

GLOSSARY

Act:

The federal Clean Air Act as amended in 1990.

Attainment Area:

An area to be considered to have air quality as good as or better than the national ambient air quality standards as defined in the Clean Air Act. An area may be an attainment area for one pollutant and a non-attainment area for others.

BACT:

Best Available Control Technology. An emission control system, change in work practices or processes which will result in the maximum reduction in each pollutant from a construction project. This limitation is based on the maximum degree of emission reduction which (considering energy, environmental, and economic impacts and other costs) is achievable through application processes and available methods, systems, and techniques. BACT is required for sources undergoing major permit review (10 CSR 10-6.060 – Section 8) for sources to be located in attainment areas.

Basic State Installation:

A facility which emits or has the potential to emit greater than *de minimis* but less than the major level of any criteria pollutant or is subject to any limitation, standard, or other requirement (regardless of emission rate) under section 111 or 112 (MACT sources). An exception to this is sources subject only to 112(r) of the Clean Air Act and that do not meet the criteria for **Part 70 installations**.

Bottleneck:

A physical limitation which reduces the throughput of a process or piece of equipment to less than the manufacturer's rated capacity. It can be either upstream or downstream of the process. When maximum design rate is reduced for bottlenecks (see **MHDR**, following) the application must document how the bottleneck reduces process throughput.

Example: A paint booth is located in a furniture manufacturing plant. If the painting equipment is capable of applying more coatings per hour than is needed to paint the maximum output of the manufacturing plant, then the upstream production rate is a bottleneck and determines the paint booth's maximum design rate.

Breathing Loss:

Breathing loss occurs daily when a liquid is stored in a tank. Breathing loss for a product such as gasoline is due to evaporation and barometric pressure and/or temperature fluctuations. The frequency with which gasoline is withdrawn from the tank, allowing fresh air to enter and enhance evaporation, also has a major effect on the quantity of emissions. Also called standing loss.

CAAA:

The federal Clean Air Act as Amended in 1990.

CAS #:

Chemical Abstract Service Registry Number. This number is used for convenience because chemicals can have a variety of names.

CFR:

Code of Federal Regulations. A series of volumes where federal regulations have been codified (e.g., Title 40 = Protection of the Environment).

Capture Efficiency:

This represents the amount of the individual pollutant, expressed in percent, which is routed by the control system through the control device or devices. In other words, this is the portion of an emission point or unit's pollutants which goes through the control device. Capture efficiency can vary by pollutant.

CO:

Carbon Monoxide.

Control Device:

Equipment or process used to remove or prevent air contaminants from being emitted from an air pollution generating process.

Control Efficiency:

The portion of an individual air pollutant which a control device prevents from escaping to the atmosphere, usually expressed in percent.

Control System:

The system which collects and controls the pollutant emissions from a process or installation. The system includes the control device (s) and such things as hoods, enclosures, etc. that capture and direct emissions to a control device or devices.

Criteria Pollutants:

The pollutants regulated by the Clean Air Act under Section 108 are:

PM ₁₀	-	Particulate Matter less than 10 microns in diameter
NO _x	-	Nitrogen Oxide Compounds
SO _x	-	Sulfur Oxide Compounds
VOC	-	Volatile Organic Compounds
Lead	-	Lead (Pb)
CO	-	Carbon Monoxide

CSR:

Code of State Regulations

***De minimis* Levels:**

The regulatory level of emissions from an installation at which the installation is considered significant.

Emission Factor:

An average value that relates the quantity of a pollutant released to the atmosphere with the amount of activity associated with the process releasing that pollutant. Such factors can be used to estimate the emissions from various sources generating air pollution. An emission factor for natural gas combustion is 3.0 lbs of PM₁₀ per Million Cubic Feet (MMCF) of gas burned. An emission factor for a haul road can be 2.7 lbs. of PM₁₀ per Vehicle Miles Traveled (VMT). Emissions factors are frequently used to estimate emissions when reviewing an application.

EIQ:

Emission Inventory Questionnaire. This questionnaire provides air pollution information about individual facilities, and their emissions. This information is used by the ACP to evaluate the emission history of specific facilities during construction permit review, and to provide a basis for general air pollution planning work.

Emission Point:

Any specific point or area where an air pollutant is released from a process or operation into the ambient air. An emission point may have more than one **Emission Unit**. See the next item.

Example: Suppose the first emission point at a facility is a 30 foot stack which emits pollutants from a boiler, the stack rather than the boiler could be labeled EP1. The boiler would be the process producing air pollutants, so an appropriate Source Classification Code (SCC) would be chosen to reflect that the boiler is one process under this emission point. See discussion of **SCC**, following.

Emission Unit:

Any part or activity of an installation that emits or has the potential to emit any regulated air pollutant or any pollutant listed under section 112(b) of the Act (10 CSR 10-6.020). For the purposes of the construction permit application, an emission unit is a sub-point of an emission point from the application.

For example, Facility B lists Emission Point 1 as a stack that emits pollutants from two boilers and a kiln. The three emission units are boiler 1, boiler 2, and the kiln.

EPA:

The United States Environmental Protection Agency

Facility:

For the purposes of this document only, facility and installation are interchangeable terms. (see **Installation** for further information).

Federal Register:

A daily publication of the federal government that contains, among other things, proposed and final rules.

FIPS:

Federal Information Procedures System. A standard, three-digit number assigned to each county of each state in the nation.

Hazardous Air Pollutant (HAP):

Any of the air pollutants listed in 10 CSR 10-6.020(3)(C). A list of these substances can be found in the document titled “Table of Hazardous Air Pollutants and Screening Model Action Levels”.

Intermediate State Installation:

A facility that would meet the emissions criteria for a **Part 70 installation**, except for the imposition of voluntary permit conditions proposed in the operating permit application or construction permit, that reduce its potential emissions below Part 70 levels.

Installation:

All emission points/unit operations that belong to the same industrial grouping (the same first two (2)-digits of the SIC code) that are located on one (1) or more contiguous or adjacent properties and are under the control of the same person (or persons under common control). This definition includes any activities that result in fugitive emissions, and any marine vessels’ emissions while docked at the installation. (See 10 CSR 10 6.020 for regulatory definition)

LAER:

Lowest Achievable Emission Rate. Under the Clean Air Act, this is the rate of emissions that reflects (a) the most stringent emission limitations which is contained in the implementation plan of any state for such source unless the owner or operator of the proposed source demonstrates such limitations are not achievable; or (b) the most stringent emission limitation achieved in practice by the source’s category. Application of this term does not permit a proposed new or modified source to emit pollutants in excess of existing new source performance standards.

MACT:

Maximum Achievable Control Technology (standard). In the 1990 CAAA, Congress directed the EPA to reduce emissions of HAPs from several industries specified in the Act. The EPA has developed and promulgated standards for many of these industries and published them. Each standard specifies the way that HAP emissions are to be reduced by the affected industry and prescribes what sources must do to comply. The promulgated MACT standards are found in 40 CFR Part 63. Development and implementation of MACT standards will continue well beyond year 2000.

MHDR (Maximum Hourly Design Rate):

Maximum Hourly Design Rate is the maximum throughput that could be processed in one hour of continuous operation by the equipment at this emission point. The throughput and MHDR must be expressed in the same SCC (Source Classification Code) units. If specific equipment information on the MHDR is not available, contact the APCP for alternative methods to estimate the MHDR. In most cases, MHDR will be the manufacturer’s rated capacity, but if there are physical bottlenecks that limit process throughput, these may reduce MHDR.

Example: Suppose the maximum capacity of a dump pit at a country elevator is 5,000 bushels an hour and wheat is the typical grain processed. Because the SCC units for grain receiving are in tons, the MHDR must be stated in terms of tons, not bushels.
 $5,000 \text{ bushels} \times 60 \text{ lbs/bushel} \div 2,000 \text{ lbs/ton} = 150 \text{ tons MHDR.}$

Major Source:

In an attainment area a major source is a source having the potential to emit annually either 100 tons of any criteria pollutant, 10 tons of any single HAP or 25 tons of all HAPs combined. In nonattainment areas the major thresholds can vary.

Molecular Weight:

The sum of the atomic weight of the constituent elements.

Example: The molecular weight of methane (CH₄) is $12.011 + 4(1.0079) = 16.0426$ grams. This follows from the periodic table observation that the atomic weights of carbon and hydrogen are 12.011 and 1.0079 grams, respectively.

NAAQS:

National Ambient Air Quality Standards. Air quality standards established by EPA that apply to outside air throughout the country.

NESHAP:

National Emission Standard for Hazardous Air Pollutant. These are standards promulgated by the EPA for certain industries specifying how the designated industries must reduce emissions of HAPs. The promulgated standards are found in 40 CFR Part 61. NESHAPs predate MACT standards and usually are less stringent.

Nonattainment Area:

Geographic area that does not meet one or more of the National Ambient Air Quality Standards for the criteria pollutants designated in the Clean Air Act.

NO_x:

Nitrogen Oxide Compounds

NSPS:

New Source Performance Standard. Section 111 of the Act required the EPA to establish these standards which are published in 40 CFR Part 60. Certain types of equipment/processes are required to meet specified emission standards and must conduct performance tests to demonstrate they meet emission limits. The standards have applicability criteria which always include a date of construction or reconstruction and often include a capacity floor. Many also have record keeping requirements.

Part 70 Installation:

A facility that meets either a source category or the emission criteria in 10 CSR 10-6.065(1)(D). Part 70 installations are also known as major sources. The emission criteria to be classified Part 70 is either 100 tons per year potential emissions of any criteria pollutant, 10 tons per year potential emissions of any single HAP, or 25 tons per year of all HAPs combined. See discussion of **Potential Emissions**, following.

Plant #:

This is a four-digit identification number assigned to a facility by the APCP. Each facility within a county is assigned this unique identification number. The lowest plant number in a county will always be 0001 but the highest will be dependent upon the number of facilities in the county.

PM₁₀ (Particulate Matter less than ten microns):

Particulate Matter with an aerodynamic diameter of less than 10 microns, a criteria air pollutant. Examples include dust, smoke, fumes and mists. If an emission factor is not listed for PM₁₀, usually an emission factor can be estimated as 1/2 of the TSP (Total Suspended Particulate) emission factor.

PPM / PPB:

Parts per million / parts per billion, a way of expressing concentrations of pollutants in air, water, soil, biological tissues, food, or other products.

Potential Emissions:

The emission rates of any pollutant at maximum design capacity. Annual potential shall be based on the maximum annual rated capacity of the installation assuming continuous year-round operation. Federally enforceable permit conditions on the type of material combusted or processed, operating rates, hours of operation or the application of air pollution control equipment shall be used in determining the annual potential. Secondary emissions (emissions which occur or would occur as a result of the construction or operation of the installation or major modification but do not come from the installation or modification itself) do not count in determining annual potential.

Potential Emissions - Uncontrolled:

The amount of pollutants that could be emitted by a facility if all equipment is operated at the maximum hourly design rate for 24 hours per day, 7 days a week, 52 weeks per year (8760 hours) removing the effect of any pollution control devices, such as a baghouse, being taken into account.

PSIA:

Pressure expressed in Pounds per square inch, absolute.

Reasonably Available Control Technology (RACT):

The lowest emission limit that a particular source is capable of meeting by the application of control technology that is both reasonably available, as well as technologically and economically feasible. RACT usually is applied to existing sources in nonattainment areas.

Responsible Official:

Includes one (1) of the following:

- A. The president, secretary, treasurer or vice-president of a corporation in charge of a principal business function, or any other person who performs similar policy and decision-making functions for the corporation or a duly authorized representative of this person if the representative is responsible for the overall operation of one (1) or more manufacturing, production, or operating facilities applying or subject to a permit and either-
 - (I) The facilities employ more than two hundred and fifty (250) persons or have a gross annual sales or expenditures exceeding twenty-five million dollars (in second quarter 1980 dollars); or
 - (II) The delegation of authority to his representative is approved in advance by the permitting authority.
- B. A general partner in a partnership or the proprietor in a sole proprietorship.

- C. Either a principal executive officer or a ranking elected official in a municipality, state, federal, or other public agency. For the purpose of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the operations of a principal geographic unit of the agency; or
- D. The designated representative of an affected source insofar as actions, standards, requirements or prohibitions under Title IV of the Clean Air Act or the regulations promulgated under the Act are concerned and the designated representative for any purposes under Part 70. (10 CSR 10-6.020)

Risk Assessment Level (RAL):

The risk assessment level is referenced in 10 CSR 10-6.060 (12) (J) *Air Quality Analysis for Hazardous Air Pollutants*. RALs are typically denoted in units of micrograms per cubic meter.

RVP:

Reid Vapor Pressure. A measure of the volatility of petroleum products, such as gasoline, typically reported in pounds per square inch

SCC:

Source Classification Code. An eight-digit number associated with a unique process from which air pollutants are emitted. This is a useful way for emission factor information to be distributed. For Internet availability of emission factors associated with SCC's

Screen Modeling Action Level (SMAL)

Screening Model Action Level (SMAL) is the emission threshold level for modeling HAPs, as referenced in the Missouri Code of State Regulations (CSR) 10 CSR 10-6.060 (12) (J) *Air Quality Analysis for Hazardous Air Pollutants*. The SMAL is also the emission threshold level for construction permit exemptions as referenced in 10 CSR 10-6.061 (3) (A) 3. B. Units are in tons per year except where noted.

SIC:

Standard Industrial Classification (four digits). This is a designation system established by the federal government. The Standard Industrial Classification was developed for use in the classification of establishments by type of activity in which they are engaged; for purposes of facilitating the collection, presentation, and analysis of data relating to establishments; and for promoting uniformity and comparability in the presentation of statistical data collected by various agencies of the United States Government, State agencies, trade associations, and private research organizations. The SIC for *establishments* differ from a classification for *enterprises* (companies) or products. An enterprise consists of all establishments having more than 50% common direct or indirect ownership. The SIC is intended to cover the entire field of economic activities: agriculture, forestry, fishing, hunting, and trapping; mining; construction; manufacturing; transportation, communication, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; personal, business, professional, repair, recreation, and other services; and public administration.

State Implementation Plan (SIP):

EPA approved state plans for establishment, regulation, and enforcement of air pollution standards.

SO_x:

Sulfur Oxide Compounds, a criteria air pollutant.

Toxic Air Pollutant:

For the purposes of the construction permit application, toxic and **Hazardous Air Pollutant (HAP)** are interchangeable terms.

True Vapor Pressure:

The equilibrium partial pressure exerted by a volatile organic liquid, as defined by ASTM-D 2879 or as obtained from standard reference texts, typically expressed in units of pounds per square inch.

TSP:

Total Suspended Particulate. Total amount of fine particles (dust) suspended in the air. For construction permit purposes the APCP now determines permit applicability and reviews air pollution impacts using PM₁₀.

Vapor Pressure:

When liquids evaporate, gas vapor forms at the surface of the liquid and escapes. In a closed container, the vapor accumulates and creates pressure called vapor pressure. Each liquid exerts its own vapor pressure at a given temperature. As temperature increases, more vapor forms and vapor pressure increases.

VMT:

Vehicle Miles Traveled.

VOC:

Volatile Organic Compounds, a criteria air pollutant. These are compounds that are carbon based. Many VOC compounds are also HAPS.

Working Loss:

Evaporative loss occurring as a result of the filling and the withdrawal of liquid to and from a storage tank. Also called withdrawal loss.