidizer. Also specify the records to be kept of operating temperatures*]

Describe Preventive Maintenance [*Specify the inspection frequency for visible emissions, catalyst activity measurements, burner tune-ups, etc. Also specify the records to be kept (e.g., records of all inspections and repairs) and any spare parts to be kept on-site*]