



Facts About Continuous Monitoring Systems

Air Quality/General Permit Information/#2.20/June 2004

Some facilities are required by federal law or their permits to continuously monitor their emissions for certain pollutants (sulfur dioxide, nitrogen oxides, total reduced sulfur, hydrogen sulfide, volatile organic compounds, and carbon monoxide). Other monitor types include opacity, carbon dioxide, oxygen, and flow rate.

State and federal regulations include requirements designed to ensure that these monitors are properly installed, operated and maintained. If your facility is one of those that must operate a continuous emission monitoring system (CEMS) or continuous opacity monitoring system (COMS), you should be aware of the requirements that apply to you. Your permit application should include those

requirements, and you can expect to see them included in your permit, when it is issued.

These requirements include routine tests and audits, notifications, and submittals to the Minnesota Pollution Control Agency (MPCA). Certification of your CEMS or COMS is also required, if the system has not been certified in the past.

The tables below list the requirements and submittals that apply to CEMS and COMS owners. Table 1 applies to most facilities with CEMS which are **not** required under the acid rain provisions of the federal Clean Air Act Amendments (40 CFR pt. 75, or Part 75). Table 2 applies to facilities that must comply with Part 75. Table 3 lists the requirements for COMS.

Table 1
Requirements and Submittals for Non-Part 75 CEMS

Requirements	One-Time Submittals	Routine Submittals
<ul style="list-style-type: none"> • CEMS certification test pretest meeting • CEMS certification test • CEMS continuous operation • CEMS calibration drift • CEMS cylinder gas audit • CEMS relative accuracy test audit 	<ul style="list-style-type: none"> • CEMS certification test notification • CEMS certification test plan • CEMS certification test report • Microfiche copy of CEMS certification test report 	<ul style="list-style-type: none"> • Excess emission/downtime reports • Cylinder gas audit results summary • Notification for relative accuracy test audit • Relative accuracy test audit results summary





Table 2
Requirements and Submittals for Part 75 CEMS

Requirements	One-Time Submittals	Routine Submittals
<ul style="list-style-type: none"> Part 75 certification test pretest meeting Part 75 certification test CEMS continuous operation Part 75 daily calibration error test Part 75 linearity and leak check test Part 75 relative accuracy test audit 	<ul style="list-style-type: none"> Part 75 CEMS certification test notification Part 75 CEMS certification test monitoring plan Part 75 CEMS certification test report Microfiche copy of CEMS certification test report 	<ul style="list-style-type: none"> Excess emission/downtime reports Part 75 CEMS linearity test results summary Notification of relative accuracy test audit Part 75 relative accuracy test audit results summary

Table 3
Requirements and Submittals for COMS

Requirements	One-Time Submittals	Routine Submittals
<ul style="list-style-type: none"> COMS certification test pretest meeting COMS certification test COMS continuous operation COMS calibration drift COMS calibration error test 	<ul style="list-style-type: none"> COMS certification test notification COMS certification test plan COMS certification test report Microfiche copy of COMS certification test report 	<ul style="list-style-type: none"> Excess emission/downtime reports COMS calibration error audit results summary

What is a CEMS or COMS Certification?

A certification test assesses the representativeness of location and accuracy of the monitor. A certification test is a test on a continuous monitoring system conducted in accordance with the procedures of the appropriate performance specifications listed in 40 CFR pt. 60, Appendix B, or 40 CFR pt. 75, Appendix A. A monitor is not certified until a complete certification test report is submitted to the commissioner and the commissioner gives written determination of acceptance. Upon determination of acceptance, the duration of the certification status retroactively begins with the completion date of the certification test. Monitors which have been certified as of the promulgation date of the rule will be considered certified.

CEMS/COMS Operation

Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, all CEMS and COMS shall be in continuous operation. Monitor downtime is acceptable for reasonable periods of time when the downtime is due to one of the following causes:

- A. natural disasters which render the monitor inoperative;
- B. monitor breakdown which makes it necessary to return the monitor to the manufacturer for repair;
- C. monitor breakdown which makes it necessary to order parts not included in the facility's quality assurance/quality control (QA/QC) plan list of spare monitor parts;



- D. scheduled monitor maintenance based on equipment manufacturer's recommended maintenance schedule;
- E. performance of daily drift checks; or
- F. performance of monitor audits required by permit or by request of the commissioner.

CEMS/COMS Quality Assurance

The continuous monitoring rules require owners or operators to have a written QA/QC plan. The plan shall be on site available for inspection. The owner or operator shall keep the plan up-to-date. The plan shall contain all of the information required by 40 CFR pt. 60, Appendix F, Section 3, or 40 CFR pt. 75, Appendix B, as applicable, and the manufacturer's spare parts list for each monitoring system.

Opacity Limits

An excursion is defined as an opacity higher than the standard that is allowed for a limited number of minutes within a time period.

A. For opacity standards not allowing excursions or opacity standards that allow excursions based on a six-minute period.

There are ten individual six-minute averaging periods in each hour. The first six-minute period commences at the beginning of the clock-hour and ends at the beginning of minute six of the clock-hour. The second six-minute period immediately follows the first, and the pattern continues through the last of the ten six-minute periods in a clock-hour.

B. For opacity standards allowing excursions other than those excursions based on a six-minute period.

Six-minute averages are not to be calculated when excursions are allowed. There are sixty individual one-minute averages each hour. A one-minute average is the arithmetic mean of all of the data points collected by a monitor in a one-minute period. Each one-minute period begins at the top of the clock-minute and ends at the top of the next clock-minute.

Reporting Emissions Exceedances and Monitor Downtime

The excess emission report (EER) shall indicate all periods of exceedances of the limit, including exceedances allowed by an applicable standard (i.e., during startup, shutdown, and/or malfunctions). The owner or operator of a facility who installs and operates CEMS or COMS shall submit a written excess EER for every calendar quarter. The EER must be submitted even if there were no excess emissions, monitor downtime, or monitor bypasses during the quarter. The EER shall be submitted on a form approved by the commissioner (Form DRF-1 for Title V permits) within 30 days of the end of each calendar quarter, and shall contain the following information:

- A. the date and time of commencement and completion of each period of excess emissions; the magnitude of the excess emissions, and any conversion factor(s) used to calculate the excess emissions;
- B. specific identification of the cause of each period of excess emissions including periods of emission unit start-ups, shutdowns, malfunctions, and time periods of exceedances of the limit which are allowed by an applicable standard;
- C. the corrective action taken or preventative measures adopted to stop or reduce excess emissions;
- D. the dates and time of commencement of every period of monitor downtime or periods when the monitor was bypassed;
- E. specific identification of the cause of each period of monitor downtime including periods of allowable monitor downtime; and
- F. the corrective action taken or preventative measures adopted to stop or reduce monitor downtime.



Recordkeeping

All records including maintenance, adjustments, and monitoring data shall be maintained on site for a period of five years. The QA/QC plan should describe which records are required to be maintained. These records shall be submitted to the agency at such times as the commissioner may require.

For More Information

The CEMS program requirements can vary depending on the specific equipment or operations you have at your source. If you have questions about what you need to do, please call MPCA Customer Assistance Center at (651) 297-2274 or (800) 646-6247 (within Minnesota only).

MPCA's Web site: <http://www.pca.state.mn.us>