

**RULE 2012 PROTOCOL-  
ATTACHMENT F**

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**DEFINITIONS**



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## DEFINITIONS

- (1) **AFTERBURNERS**, also called **VAPOR INCINERATORS**, are air pollution control devices in which combustion converts the combustible materials in gaseous effluents to carbon dioxide and water.
- (2) **ANNUAL PERMIT EMISSIONS PROGRAM (APEP)** is the annual facility permit compliance reporting, review, and fee reporting program.
- (3) **BOILER** should generally be considered as any combustion equipment used to produce steam, including a carbon monoxide boiler. This would generally not include a process heater that transfers heat from combustion gases to process streams, a waste heat recovery boiler that is used to recover sensible heat from the exhaust of process equipment such as a combustion turbine, or a recovery furnace that is used to recover process chemicals. Boilers used primarily for residential space and/or water heating are not affected by this section.
- (4) **BURN** means to combust any gaseous fuel, whether for useful heat or by incineration without recovery, except for flaring or emergency vent gases.
- (5) **BYPASS OPERATING QUARTER** means each calendar quarter that emissions pass through the bypass stack or duct.
- (6) **CALCINER** is a rotary kiln where calcination reaction is carried out between 1315 °C to 1480 °C.
- (7) **CEMENT KILN** is a device for the calcining and clinkering of limestone, clay and other raw materials, and recycle dust in the dry-process manufacture of cement.
- (8) **CONTINUOUS EMISSIONS MONITORING SYSTEM (CEMS)** is the total equipment required for the determination of concentrations of air contaminants and diluent gases in a source effluent as well as mass emission rate. The system consists of the following three major subsystems:
  - (A) **SAMPLING INTERFACE** is that portion of the monitoring system that performs one or more of the following operations: extraction, physical/chemical separation, transportation, and conditioning of a sample of the source effluent or protection of the analyzer from the hostile aspects of the sample or source environment.
  - (B) **ANALYZERS**
    - (i) **AIR CONTAMINANT ANALYZER** is that portion of the monitoring system that senses the air contaminant and generates a signal output which is a function of the concentration of that contaminant.

- (ii) DILUENT ANALYZER is that portion of the monitoring system that senses the concentration of oxygen or carbon dioxide or other diluent gas as applicable, and generates a signal output which is a function of a concentration of that diluent gas.
  - (C) DATA RECORDER is that portion of the monitoring system that provides a permanent record of the output signals in terms of concentration units, and includes additional equipment such as a computer required to convert the original recorded value to any value required for reporting.
- (9) CONTINUOUS PROCESS MONITORING SYSTEM is the total equipment required for the measurement and collection of process variables (e.g., fuel usage rate, oxygen content of stack gas, or process weight). Such CPMS data shall be used in conjunction with the appropriate emission rate to determine NO<sub>x</sub> emissions.
  - (10) CONTINUOUSLY MEASURE means to measure at least once every 15 minutes except during period of routine maintenance and calibration, as specified in 40CFR Part 60.13(e)(2).
  - (11) DAILY means a calendar day starting at 12 midnight and continuing through to the following 12 midnight hour.
  - (12) DIRECT MONITORING DEVICE is a device that directly measures the variables specified by the Executive Officer to be necessary to determine mass emissions of a RECLAIM pollutant and which meets all the standards of performance for CEMS set forth in the protocols for NO<sub>x</sub> and SO<sub>x</sub>.
  - (13) DRYER is equipment that removes substances by heating or other processes.
  - (14) ELECTRONICALLY TRANSMITTING means transmitting measured data without human alteration between the point/source of measurement and transmission.
  - (15) EMISSION FACTOR is the value specified in Tables 1 (NO<sub>x</sub>) or 2 (SO<sub>x</sub>) of Rule 2002-Baselines and Rates of Reduction for NO<sub>x</sub> and SO<sub>x</sub>.
  - (16) EMISSION RATE (ER) - is a value expressed in terms of NO<sub>x</sub> mass emissions per unit of heat input, and derived using the methodology specified in the "Protocol for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO<sub>x</sub>) Emissions" Chapter .
  - (17) EXISTING EQUIPMENT is any equipment which can emit NO<sub>x</sub> at a NO<sub>x</sub> RECLAIM facility, for which on or before (Rule Adoption date) has:
    - (A) A valid permit to construct or permit to operate pursuant to Rule 201 and/or Rule 203 has been issued; or

- (B) An application for a permit to construct or permit to operate has been deemed complete by the Executive Officer; or
  - (C) An equipment which is exempt from permit per Rule 219 and is operating on or before (Rule Adoption date).
- (18)  $F_d$  FACTOR is the dry F factor for each fuel, the ratio of the dry gas volume of the products of combustion to the heat content of the fuel (dscf/10<sup>6</sup> Btu). F factors are available in 40 CFR Part 60, Appendix A, Method 19.
- (19) FLUID CATALYTIC CRACKING UNIT (FCCU) breaks down heavy petroleum products into lighter products using heat in the presence of finely divided catalyst maintained in a fluidized state by the oil vapors. The fluid catalyst is continuously circulated between the reactor and the regenerator, using air, oil vapor, and steam as the conveying media.
- (20) FURNACE is an enclosure in which energy in a nonthermal form is converted to heat.
- (21) GAS FLARE is a combustion equipment used to prevent unsafe operating pressures in process units during shut downs and start-ups and to handle miscellaneous hydrocarbon leaks and process upsets.
- (22) GAS TURBINES are turbines that use gas as the working fluid. It is principally used to propel jet aircraft. Their stationary uses include electric power generation (usually for peak-load demands), end-of-line voltage booster service for long distance transmission lines, and for pumping natural gas through long distance pipelines. Gas turbines are used in combined (cogeneration) and simple-cycle arrangements.
- (23) GASEOUS FUELS include, but are not limited to, any natural, process, synthetic, landfill, sewage digester, or waste gases with a gross heating value of 300 Btu per cubic foot or higher, at standard conditions.
- (24) HEAT VALUE is the heat generated when one lb. of combustible is completely burned.
- (25) HEATER is any combustion equipment fired with liquid and/or gaseous fuel and which transfers heat from combustion gases to water or process streams.
- (26) HIGH HEAT VALUE is determined experimentally by calorimeters in which the products of combustion are cooled to the initial temperature and the heat absorbed by the cooling media is measured.
- (27) HOT STAND-BY is the period of operation when the flow or emission concentration are so low they can not be measured in a representative manner.

- (28) INCINERATOR is equipment that consumes substances by burning.
- (29) INTERNAL COMBUSTION ENGINE is any spark or compression-ignited internal combustion engine, not including engines used for self-propulsion.
- (30) LIQUID FUELS include, but are not limited to, any petroleum distillates or fuels in liquid form derived from fossil materials or agricultural products for the purpose of creating useful heat.
- (31) MASS EMISSION OF NO<sub>x</sub> in lbs/hr is the measured emission rates of nitrogen oxides.
- (32) MAXIMUM RATED CAPACITY means maximum design heat input in Btu per hour at the higher heating value of the fuels.
- (33) MODEM converts digital signals into audio tones to be transmitted over telephone lines and also convert audio tones from the lines to digital signals for machine use.
- (34) MONTHLY FUEL USE REPORTS could be sufficed by the monthly gas bill or the difference between the end and the beginning of the calendar month's fuel meter readings.
- (35) NINETIETH (90TH) PERCENTILE means a value that would divide an ordered set of increasing values so that at least 90 percent are less than or equal to the value and at least 10 percent are greater than or equal to the value.
- (36) OVEN is a chamber or enclosed compartment equipped to heat objects.
- (37) PEAKING UNIT means a turbine used intermittently to produce energy on a demand basis and does not operate more than 1300 hours per year.
- (38) PORTABLE EQUIPMENT is an equipment which is not attached to a foundation and is not operated at a single facility for more than 90 days in a year and is not a replacement equipment for a specific application which lasts or is intended to last for more than one year.
- (39) PROCESS HEATER means any combustion equipment fired with liquid and/or gaseous fuel and which transfers heat from combustion gases to process streams.
- (40) PROCESS WEIGHT means the total weight of all materials introduced into any specific process which may discharge contaminants into the atmosphere. Solid fuels charged shall be considered as part of the process weight, but liquid gaseous fuels and air shall not.
- (41) RATED BRAKE HORSEPOWER (bhp) is the maximum rating specified by the manufacturer and listed on the nameplate of that equipment. If not available, then

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the rated brake horsepower of an internal combustion engine can be calculated by multiplying the maximum fuel usage per unit time, heating value of fuel, equipment efficiency provided by the manufacturer, and the conversion factor (one brake horsepower = 2,545 Btu).

- (42) RATED HEAT INPUT CAPACITY is the heat input capacity specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified such that its maximum heat input is different than the heat input capacity specified on the nameplate, the new maximum heat input shall be considered as the rated heat input capacity.
- (43) RECLAIM FACILITY is a facility that has been listed as a participant in the Regional Clean Air Incentives Market (RECLAIM) program.
- (44) REMOTE TERMINAL UNIT (RTU) is a data collection and transmitting device used to transmit data and calculated results to the District Central Station Computer.
- (45) RENTAL EQUIPMENT is equipment which is rented or leased for operation by someone other than the owner of the equipment.
- (46) SHUTDOWN is that period of time during which the equipment is allowed to cool from a normal operating temperature range to a cold or ambient temperature.
- (47) SOLID FUELS include, but are not limited to, any solid organic material used as fuel for the purpose of creating useful heat.
- (48) STANDARD GAS CONDITIONS are defined as a temperature of 68 °F and one atmosphere of pressure.
- (49) START-UP is that period of time during which the equipment is heated to operating temperature from a cold or ambient temperature.
- (50) SULFURIC ACID PRODUCTION UNIT means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans or acid sludge, but does not include facilities where conversion to sulfuric acid as utilized primarily as a means of preventing emissions to the atmosphere of sulfur dioxide or other sulfur compounds.
- (51) TAIL GAS UNIT is a SO<sub>x</sub> control equipment associated with refinery sulfur recovery plant.
- (52) TEST CELLS are devices used to test the performance of engines such as internal combustion engine and jet engines.

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- (53) **TIMESHARING OF MONITOR** means the use of a common monitor for several sources of emissions.
- (54) **TURBINES** are machines that convert energy stored in a fluid into mechanical energy by channeling the fluid through a system of stationary and moving vanes.
- (55) **UNIT OPERATING DAY** means each calendar day that emissions pass through the stack or duct.
- (56) **UNIVERSE OF SOURCES FOR NO<sub>x</sub>** is a list of RECLAIM facilities that emit NO<sub>x</sub>.
- (57) **UNIVERSE OF SOURCES FOR SO<sub>x</sub>** is a list of RECLAIM facilities that emit SO<sub>x</sub>.
- (58) **AP 42** is a publication published by Environmental Protection Agency (EPA) which is a compilation of air pollution emission rates used to determine mass emission.
- (59) **ASTM METHOD D1945-81** Method for Analysis of natural gas by gas chromatography.
- (60) **ASTM METHOD 2622-82** Test Method for sulfur in petroleum products (Xray Spectrographic method)
- (61) **ASTM METHOD 3588-91** method for calculating colorific value and specific gravity (relative density) of gaseous fuels.
- (62) **ASTM METHOD 4294-90** test method for sulfur in petroleum products by non-dispersive Xray fluorescence spectrometry.
- (63) **ASTM METHOD 4891-84** test method for heating value of gases in natural gas range by stoichiometric combustion.
- (64) **DISTRICT METHOD 2.1** measures gas flow rate through stacks greater than 12 inch in diameter.
- (65) **DISTRICT METHOD 7.1** colorimetric determination of nitrogen oxides except nitrous oxide emissions from stationary sources by using the phenoldisulfonic acid (pds) procedure or ion chromatograph procedures. Its range is 2 to 400 milligrams NO<sub>x</sub> (as NO<sub>2</sub> per DSCM).
- (66) **DISTRICT METHOD 100.1** is an instrumental method for measuring gaseous emissions of nitrogen oxides, sulfur dioxide, carbon monoxide, carbon dioxide, and oxygen.



- (67) DISTRICT METHOD 307-91 laboratory procedure for analyzing total reduced sulfur compounds and SO<sub>2</sub>.
- (68) EPA METHOD 19 is the method of determining sulfur dioxide removal efficiency and particulate, sulfur dioxide and nitrogen oxides emission rates from electric utility steam generators.
- (69) EPA METHOD 450/3-78-117 air pollutant emission rate for Military and Civil Aircraft.