ARTICLE 3. MONITORING REQUIREMENTS

Rule 4. General Provisions

326 IAC 3-4-1 Definitions

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-11; IC 13-15; IC 13-17

Sec. 1. In addition to the definitions provided in IC 13-11, 326 IAC 1-2, and 326 IAC 2-7, the following definitions apply throughout this article unless expressly stated otherwise:

(1) "Calendar quarter" means a consecutive three (3) month period (nonoverlapping) beginning on:
- (A) January 1;
- (B) April 1;
- (C) July 1; or
- (D) October 1.

(2) "Capture system" means the equipment, including hoods, ducts, fans, and booths, that is used to contain, capture, and transport a pollutant to a control device.

(3) "Continuous emission monitoring system" or "CEMS" means the equipment required by the applicable permit, state rule, or federal regulation used to sample, analyze, measure, and provide a continuous, permanent record of emissions in units of the applicable standard or other form.

(4) "Continuous opacity monitoring system" or "COMS" means the equipment required by the applicable permit, state rule, or federal regulation used to measure the opacity of the effluent on a continuous basis as either of the following:
- (A) The optical density of the effluent gas.
- (B) The opacity of the effluent gas.

(5) "Data" means the results of any type of monitoring or method, including the results of:
- (A) instrumental or noninstrumental monitoring;
- (B) emission calculations;
- (C) manual sampling procedures;
- (D) record keeping procedures; or
- (E) any other form of information collection procedure used in connection with any type of monitoring or method.

(6) "Emission limitation or standard" means the following:
- (A) Any applicable requirement contained in this title that constitutes:
  - (i) an emission limitation or standard;
  - (ii) a standard of performance; or
  - (iii) a means of emission limitation.
- (B) An emission limitation or standard may be expressed:
  - (i) in terms of the pollutant, either as:
    - (AA) a specific quantity, rate, or concentration of emissions; or
    - (BB) the relationship of uncontrolled to controlled emissions; or
  - (ii) as either:
    - (AA) a work practice;
    - (BB) a process or control devices parameter; or
    - (CC) another form of specific:
      - (aa) design;
      - (bb) equipment;
      - (cc) operational; or
      - (dd) operation and maintenance;

    requirement.
- (C) For purposes of 326 IAC 3-8, an emission limitation or standard shall not include general operation requirements that an owner or operator may be required to meet.

(7) "Emission test", "compliance test", or "performance test" means a procedure for sampling a gas stream from a single sampling location at an emissions unit, or pollution control equipment, to determine a pollutant emission rate, concentration, or parameter while the emissions unit, or pollution control equipment is operating at conditions that result in measurement of

the highest emission or parameter values (prior to any control device), or at other operating conditions approved by the department or U.S. EPA. A test shall comprise three (3) sampling runs for a specified sampling time span. Additional conditions may be required by applicable rules, permit, or order. The owner or operator shall perform the test using sampling and analytical procedures approved by the department or U.S. EPA for the specific pollutant or parameter and emissions unit, pollution control equipment, process, or operation.

(8) "Emissions unit" has the meaning set forth in 326 IAC 1-2-23.5.

(9) "Exceedance" means a condition that:

(A) is detected by monitoring that provides data in terms of an emission limitation or standard; and

(B) indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

(10) "Malfunction" means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. For purposes of this article, a CEMS or COMS is considered process equipment.

(11) "Monitoring" means any form of collecting data on a routine basis to determine or otherwise assess compliance with emission limitations or standards. The term includes the following:

(A) Record keeping, if records are used to determine or assess compliance with an emission limitation or standard, including:

(i) records of raw material content and usage;

(ii) records that document compliance with work practice requirements; or

(iii) other records used to determine or assess compliance with an emission limitation or standard.

(B) Compliance method tests that are conducted on a routine periodic basis.

(C) One (1) or more of the following data collection techniques, where appropriate, for a particular circumstance:

(i) Continuous emission or opacity monitoring systems.

(ii) Continuous process, capture system, control device, or other relevant parameter monitoring systems or procedures, including a PEMS.

(iii) Emission estimation and calculation procedures.

(iv) Maintenance and analysis of records of fuel or raw materials usage.

(v) Recording results of a program or protocol to conduct specific operation and maintenance procedures.

(vi) Verification of emissions, process parameters, capture system parameters, or control device parameters, using portable or in situ measurement devices.

(vii) Visible emission observations.

(viii) Any other form of measuring, recording, or verifying on a routine basis emissions, process parameters, capture system parameters, control device parameters, or other factors relevant to assessing compliance with an emission limitation or standard.

(12) "Out of control" means any data collected by a continuous monitoring system during periods immediately following an out of tolerance quality assurance assessment and prior to an acceptable quality assurance assessment.

(13) "Peaking unit" means an emissions unit that has:

(A) an average capacity factor of not more than ten and zero-tenths percent (10.0%) during the previous three (3) calendar years; and

(B) a capacity factor of not more than twenty and zero-tenths percent (20.0%) in each of those calendar years.

(14) "Predictive emission monitoring system" or "PEMS" means a system that uses process and other parameters as inputs to a computer program or other data reduction system to produce values in terms of the applicable emission limitation or standard.

(15) "QA operating quarter" means a calendar quarter in which there are at least one hundred sixty-eight (168) unit operating hours, as defined in subdivision (18), or, for a common stack or bypass stack, a calendar quarter in which there are at least one hundred sixty-eight (168) stack operating hours, as defined in subdivision (17).

(16) "Quality assurance" means those activities performed to establish validity of data used to demonstrate compliance.

(17) "Stack operating hour" means a clock hour during which flue gases flow through a particular stack or duct, either for the entire hour or for part of the hour, while any associated emissions units are combusting fuel.

(18) "Unit operating hour" means a clock hour during which an emissions unit combusts any fuel, either for part of the hour or for the entire hour.

(Air Pollution Control Division; 326 IAC 3-4-1; filed Jan 30, 1998, 4:00 p.m.: 21 IR 2062; readopted filed Jan 10, 2001,

3:20 p.m.: 24 IR 1477; errata filed Dec 12, 2002, 3:35 p.m.: 26 IR 1566; filed Aug 26, 2004, 11:30 a.m.: 28 IR 30; filed Aug 11, 2011, 1:54 p.m.: 20110907-IR-326050330FRA)

326 IAC 3-4-2 Certification

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-14-4-3; IC 13-15; IC 13-17

Sec. 2. Each report submitted under this article shall contain a certification of truth, accuracy, and completeness. This certification and any other certification required under this article shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Reports submitted under 326 IAC 3-8 shall meet the certification requirements of 326 IAC 2-7-4(f). *(Air Pollution Control Division; 326 IAC 3-4-2; filed Jan 30, 1998, 4:00 p.m.: 21 IR 2063; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477; filed Aug 11, 2011, 1:54 p.m.: 20110907-IR-326050330FRA)*

326 IAC 3-4-3 Conversion factors

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-15; IC 13-17

Sec. 3. (a) Owners or operators of emissions units subject to this article shall use the following procedures for converting monitoring data to units of the standard where necessary:

(1) The owner or operator of a fossil fuel-fired steam generator shall use the following procedures to convert gaseous emission monitoring data in parts per million (ppm) to pounds per million British thermal units (Btu) (lbs/MMBtu) where necessary:

(A) When the owner or operator of a fossil fuel-fired steam generator elects under this article to measure oxygen (O_2) in flue gases, the owner or operator shall measure the pollutant concentration and oxygen on a dry basis and use the following conversion procedure:

$$E = CF \frac{(20.9)}{(20.9 - \%O_2)}$$

(B) When the owner or operator elects under this article to measure carbon dioxide (CO_2) in flue gases, the owner or operator shall measure the pollutant concentration and the CO_2 concentration on a consistent basis (wet or dry) and use the following conversion procedure:

$$E = CF_c \frac{(100)}{(\%CO_2)}$$

(C) When the owner or operator elects under this article to measure sulfur dioxide (SO_2) or nitrogen oxides (NO_x) in the flue gases, the owner or operator shall measure the diluent concentration and the SO_2 or the NO_x concentration on a wet basis and use the following conversion procedure, except where wet scrubbers are employed or where moisture is otherwise added to the stack gases:

$$E = C_{ws} F_w \frac{(20.9)}{(20.9\ (1 - B_{ws}) - \%O_{2ws})}$$

(D) When the owner or operator elects under this article to measure SO_2 or NO_x in the flue gases, the owner or operator shall measure the diluent concentration and the SO_2 or the NO_x concentration on a wet basis and use the following conversion procedure, where wet scrubbers or moisture is otherwise present in the stack gases, provided water vapor content of the stack gas is measured at least once every fifteen (15) minutes at the same point as the pollutant and oxygen measurements are made:

$$E = C_{ws} F \frac{(20.9)}{(20.9\ (1 - B_{ws}) - \%O_{2ws})}$$

(E) The values used in the equations under this subdivision are derived as follows:

C_{ws} = Pollutant concentration at stack conditions in grams per wet standard cubic meter (g/wscm) or pounds per wet standard cubic meter (lbs/wscm), determined by multiplying the average concentration in parts per million (ppm) for each one (1) hour period by 4.15×10^{-5} M g/wscm per ppm or 2.59×10^{-9} M lbs/wscm per ppm, where M is pollutant molecular weight in grams per gram-mole (g/g-mole) or pounds per pound-mole (lb/lb-mole).

M = 64.07 for SO_2 and 46.01 for oxides of nitrogen (NO_x) as NO_2.

C = Pollutant concentration at stack conditions in pounds per dry standard cubic meter (lbs/dscm) or grams per dry standard cubic meter (g/dscm).

F, F_c = A factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted (F_c), respectively. Values of F and F_c are given in 40 CFR 60, Appendix A, Method 19*, as applicable.

F_w = A factor representing a ratio of the volume of wet flue gases generated to the calorific value of the fuel combusted. Values of F_w are given in 40 CFR 60, Appendix A, Method 19*.

B_{wa} = Proportion by volume of water vapor in the ambient air.

B_{ws} = Proportion by volume of water vapor in the stack gas.

E = Pollutant emission, lbs/MMBtu.

Percent O_2, percent CO_2 = Oxygen or carbon dioxide volume (expressed as percent) determined with equipment specified under this article.

Percent O_{2ws} = Oxygen volume (expressed as percent) measurements made at stack conditions on a wet basis.

(2) For sulfuric acid plants, the owner or operator shall:

(A) establish a conversion factor three (3) times daily according to the procedures of 40 CFR 60.84(b)*;

(B) multiply the conversion factor by the average sulfur dioxide (SO_2) concentration in the flue gases to obtain average SO_2 emissions in pounds per ton (lbs/ton); and

(C) report the average sulfur dioxide emissions for each three (3) hour period in excess of the emission standard set forth in 326 IAC 7 in the quarterly report.

(b) The department may approve alternate procedures for computing emission averages that do not require integration of data or alternative methods of converting pollutant concentration measurements to units of the emission standard if the owner or operator shows that the alternate procedures are at least as accurate as those in this rule.

*These documents are incorporated by reference. Copies may be obtained from the Government Printing Office, 732 North Capitol Street NW, Washington, D.C. 20401 or are available for review and copying at the Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center North, Tenth Floor, 100 North Senate Avenue, Indianapolis, Indiana 46204. *(Air Pollution Control Division; 326 IAC 3-4-3; filed Jan 30, 1998, 4:00 p.m.: 21 IR 2063; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477; errata filed Dec 12, 2002, 3:35 p.m.: 26 IR 1566; filed Aug 26, 2004, 11:30 a.m.: 28 IR 31; filed Aug 11, 2011, 1:54 p.m.: 20110907-IR-326050330FRA)*