7011.1260 CONTINUOUS MONITORING.

Subpart 1. **Combustion chamber temperature monitor.** The owner or operator of a class D, III, or IV waste combustor must install and operate temperature monitors that continuously read and record the temperature at the point in the combustion unit one second downstream of the entrance of the last overfire or secondary air injection. The owner or operator may elect to place temperature monitors at another point downstream from the entrance of the last overfire or secondary air injection if the owner or operator conducts mapping of the operating combustion chambers to develop temperature isopleths and correlates these temperatures to the downstream temperature monitors. The averaging period for combustion chamber temperatures must be four-hour arithmetic block averages calculated from four one-hour arithmetic averages. Each one-hour arithmetic average must consist of at least ten data points equally spaced in time.

Subp. 2. **Particulate matter control device; temperature monitors.** The owner or operator of a waste combustor must install, calibrate, maintain, and operate temperature monitors that continuously read and record the temperatures of the flue gas at the inlet of each particulate matter control device.

Subp. 3. **Continuous monitors.** The owner or operator of a waste combustor must install, calibrate, maintain, and operate a continuous monitoring system when burning solid waste. Monitoring systems that continuously read and record the following outputs must be installed:

A. in class III, A, C, or D waste combustors:

(1) for carbon monoxide at the waste combustor outlet;

(2) for steam flow or an alternative unit load measurement parameter as described in part 7011.1265, subpart 4a, in waste combustors that recover heat with a boiler;

(3) for flue gas opacity, at a location after which the flue gas has exited the air pollution control equipment; and

(4) for oxygen or carbon dioxide at each location where carbon monoxide, sulfur dioxide, or nitrogen oxides emissions are monitored, to report corrected concentrations of regulated pollutants;

B. in all classifications of waste combustors subject to nitrogen oxides emission limits for nitrogen oxides; and

C. in all classifications of waste combustors subject to sulfur dioxide emission limits for sulfur dioxide. For those facilities for which compliance is determined by the percent reduction of emissions, monitors must be installed at the inlets and outlets of the air pollution control system.

Subp. 4. **Averaging periods.** Except as provided in this subpart and subparts 4a and 5, parts 7017.1002 to 7017.1220 apply to continuous monitoring data collection, reduction, and averaging periods.

A. For particulate matter control device inlet temperature monitoring, four-hour arithmetic block averages calculated from four consecutive one-hour arithmetic averages.

B. For steam flow or alternative unit load measurement parameter as described in part 7011.1265, subpart 4a, four-hour arithmetic block averages.

C. At waste combustors other than mass burn rotary waterwall combustors or RDF waste combustors for carbon monoxide, a four-hour block average. For mass burn rotary waterwall combustors or RDF stokers, the averaging period for carbon monoxide must be a daily 24-hour arithmetic average measured between 12 midnight and the following midnight. The four-hour and 24-hour average must be calculated from one-hour arithmetic averages. At least four points equally spaced in time shall be used to calculate each one-hour average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system.

D. For sulfur dioxide, the geometric average of the one-hour arithmetic average emission concentration during each 24-hour daily period measured from midnight to midnight. At least four data points equally spaced in time shall be used to calculate each one-hour arithmetic average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system.

E. For nitrogen oxides, the arithmetic average of the one-hour arithmetic average emission concentration during each 24-hour daily period measured from midnight to midnight. At least four data points equally spaced in time must be used to calculate each one-hour arithmetic average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system.

F. For opacity, a six-minute average, calculated using 36 or more data points equally spaced over a six-minute period.

G. For oxygen or carbon dioxide, a one-hour average.

Subp. 4a. **Calculating sulfur dioxide and nitrogen oxide emissions.**

A. Compliance with the sulfur dioxide emission limit and percent reduction must be determined by using a continuous emission monitor to measure sulfur dioxide and calculating a 24-hour daily geometric mean emission concentration and daily geometric mean percent reduction using Code of Federal Regulations, title 40, part 60, Appendix A, Method 19, section 5.4, as amended, to determine the daily geometric average percent reduction in the potential sulfur dioxide emission concentration. For waste combustors that do not operate continuously, compliance must be determined using a daily geometric mean of all hourly average values for the hours during the day that the facility is operated.

B. Compliance with the nitrogen oxides emission standards must be determined by using a continuous emission monitor for measuring nitrogen oxides and calculating a 24-hour daily arithmetic average emission concentration using Code of Federal Regulations, title 40, part 60, Appendix A, Method 19, section 4.1, as amended. For waste combustors that do not operate continuously, compliance must be determined using an arithmetic mean of all hourly average values for the hours during the day that the facility is operated.

Subp. 5. **Installing and operating continuous monitors.** The owner or operator of a waste combustor with continuous monitors must comply with parts 7017.1002 to 7017.1220, except as provided in items A to I.

A. Following the initial compliance test as required under part 7011.1270, the owner or operator of a waste combustor must submit the initial compliance report required under part 7011.1285, subpart 5.

B. Continuous monitors must be operated to measure and record data for at least 75 percent of the hours per day for 90 percent of the days of the calendar quarter that the waste combustor is operating and combusting solid waste.

C. All valid monitoring data must be used to calculate emission rates, emission reductions, and operating parameters, even if the conditions of item B are not met.

D. When continuous emissions data for sulfur dioxide removal efficiency, sulfur dioxide or nitrogen oxide emission rates, or carbon monoxide are not obtained because of monitor breakdowns, repairs, calibration checks, and zero and span adjustments, emission data calculations to determine compliance must be made using the following methods:

(1) for sulfur dioxide removal efficiency or sulfur dioxide or nitrogen oxide emission concentrations, Code of Federal Regulations, title 40, part 60, Appendix A, Method 19, as amended, to provide valid emission data to meet the requirements of item B. Other monitoring systems or other data collection methods may be used as approved by the commissioner; and

(2) for carbon monoxide, Code of Federal Regulations, title 40, part 60, Appendix A, Method 10, as amended, to provide valid emission data to meet the requirements of item B. Other monitoring systems or other data collection methods may be used as approved by the commissioner.

E. Zero drift and span drift checks of emission monitoring systems must be conducted in accordance with Code of Federal Regulations, title 40, section 60.13, as amended.

F. Span values for continuous monitors must be as described in subitems (1) to (4). Dual scale monitors may be used to monitor emissions beyond the ranges specified in subitems (1) to (4).

(1) The span value of the sulfur dioxide continuous monitors at the inlet to the sulfur dioxide control device must be 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the waste combustor unit, and the span value of the monitor at the outlet of the sulfur dioxide control device must be 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the waste combustor unit.

(2) The span value of the nitrogen oxides continuous monitors must be 125 percent of the maximum estimated hourly potential nitrogen oxides emissions of the waste combustor unit.

(3) The span value of the oxygen or carbon dioxide monitor must be 25 percent oxygen or carbon dioxide.

(4) The span value of the carbon monoxide monitor must be 125 percent of the maximum estimated hourly potential carbon monoxide emissions of the waste combustor unit.

G. Quarterly accuracy determinations, daily calibration drift tests, and annual relative accuracy test audits must be performed according to Code of Federal Regulations, title 40, part 60, Appendix F, as amended, for sulfur dioxide, nitrogen oxides, carbon monoxide, and oxygen or carbon dioxide, except that section 5.1.1 (relative accuracy test audit) does not apply to the oxygen monitor.

H. The procedures under Code of Federal Regulations, title 40, section 60.13, as amended, must be followed for installation, evaluation, and operation of continuous emissions monitoring systems for sulfur dioxide, nitrogen oxides, opacity, and oxygen or carbon dioxide.

I. The oxygen or carbon dioxide monitor must conform to Performance Specification 3 in Code of Federal Regulations, title 40, part 60, Appendix B, as amended, except that section 2.3 does not apply.

Subp. 6. **Recording data from continuous monitoring.** The owner or operator of a waste combustor must maintain a permanent record of continuously measured parameters. The record of monitoring must contain:

A. the calendar date;

B. the following measurements recorded in a manner that allows the data to be immediately accessed upon inspection by the commissioner:

(1) all six-minute opacity readings;

(2) all one-hour average sulfur dioxide emission concentrations at the inlet and outlet of the acid gas control device if compliance is based on a percent reduction, or at the outlet only if compliance is based on the outlet emission limit; and

(3) all one-hour average carbon monoxide and nitrogen oxide emission concentrations, steam flow or alternative unit load measurement parameter as described in part 7011.1265, subpart 4a, combustion chamber temperature, and particulate matter control device temperatures; and

C. the following average concentrations and parameters:

(1) all 24-hour daily geometric average percent reductions in sulfur dioxide emissions or all 24-hour daily geometric average sulfur dioxide emission concentrations, as applicable;

(2) all 24-hour daily arithmetic average nitrogen oxides emission concentrations;

(3) all four-hour block or 24-hour daily arithmetic average carbon monoxide emission concentrations, as applicable; and

(4) all four-hour block arithmetic average unit load levels and particulate matter control device inlet temperatures.

Subp. 7. **Exceeding continuously monitored emission limits.** If accurate and valid data results collected from continuous monitors for sulfur dioxide, nitrogen oxides, or carbon monoxide data exceed emission limits established in part 7011.1225 or in the waste combustor's permit after normal start-up, the waste combustor owner or operator must take the following actions:

A. The exceedance must be reported to the commissioner as soon as reasonably possible, giving consideration to matters of plant or worker safety or access to communications.

B. Appropriate repairs or modifications to return the waste combustor to compliance must be commenced within 72 hours of the exceedance.

C. If the waste combustor cannot be returned to compliance within 72 hours of the exceedance occurring, the waste combustor must be shut down. If the modifications to return the waste combustor to compliance require amending the air emission facility permit, the waste combustor must shut down within 72 hours of the exceedance.

D. When repairs or modifications have been completed, the waste combustor owner or operator must demonstrate to the commissioner that the waste combustor is in compliance. The waste combustor may be started up after the owner or operator notifies the commissioner in writing of the date the owner or operator plans to start up the waste combustor and the date that compliance testing is scheduled. Notification must be given at least ten days in advance of the compliance test date.

Statutory Authority: *MS s 116.07*

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