

(2) Use Method 25A if the add-on control device is an oxidizer and you expect the total gaseous organic concentration as carbon to be 50 ppmv or less at the control device outlet.

(3) Use Method 25A if the add-control device is not an oxidizer.

(c) If two or more add-on control devices are used for the same emission stream, then you must measure emissions at the outlet of each device. For example, if one add-on control device is a concentrator with an outlet for the high-volume, dilute stream that has been treated by the concentrator, and a second add-on control device is an oxidizer with an outlet for the low-volume, concentrated stream that is treated with the oxidizer, you must measure emissions at the outlet of the oxidizer and the high volume dilute stream outlet of the concentrator.

(d) For each test run, determine the total gaseous organic emissions mass flow rates for the inlet and the outlet of the add-on control device, using Equation 1 of this section. If there is more than one inlet or outlet to the add-on control device, you must calculate the total gaseous organic mass flow rate using Equation 1 of this section for each inlet and each outlet and then total all of the inlet emissions and total all of the outlet emissions.

$$M_f = Q_{sd} C_c (12)(0.0416)(10^{-6}) \quad (\text{Eq. 1})$$

Where:

M_f = Total gaseous organic emissions mass flow rate, kg per hour (kg/h).

C_c = Concentration of organic compounds as carbon in the vent gas, as determined by Method 25 or Method 25A, ppmv, dry basis.

Q_{sd} = Volumetric flow rate of gases entering or exiting the add-on control device, as determined by Method 2, 2A, 2C, 2D, 2F, or 2G, dry standard cubic meters per hour (dscm/h).

0.0416 = Conversion factor for molar volume, kg-moles per cubic meter (mol/m^3) (@ 293 Kelvin (K) and 760 millimeters of mercury (mmHg)).

(e) For each test run, determine the add-on control device organic emissions destruction or removal efficiency using Equation 2 of this section:

$$\text{DRE} = \frac{M_{fi} - M_{fo}}{M_{fi}} (100) \quad (\text{Eq. 2})$$

Where:

DRE = Organic emissions destruction or removal efficiency of the add-on control device, percent.

M_{fi} = Total gaseous organic emissions mass flow rate at the inlet(s) to the add-on control device, using Equation 1 of this section, kg/h.

M_{fo} = Total gaseous organic emissions mass flow rate at the outlet(s) of the add-on control device, using Equation 1 of this section, kg/h.

(f) Determine the emission destruction or removal efficiency of the add-on control device as the average of the efficiencies determined in the three test runs and calculated in Equation 2 of this section.

§ 63.3167 How do I establish the add-on control device operating limits during the performance test?

During the performance test required by § 63.3160 and described in §§ 63.3164 and 63.3166, you must establish the operating limits required by § 63.3093 according to this section, unless you have received approval for alternative monitoring and operating limits under § 63.8(f) as specified in § 63.3093.

(a) *Thermal oxidizers.* If your add-on control device is a thermal oxidizer, establish the operating limit according to paragraphs (a)(1) through (3) of this section.

(1) During the performance test, you must monitor and record the combustion temperature at least once every 15 minutes during each of the three test runs. You must monitor the temperature in the firebox of the thermal oxidizer or immediately downstream of the firebox before any substantial heat exchange occurs.

(2) Use all valid data collected during the performance test to calculate and record the average combustion temperature maintained during the performance test. This average combustion temperature is the minimum 3-hour average operating limit for your thermal oxidizer.

(3) As an alternative, if the latest operating permit issued before April 26, 2007, for the thermal oxidizer at your facility contains recordkeeping and reporting requirements for the combustion temperature that are consistent with the requirements for thermal oxidizers in 40 CFR 60.395(c), then you

may set the minimum operating limit for the combustion temperature for each such thermal oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average combustion temperature during the performance test of that thermal oxidizer. If you do not have an operating permit for the thermal oxidizer at your facility and the latest construction permit issued before April 26, 2007, for the thermal oxidizer at your facility contains recordkeeping and reporting requirements for the combustion temperature that are consistent with the requirements for thermal oxidizers in 40 CFR 60.395(c), then you may set the minimum operating limit for the combustion temperature for each such thermal oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average combustion temperature during the performance test of that thermal oxidizer. If you use 28 degrees Celsius (50 degrees Fahrenheit) below the combustion temperature maintained during the performance test as the minimum operating limit for a thermal oxidizer, then you must keep the combustion temperature set point on that thermal oxidizer no lower than 14 degrees Celsius (25 degrees Fahrenheit) below the lower of that set point during the performance test for that thermal oxidizer and the average combustion temperature maintained during the performance test for that thermal oxidizer.

(b) *Catalytic oxidizers.* If your add-on control device is a catalytic oxidizer, establish the operating limits according to either paragraphs (b)(1) through (3) or paragraphs (b)(4) through (6) of this section.

(1) During the performance test, you must monitor and record the temperature just before the catalyst bed and the temperature difference across the catalyst bed at least once every 15 minutes during each of the three test runs.

(2) Use all valid data collected during the performance test to calculate and record the average temperature just before the catalyst bed and the average temperature difference across the catalyst bed maintained during the performance test. The minimum 3-hour average operating limits for your catalytic oxidizer are the average tempera-

ture just before the catalyst bed maintained during the performance test of that catalytic oxidizer and 80 percent of the average temperature difference across the catalyst bed maintained during the performance test of that catalytic oxidizer, except during periods of low production, the latter minimum operating limit is to maintain a positive temperature gradient across the catalyst bed. A low production period is when production is less than 80 percent of production rate during the performance test of that catalytic oxidizer.

(3) As an alternative, if the latest operating permit issued before April 26, 2007, for the catalytic oxidizer at your facility contains recordkeeping and reporting requirements for the temperature before the catalyst bed that are consistent with the requirements for catalytic oxidizers in 40 CFR 60.395(c), then you may set the minimum operating limits for each such catalytic oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst bed maintained during the performance test for that catalytic oxidizer and 80 percent of the average temperature difference across the catalyst bed maintained during the performance test for that catalytic oxidizer, except during periods of low production the latter minimum operating limit is to maintain a positive temperature gradient across the catalyst bed. If you do not have an operating permit for the catalytic oxidizer at your facility and the latest construction permit issued before April 26, 2007, for the catalytic oxidizer at your facility contains recordkeeping and reporting requirements for the temperature before the catalyst bed that are consistent with the requirements for catalytic oxidizers in 40 CFR 60.395(c), then you may set the minimum operating limits for each such catalytic oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst bed maintained during the performance test for that catalytic oxidizer and 80 percent of the average

temperature difference across the catalyst bed maintained during the performance test for that catalytic oxidizer, except during periods of low production the latter minimum operating limit is to maintain a positive temperature gradient across the catalyst bed. A low production period is when production is less than 80 percent of production rate during the performance test. If you use 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst bed maintained during the performance test as the minimum operating limits for a catalytic oxidizer, then you must keep the set point for the temperature just before the catalyst bed on that catalytic oxidizer no lower than 14 degrees Celsius (25 degrees Fahrenheit) below the lower of that set point during the performance test for that catalytic oxidizer and the average temperature just before the catalyst bed maintained during the performance test for that catalytic oxidizer.

(4) As an alternative to monitoring the temperature difference across the catalyst bed, you may monitor the temperature at the inlet to the catalyst bed and implement a site-specific inspection and maintenance plan for your catalytic oxidizer as specified in paragraph (b)(6) of this section. During the performance test, you must monitor and record the temperature just before the catalyst bed at least once every 15 minutes during each of the three test runs. Use all valid data collected during the performance test to calculate and record the average temperature just before the catalyst bed during the performance test. This is the minimum operating limit for your catalytic oxidizer.

(5) If the latest operating permit issued before April 26, 2007, for the catalytic oxidizer at your facility contains recordkeeping and reporting requirements for the temperature before the catalyst bed that are consistent with the requirements for catalytic oxidizers in 40 CFR 60.395(c), then you may set the minimum operating limit for each such catalytic oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst

bed maintained during the performance test for that catalytic oxidizer. If you do not have an operating permit for the catalytic oxidizer at your facility and the latest construction permit issued before April 26, 2007, for the catalytic oxidizer at your facility contains recordkeeping and reporting requirements for the temperature before the catalyst bed that are consistent with the requirements for catalytic oxidizers in 40 CFR 60.395(c), then you may set the minimum operating limit for each such catalytic oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst bed maintained during the performance test for that catalytic oxidizer. If you use 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst bed maintained during the performance test as the minimum operating limit for a catalytic oxidizer, then you must keep the set point for the temperature just before the catalyst bed on that catalytic oxidizer no lower than 14 degrees Celsius (25 degrees Fahrenheit) below the lower of that set point during the performance test for that catalytic oxidizer and the average temperature just before the catalyst bed maintained during the performance test for that catalytic oxidizer.

(6) You must develop and implement an inspection and maintenance plan for your catalytic oxidizer(s) for which you elect to monitor according to paragraph (b)(4) or (b)(5) of this section. The plan must address, at a minimum, the elements specified in paragraphs (b)(6)(i) through (iii) of this section.

(i) Annual sampling and analysis of the catalyst activity (*i.e.*, conversion efficiency) following the manufacturer's or catalyst supplier's recommended procedures. If problems are found during the catalyst activity test, you must replace the catalyst bed or take other corrective action consistent with the manufacturer's recommendations.

(ii) Monthly external inspection of the catalytic oxidizer system, including the burner assembly and fuel supply lines for problems and, as necessary, adjust the equipment to assure proper air-to-fuel mixtures.

(iii) Annual internal inspection of the catalyst bed to check for channeling, abrasion, and settling. If problems are found during the annual internal inspection of the catalyst, you must replace the catalyst bed or take other corrective action consistent with the manufacturer's recommendations. If the catalyst bed is replaced and is not of like or better kind and quality as the old catalyst, then you must conduct a new performance test to determine destruction efficiency according to §63.3166. If a catalyst bed is replaced and the replacement catalyst is of like or better kind and quality as the old catalyst, then a new performance test to determine destruction efficiency is not required and you may continue to use the previously established operating limits for that catalytic oxidizer.

(c) *Regenerative carbon adsorbers.* If your add-on control device is a regenerative carbon adsorber, establish the operating limits according to paragraphs (c)(1) and (2) of this section.

(1) You must monitor and record the total regeneration desorbing gas (*e.g.*, steam or nitrogen) mass flow for each regeneration cycle and the carbon bed temperature after each carbon bed regeneration and cooling cycle for the regeneration cycle either immediately preceding or immediately following the performance test.

(2) The operating limits for your carbon adsorber are the minimum total desorbing gas mass flow recorded during the regeneration cycle and the maximum carbon bed temperature recorded after the cooling cycle.

(d) *Condensers.* If your add-on control device is a condenser, establish the operating limits according to paragraphs (d)(1) and (2) of this section.

(1) During the performance test, you must monitor and record the condenser outlet (product side) gas temperature at least once every 15 minutes during each of the three test runs.

(2) Use all valid data collected during the performance test to calculate and record the average condenser outlet (product side) gas temperature maintained during the performance test. This average condenser outlet gas temperature is the maximum 3-hour average operating limit for your condenser.

(e) *Concentrators.* If your add-on control device includes a concentrator, you must establish operating limits for the concentrator according to paragraphs (e)(1) and (2) of this section.

(1) During the performance test, you must monitor and record the desorption gas inlet temperature at least once every 15 minutes during each of the three runs of the performance test.

(2) Use all valid data collected during the performance test to calculate and record the average desorption gas inlet temperature. The minimum operating limit for the concentrator is 8 degrees Celsius (15 degrees Fahrenheit) below the average desorption gas inlet temperature maintained during the performance test for that concentrator. You must keep the set point for the desorption gas inlet temperature no lower than 6 degrees Celsius (10 degrees Fahrenheit) below the lower of that set point during the performance test for that concentrator and the average desorption gas inlet temperature maintained during the performance test for that concentrator.

(f) *Emission capture systems.* For each capture device that is not part of a PTE that meets the criteria of §63.3165(a) and that is not capturing emissions from a downdraft spray booth or from a flash-off area or bake oven associated with a downdraft spray booth, establish an operating limit for either the gas volumetric flow rate or duct static pressure, as specified in paragraphs (f)(1) and (2) of this section. The operating limit for a PTE is specified in Table 1 to this subpart.

(1) During the capture efficiency determination required by §63.3160 and described in §§63.3164 and 63.3165, you must monitor and record either the gas volumetric flow rate or the duct static pressure for each separate capture device in your emission capture system at least once every 15 minutes during each of the three test runs at a point in the duct between the capture device and the add-on control device inlet.

(2) Calculate and record the average gas volumetric flow rate or duct static pressure for the three test runs for each capture device, using all valid data. This average gas volumetric flow

rate or duct static pressure is the minimum operating limit for that specific capture device.

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§ 63.3168 What are the requirements for continuous parameter monitoring system installation, operation, and maintenance?

(a) *General.* You must install, operate, and maintain each CPMS specified in paragraphs (c), (e), (f), and (g) of this section according to paragraphs (a)(1) through (6) of this section. You must install, operate, and maintain each CPMS specified in paragraphs (b) and (d) of this section according to paragraphs (a)(3) through (5) of this section.

(1) The CPMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of four equally-spaced successive cycles of CPMS operation in 1 hour.

(2) You must determine the average of all recorded readings for each successive 3-hour period of the emission capture system and add-on control device operation.

(3) You must record the results of each inspection, calibration, and validation check of the CPMS.

(4) You must maintain the CPMS at all times and have available necessary parts for routine repairs of the monitoring equipment.

(5) You must operate the CPMS and collect emission capture system and add-on control device parameter data at all times that a controlled coating operation is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments).

(6) You must not use emission capture system or add-on control device parameter data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities when calculating data averages. You must use all the data collected during all other periods in calculating the data averages for determining compliance with the emission

capture system and add-on control device operating limits.

(7) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the CPMS to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out of control and data are not available for required calculations is a deviation from the monitoring requirements.

(b) *Capture system bypass line.* You must meet the requirements of paragraphs (b)(1) and (2) of this section for each emission capture system that contains bypass lines that could divert emissions away from the add-on control device to the atmosphere.

(1) You must monitor or secure the valve or closure mechanism controlling the bypass line in a nondiverting position in such a way that the valve or closure mechanism cannot be opened without creating a record that the valve was opened. The method used to monitor or secure the valve or closure mechanism must meet one of the requirements specified in paragraphs (b)(1)(i) through (iv) of this section.

(i) *Flow control position indicator.* Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow control position indicator that takes a reading at least once every 15 minutes and provides a record indicating whether the emissions are directed to the add-on control device or diverted from the add-on control device. The time of occurrence and flow control position must be recorded, as well as every time the flow direction is changed. The flow control position indicator must be installed at the entrance to any bypass line that could divert the emissions away from the add-on control device to the atmosphere.

(ii) *Car-seal or lock-and-key valve closures.* Secure any bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. You must visually inspect the seal or closure mechanism at least once every month to ensure that the valve is maintained in the closed position, and the emissions are not diverted away from the add-on control device to the atmosphere.