

Texas Chapter 117 - Control of Air Pollution From Nitrogen Compounds

SUBCHAPTER A: DEFINITIONS

As adopted by TCEQ May 23, 2007 effective June 14, 2007 (7-27).

Submitted to EPA May 30, 2007.

Approved by EPA December 3, 2008 (73 FR 73562) effective January 2, 2009 (TXd97).

Outline:

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SUBCHAPTER A: DEFINITIONS

§117.10

STATUTORY AUTHORITY

The new section is adopted under Texas Water Code, §5.102, concerning General Powers, §5.103, concerning Rules, and §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the Texas Water Code. In addition, the section is adopted under Texas Health and Safety Code, §382.002, concerning Policy and Purpose, which states the policy and purpose of the State of Texas and the Texas Clean Air Act; §382.011, concerning General Powers and Duties, which provides the commission with the authority to establish the level of quality to be maintained in the state's air and the authority to control the quality of the state's air; §382.012, concerning State Air Control Plan, which requires the commission to develop plans for protection of the state's air; §382.014, concerning Emission Inventory, which authorizes the commission to require submission information relating to emissions of air contaminants; §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe requirements for owners or operators of sources to make and maintain records of emissions measurements; §382.017, concerning Rules, which provides the commission the authority to adopt rules consistent with the policy and purposes of the Texas Clean Air Act; §382.021, concerning Sampling Methods and Procedures, which authorizes the commission to prescribe the sampling methods and procedures; and §382.051(d), concerning Permitting Authority of Commission Rules, which authorizes the commission to adopt rules as necessary to comply with changes in federal law or regulations applicable to permits under Chapter 382. In addition, the new section is adopted under federal mandates contained in 42 United States Code, §§7401 *et seq.*, which require states to adopt pollution control measures in order to reach specific air quality standards in particular areas of the state.

The adopted section implements Texas Health and Safety Code, §§382.002, 382.011, 382.012, 382.014, 382.016, 382.017, 382.021, and 382.051(d).

§117.10. Definitions.

Unless specifically defined in the Texas Clean Air Act or Chapter 101 of this title (relating to General Air Quality Rules), the terms in this chapter have the meanings commonly used in the field of air pollution control. Additionally, the following meanings apply, unless the context clearly indicates otherwise. Additional definitions for terms used in this chapter are found in §3.2 and §101.1 of this title (relating to Definitions).

(1) **Annual capacity factor**--The total annual fuel consumed by a unit divided by the fuel that could be consumed by the unit if operated at its maximum rated capacity for 8,760 hours per year.

(2) **Applicable ozone nonattainment area**--The following areas, as designated under the 1990 Federal Clean Air Act Amendments.

(A) Beaumont-Port Arthur ozone nonattainment area - An area consisting of Hardin, Jefferson, and Orange Counties.

(B) Dallas-Fort Worth ozone nonattainment area - An area consisting of Collin, Dallas, Denton, and Tarrant Counties.

(C) Dallas-Fort Worth eight-hour ozone nonattainment area - An area consisting of Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties.

(D) Houston-Galveston-Brazoria ozone nonattainment area - An area consisting of Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties.

(3) **Auxiliary steam boiler**--Any combustion equipment within an electric power generating system, as defined in this section, that is used to produce steam for purposes other than generating electricity. An auxiliary steam boiler produces steam as a replacement for steam produced by another piece of equipment that is not operating due to planned or unplanned maintenance.

(4) **Average activity level for fuel oil firing**--The product of an electric utility unit's maximum rated capacity for fuel oil firing and the average annual capacity factor for fuel oil firing for the period from January 1, 1990, to December 31, 1993.

(5) **Block one-hour average**--An hourly average of data, collected starting at the beginning of each clock hour of the day and continuing until the start of the next clock hour.

(6) **Boiler**--Any combustion equipment fired with solid, liquid, and/or gaseous fuel used to produce steam or to heat water.

(7) **Btu**--British thermal unit.

(8) **Chemical processing gas turbine**--A gas turbine that vents its exhaust gases into the operating stream of a chemical process.

(9) **Continuous emissions monitoring system (CEMS)**--The total equipment necessary for the continuous determination and recordkeeping of process gas concentrations and emission rates in units of the applicable emission limitation.

(10) **Daily**--A calendar day starting at midnight and continuing until midnight the following day.

(11) **Diesel engine**--A compression-ignited two- or four-stroke engine that liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition.

(12) **Duct burner**--A unit that combusts fuel and that is placed in the exhaust duct from another unit (such as a stationary gas turbine, stationary internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases.

(13) **Electric generating facility (EGF)**--A unit that generates electric energy for compensation and is owned or operated by a person doing business in this state, including a municipal corporation, electric cooperative, or river authority.

(14) **Electric power generating system**--One electric power generating system consists of either:

(A) for the purposes of Subchapter C of this chapter (relating to Combustion Control at Major Utility Electric Generation Sources in Ozone Nonattainment Areas), all boilers, auxiliary steam boilers, and stationary gas turbines (including duct burners used in turbine exhaust ducts) at electric generating facility (EGF) accounts that generate electric energy for compensation; are owned or operated by an electric cooperative, municipality, river authority, public utility, or a Public Utility Commission of Texas regulated utility, or any of its successors; and are entirely located in one of the following ozone nonattainment areas:

(i) Beaumont-Port Arthur;

(ii) Dallas-Fort Worth;

(iii) Dallas-Fort Worth eight-hour; or

(iv) Houston-Galveston-Brazoria;

(B) for the purposes of Subchapter E, Division 1 of this chapter (relating to Utility Electric Generation in East and Central Texas), all boilers, auxiliary steam boilers, and stationary gas turbines at EGF accounts that generate electric energy for compensation; are owned or operated by an electric cooperative, independent power producer, municipality, river authority, or public utility, or any of its successors; and are located in Atascosa, Bastrop, Bexar, Brazos, Calhoun, Cherokee, Fannin, Fayette, Freestone, Goliad, Gregg, Grimes, Harrison, Henderson, Hood, Hunt, Lamar, Limestone, Marion, McLennan, Milam, Morris, Nueces, Parker, Red River, Robertson, Rusk, Titus, Travis, Victoria, or Wharton County; or

(C) for the purposes of Subchapter B of this chapter (relating to Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas), all units in the Houston-Galveston-Brazoria ozone nonattainment area that generate electricity but do not meet the conditions specified in subparagraph (A) of this paragraph, including, but not limited to, cogeneration units and units owned by independent power producers.

(15) **Emergency situation**--As follows.

(A) An emergency situation is any of the following:

(i) an unforeseen electrical power failure from the serving electric power generating system;

(ii) the period of time that an emergency notice, as defined in *ERCOT Protocols, Section 2: Definitions and Acronyms* (April 25, 2006), issued by the Electric Reliability Council of Texas, Inc. (ERCOT) as specified in *ERCOT Protocols, Section 5: Dispatch* (April 26, 2006), is applicable to the serving electric power generating system. The emergency situation is considered to end upon expiration of the emergency notice issued by ERCOT;

(iii) an unforeseen failure of on-site electrical transmission equipment (e.g., a transformer);

(iv) an unforeseen failure of natural gas service;

(v) an unforeseen flood or fire, or a life-threatening situation; or

(vi) operation of emergency generators for Federal Aviation Administration licensed airports, military airports, or manned space flight control centers for the purposes of providing power in anticipation of a power failure due to severe storm activity.

(B) An emergency situation does not include operation for purposes of supplying power for distribution to the electric grid, operation for training purposes, or other foreseeable events.

(16) **Functionally identical replacement**--A unit that performs the same function as the existing unit that it replaces, with the condition that the unit replaced must be physically removed or rendered permanently inoperable before the unit replacing it is placed into service.

(17) **Heat input**--The chemical heat released due to fuel combustion in a unit, using the higher heating value of the fuel. This does not include the sensible heat of the incoming combustion air. In the case of carbon monoxide (CO) boilers, the heat input includes the enthalpy of all regenerator off-gases and the heat of combustion of the incoming CO and of the auxiliary fuel. The enthalpy change of the fluid catalytic cracking unit regenerator off-gases refers to the total heat content of the gas at the temperature it enters the CO boiler, referring to the heat content at 60 degrees Fahrenheit, as being zero.

(18) **Heat treat furnace**--A furnace that is used in the manufacturing, casting, or forging of metal to heat the metal so as to produce specific physical properties in that metal.

(19) **High heat release rate**--A ratio of boiler design heat input to firebox volume (as bounded by the front firebox wall where the burner is located, the firebox side waterwall, and extending to the level just below or in front of the first row of convection pass tubes) greater than or equal to 70,000 British thermal units per hour per cubic foot.

(20) **Horsepower rating**--The engine manufacturer's maximum continuous load rating at the lesser of the engine or driven equipment's maximum published continuous speed.

(21) **Incinerator**--As follows.

(A) For the purposes of this chapter, the term "incinerator" includes both of the following:

(i) a control device that combusts or oxidizes gases or vapors (e.g., thermal oxidizer, catalytic oxidizer, vapor combustor); and

(ii) an incinerator as defined in §101.1 of this title (relating to Definitions).

(B) The term "incinerator" does not apply to boilers or process heaters as defined in this section, or to flares as defined in §101.1 of this title.

(22) **Industrial boiler**--Any combustion equipment, not including utility or auxiliary steam boilers as defined in this section, fired with liquid, solid, or gaseous fuel, that is used to produce steam or to heat water.

(23) **International Standards Organization (ISO) conditions**--ISO standard conditions of 59 degrees Fahrenheit, 1.0 atmosphere, and 60% relative humidity.

(24) **Large utility system**--All boilers, auxiliary steam boilers, and stationary gas turbines that are located in the Dallas-Fort Worth or the Dallas-Fort Worth eight-hour ozone nonattainment area, and were part of one electric power generating system on January 1, 2000, that had a combined electric generating capacity equal to or greater than 500 megawatts.

(25) **Lean-burn engine**--A spark-ignited or compression-ignited, Otto cycle, diesel cycle, or two-stroke engine that is not capable of being operated with an exhaust stream oxygen concentration equal to or less than 0.5% by volume, as originally designed by the manufacturer.

(26) **Low annual capacity factor boiler, process heater, or gas turbine supplemental waste heat recovery unit**--An industrial, commercial, or institutional boiler; process heater; or gas turbine supplemental waste heat recovery unit with maximum rated capacity:

(A) greater than or equal to 40 million British thermal units per hour (MMBtu/hr), but less than 100 MMBtu/hr and an annual heat input less than or equal to $2.8 (10^{11})$ British thermal units per year (Btu/yr), based on a rolling 12-month average; or

(B) greater than or equal to 100 MMBtu/hr and an annual heat input less than or equal to 2.2 (10¹¹) Btu/yr, based on a rolling 12-month average.

(27) Low annual capacity factor stationary gas turbine or stationary internal combustion engine--A stationary gas turbine or stationary internal combustion engine that is demonstrated to operate less than 850 hours per year, based on a rolling 12-month average.

(28) Low heat release rate--A ratio of boiler design heat input to firebox volume less than 70,000 British thermal units per hour per cubic foot.

(29) Major source--Any stationary source or group of sources located within a contiguous area and under common control that emits or has the potential to emit:

(A) at least 50 tons per year (tpy) of nitrogen oxides (NO_x) and is located in the Beaumont-Port Arthur ozone nonattainment area;

(B) at least 50 tpy of NO_x and is located in the Dallas-Fort Worth or Dallas-Fort Worth eight-hour ozone nonattainment area;

(C) at least 25 tpy of NO_x and is located in the Houston-Galveston-Brazoria ozone nonattainment area; or

(D) the amount specified in the major source definition contained in the Prevention of Significant Deterioration of Air Quality regulations promulgated by the United States Environmental Protection Agency in 40 Code of Federal Regulations §52.21 as amended June 3, 1993 (effective June 3, 1994), and is located in Atascosa, Bastrop, Bexar, Brazos, Calhoun, Cherokee, Comal, Fannin, Fayette, Freestone, Goliad, Gregg, Grimes, Harrison, Hays, Henderson, Hood, Hunt, Lamar, Limestone, Marion, McLennan, Milam, Morris, Nueces, Red River, Robertson, Rusk, Titus, Travis, Victoria, or Wharton County.

(30) **Maximum rated capacity**--The maximum design heat input, expressed in million British thermal units per hour, unless:

(A) the unit is a boiler, utility boiler, or process heater operated above the maximum design heat input (as averaged over any one-hour period), in which case the maximum operated hourly rate must be used as the maximum rated capacity; or

(B) the unit is limited by operating restriction or permit condition to a lesser heat input, in which case the limiting condition must be used as the maximum rated capacity; or

(C) the unit is a stationary gas turbine, in which case the manufacturer's rated heat consumption at the International Standards Organization (ISO) conditions must be used as the maximum rated capacity, unless limited by permit condition to a lesser heat input, in which case the limiting condition must be used as the maximum rated capacity; or

(D) the unit is a stationary, internal combustion engine, in which case the manufacturer's rated heat consumption at Diesel Equipment Manufacturer's Association or ISO conditions must be used as the maximum rated capacity, unless limited by permit condition to a lesser heat input, in which case the limiting condition must be used as the maximum rated capacity.

(31) **Megawatt (MW) rating**--The continuous MW output rating or mechanical equivalent by a gas turbine manufacturer at International Standards Organization conditions, without consideration to the increase in gas turbine shaft output and/or the decrease in gas turbine fuel consumption by the addition of energy recovered from exhaust heat.

(32) **Nitric acid**--Nitric acid that is 30% to 100% in strength.

(33) **Nitric acid production unit**--Any source producing nitric acid by either the pressure or atmospheric pressure process.

(34) **Nitrogen oxides (NO_x)**--The sum of the nitric oxide and nitrogen dioxide in the flue gas or emission point, collectively expressed as nitrogen dioxide.

(35) **Parts per million by volume (ppmv)**--All ppmv emission specifications specified in this chapter are referenced on a dry basis. When required to adjust pollutant concentrations to a specified oxygen (O₂) correction basis, the following equation must be used.

<p>Figure: 30 TAC §117.10(35)

$$C_{adj} = C_{meas} \times \frac{(20.9\% - \%O_2 \text{ rule})}{(20.9\% - \%O_2 \text{ meas})}$$

Where:

- C_{adj} = pollutant concentration adjusted to percent O₂, dry basis, specified in applicable rule, in units of applicable standard (e.g., parts per million by volume);
- C_{meas} = pollutant concentration measured on a dry basis, in units of applicable standard;
- 20.9% = O₂ concentration in air, percent;
- %O₂ rule = O₂ basis for adjustment specified in applicable rule (e.g., 3.0% for boilers and process heaters) on a dry basis, percent; and
- %O₂ meas = O₂ concentration measured simultaneous with pollutant concentration, percent.

(36) **Peaking gas turbine or engine**--A stationary gas turbine or engine used intermittently to produce energy on a demand basis.

(37) **Plant-wide emission rate**--The ratio of the total actual nitrogen oxides mass emissions rate discharged into the atmosphere from affected units at a major source when firing at their maximum rated capacity to the total maximum rated capacities for those units.

(38) **Plant-wide emission specification**--The ratio of the total allowable nitrogen oxides mass emissions rate dischargeable into the atmosphere from affected units at a major source when firing at their maximum rated capacity to the total maximum rated capacities for those units.

(39) **Predictive emissions monitoring system (PEMS)**--The total equipment necessary for the continuous determination and recordkeeping of process gas concentrations and emission rates using process or control device operating parameter measurements and a conversion equation or computer program to produce results in units of the applicable emission limitation.

(40) **Process heater**--Any combustion equipment fired with liquid and/or gaseous fuel that is used to transfer heat from combustion gases to a process fluid, superheated steam, or water for the purpose of heating the process fluid or causing a chemical reaction. The term "process heater" does not apply to any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment, or to boilers as defined in this section.

(41) **Pyrolysis reactor**--A unit that produces hydrocarbon products from the endothermic cracking of feedstocks such as ethane, propane, butane, and naphtha using combustion to provide indirect heating for the cracking process.

(42) **Reheat furnace**--A furnace that is used in the manufacturing, casting, or forging of metal to raise the temperature of that metal in the course of processing to a temperature suitable for hot working or shaping.

(43) **Rich-burn engine**--A spark-ignited, Otto cycle, four-stroke, naturally aspirated or turbocharged engine that is capable of being operated with an exhaust stream oxygen concentration equal to or less than 0.5% by volume, as originally designed by the manufacturer.

(44) **Small utility system**--All boilers, auxiliary steam boilers, and stationary gas turbines that are located in the Dallas-Fort Worth or the Dallas-Fort Worth eight-hour ozone nonattainment area, and were part of one electric power generating system on January 1, 2000, that had a combined electric generating capacity less than 500 megawatts.

(45) **Stationary gas turbine**--Any gas turbine system that is gas and/or liquid fuel fired with or without power augmentation. This unit is either attached to a foundation or is portable equipment operated at a specific minor or major source for more than 90 days in any 12-month period. Two or more gas turbines powering one shaft must be treated as one unit.

(46) **Stationary internal combustion engine**--A reciprocating engine that remains or will remain at a location (a single site at a building, structure, facility, or installation) for more than 12 consecutive months. Included in this definition is any engine that, by itself or in or on a piece of equipment, is portable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine being replaced is included in calculating the consecutive residence time period. An engine is considered stationary if it is removed from one location for a period and then returned to the same location in an attempt to circumvent the consecutive residence time requirement. Nonroad engines, as defined in 40 Code of Federal Regulations §89.2, are not considered stationary for the purposes of this chapter.

(47) **System-wide emission rate**--The ratio of the total actual nitrogen oxides mass emissions rate discharged into the atmosphere from affected units in an electric power generating system or portion thereof located within a single ozone nonattainment area when firing at their maximum rated capacity to the total maximum rated capacities for those units. For fuel oil firing, average activity levels must be used in lieu of maximum rated capacities for the purpose of calculating the system-wide emission rate.

(48) **System-wide emission specification**--The ratio of the total allowable nitrogen oxides mass emissions rate dischargeable into the atmosphere from affected units in an electric power generating system or portion thereof located within a single ozone nonattainment area when firing at their maximum rated capacity to the total maximum rated capacities for those units. For fuel oil firing, average activity levels must be used in lieu of maximum rated capacities for the purpose of calculating the system-wide emission specification.

(49) **Thirty-day rolling average**--An average, calculated for each day that fuel is combusted in a unit, of all the hourly emissions data for the preceding 30 days that fuel was combusted in the unit.

(50) **Twenty-four hour rolling average**--An average, calculated for each hour that fuel is combusted (or acid is produced, for a nitric or adipic acid production unit), of all the hourly emissions data for the preceding 24 hours that fuel was combusted in the unit.

(51) **Unit**--A unit consists of either:

(A) for the purposes of §§117.105, 117.205, 117.305, 117.1005, 117.1105, and 117.1205 of this title (relating to Emission Specifications for Reasonably Available Control Technology (RACT)) and each requirement of this chapter associated with §§117.105, 117.205, 117.305, 117.1005, 117.1105, and 117.1205 of this title, any boiler, process heater, stationary gas turbine, or stationary internal combustion engine, as defined in this section;

(B) for the purposes of §§117.110, 117.210, 117.310, 117.1010, 117.1110, and 117.1210 of this title (relating to Emission Specifications for Attainment Demonstration) and each requirement of this chapter associated with §§117.110, 117.210, 117.310, 117.1010, 117.1110, and 117.1210 of this title, any boiler, process heater, stationary gas turbine, or stationary internal combustion engine, as defined in this section, or any other stationary source of nitrogen oxides (NO_x) at a major source, as defined in this section;

(C) for the purposes of §117.2010 of this title (relating to Emission Specifications) and each requirement of this chapter associated with §117.2010 of this title, any boiler, process heater, stationary gas turbine (including any duct burner in the turbine exhaust duct), or stationary internal combustion engine, as defined in this section;

(D) for the purposes of §117.2110 of this title (relating to Emission Specifications for Eight-Hour Attainment Demonstration) and each requirement of this chapter associated with §117.2110 of this title, any stationary internal combustion engine, as defined in this section;

(E) for the purposes of §117.3310 of this title (relating to Emission Specifications for Eight-Hour Attainment Demonstration) and each requirement of this chapter

associated with §117.3310 of this title, any stationary internal combustion engine, as defined in this section; or

(F) for the purposes of §117.410 and §117.1310 of this title (relating to Emission Specifications for Eight-Hour Attainment Demonstration) and each requirement of this chapter associated with §117.410 and §117.1310 of this title, any boiler, process heater, stationary gas turbine, or stationary internal combustion engine, as defined in this section, or any other stationary source of NO_x at a major source, as defined in this section.

(52) **Utility boiler**--Any combustion equipment owned or operated by an electric cooperative, municipality, river authority, public utility, or Public Utility Commission of Texas regulated utility, fired with solid, liquid, and/or gaseous fuel, used to produce steam for the purpose of generating electricity. Stationary gas turbines, including any associated duct burners and unfired waste heat boilers, are not considered to be utility boilers.

(53) **Wood**--Wood, wood residue, bark, or any derivative fuel or residue thereof in any form, including, but not limited to, sawdust, sander dust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.