

Revisions to Ambient Air Monitoring Regulations FACT SHEET

ACTION

- On September 27, 2006, the U.S. Environmental Protection Agency (EPA) amended its national air quality monitoring requirements. The changes will help EPA, states, tribes and local air quality agencies improve public health protection and better inform the public about air quality in their communities. Under the new requirements, air quality regulators will be able to take advantage of improvements in monitoring technologies.
- The changes will affect monitoring for six common pollutants known as “criteria pollutants” and their precursors. The six pollutants are: ground-level ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particle pollution (also called particulate matter) and lead.
- The changes focus on retaining but reshaping existing monitoring networks for all of these pollutants to ensure that monitors are concentrated in areas with air quality problems, where monitoring is most critical. The rule also will add more monitors capable of providing real-time air quality measurements.

WHAT THE RULE WILL REQUIRE

- There will continue to be a national network of monitors for each criteria pollutant, but the improved network will be more strategic and more efficient. The rule will change the locations of some types of monitors, add new monitors for some pollutants, and allow states to shut down unneeded monitors for some pollutants. Below is a summary of changes:

New multi-pollutant monitoring sites

- EPA and the states will add about 75 multi-pollutant monitoring stations around the country. Monitoring multiple pollutants at the same site will help EPA improve air quality management by enhancing the Agency’s ability to model and forecast air pollution. The sites also will provide real-time data for some pollutants, including particle pollution and ground-level ozone.
 - By requiring that these monitors be co-located and improved, EPA’s rule will enhance the ability of federal, state and local air quality experts to examine the effects of multiple air pollutants on health and the environment.
 - EPA will locate 55 of these sites in urban areas and 20 in rural areas in order to enhance our understanding of how pollution travels and of the differences between air quality in urban and rural areas.

Particle pollution monitors

- Since 1987, EPA has had national standards for particles smaller than 10 micrometers (PM₁₀). The standards are measured daily. A network of monitors across the country samples levels of PM₁₀ in the air. Under the new rule, many of the existing PM₁₀ monitors will remain in place, especially in areas that exceed the 24-hour PM₁₀ standard. States may

choose to shut down monitors that are redundant or are measuring air quality concentrations well below the level of the 24-hour PM₁₀ standard.

- The large monitoring network for fine particles (particles smaller than 2.5 micrometers, also known as PM_{2.5}) will continue, but some monitors could be moved. Every-day sampling will be required for some sites where ambient concentrations of PM_{2.5} approach the 24-hour standard for PM_{2.5}, while other sites will operate every third or sixth day.
- PM_{2.5} chemical speciation monitoring also will continue at 54 national sites used to track trends in air quality, and in areas to support development and tracking of emissions control strategies. PM_{2.5} continuous monitoring also will continue at a large number of sites to support forecasting and reporting of the Air Quality Index (AQI).
- EPA and the states will add measurement of "inhalable coarse particles," (i.e. PM_{10-2.5}) at the 75 multi-pollutant monitoring sites. Some monitors will provide at least hourly measurements in near real-time (continuous mass concentration monitoring); while other monitors will sample the air over a 24-hour period and require laboratory processing of the sample (filter based sampling). Filter-based monitoring will enable development of PM_{10-2.5} methods for chemical speciation, which is also planned for the 75 multi-pollutant sites.

Ground-level ozone monitors

- EPA and the states will continue to run a large network for monitoring ozone levels, including forecasting and reporting of the AQI. Some monitors could be relocated for better coverage.

Carbon monoxide monitors

- Carbon monoxide will also be monitored at the 75 new multi-pollutant sites. High levels of carbon monoxide in the ambient air are only a problem in very few areas of the country. Those areas will be required to continue monitoring under this action. All others will be allowed to shut down their monitors, once EPA approves. Some states may need to amend their air quality plans as part of applying for EPA approval.

Lead monitors

- Lead in the outdoor air is a problem only in a limited number of areas. Monitors will remain in place in those areas and in any areas anticipated to have lead problems.
- EPA also will require certain states to maintain a limited number of monitors, including some monitors at the new multi-pollutant sites, to track air quality trends in lead. Other lead monitors located in areas without lead air quality problems could be shut down, if EPA approves. Some states may need to amend their air quality plans as part of applying for EPA approval.

Sulfur dioxide monitors

- Most areas of the US meet EPA's national air quality standards for sulfur dioxide (SO₂). By 2015 after the second phase of EPA's 2005 Clean Air Interstate Rule goes into effect, even more areas will meet the standards. However, even low levels of SO₂ can contribute to fine particle pollution.
- The changes made in this rule will improve the Agency's ability to monitor SO₂ pollution trends by using improved technology (at the 75 multi-pollutant sites) that can detect SO₂ at lower levels than existing monitors can measure.
- States will continue using existing monitors in areas that do not meet, or are expected to violate, the SO₂ standard. Other existing monitors could be shut down, if EPA approves. Some states may need to amend their air quality plans as part of applying for EPA approval.

Nitrogen dioxide monitors

- The majority of existing nitrogen dioxide monitors in the country could be shut down, once EPA approves, because all areas of the country meet EPA's air quality standards for this pollutant. One area known as a "maintenance area" (Los Angeles/South Coast Air Basin) must continue to operate existing monitors.
- Because oxides of nitrogen contribute to ozone and particle pollution formation, several categories of oxides of nitrogen, known collectively as total reactive nitrogen, will be measured at the multi-pollutant sites and at sites in areas with ongoing ozone air quality problems. This new measurement system will be more useful in supporting models and air pollution forecasts than existing nitrogen oxides technology.

Special-purpose monitors

- These rule changes give states more flexibility to deploy Special Purpose Monitors for short periods of time (in addition to the monitors they are required to operate) to assess suspected air pollution problems without immediate regulatory consequences.

Technical changes

- The rule also makes a number of technical changes including:
 - Updating quality assurance requirements with an emphasis on using the data quality objectives process to ensure quality data.
 - Revising statistics used for calculating precision and bias.
 - Revising the requirements for designating monitoring methods known as "federal reference" methods.
 - Revising regulations for approving PM_{2.5} monitoring methods that could be considered equivalent to the Federal Reference Method and adding new requirements for approving equivalent methods for continuous PM_{2.5} and PM_{10-2.5} monitoring.

- Providing flexibility for states to use certain methods for continuous monitoring of PM_{2.5} mass in regions where those methods work well. These methods could be used to meet multiple monitoring objectives, including determining whether an area is meeting air quality standards.
- Reducing the supplemental data reporting requirements for filter-based PM_{2.5} monitors.
- Clarifying data certification requirements and requiring an accelerated schedule for states to complete annual certification letters and transmit them to EPA.
- Consolidating and reorganizing several technical appendices.
- Conduct more detailed ambient monitoring network assessments every 5 years.

BACKGROUND

- Ambient air monitoring systems play a critical role in the nation's air quality management program infrastructure. They are used for a wide variety of purposes, including providing data used to determine whether areas are meeting the National Ambient Air Quality Standards.
- Other important uses of these monitors include: support of timely reporting of the Air Quality Index and issuing air quality forecasts, support of long-term health assessments, and tracking long-term air quality both to gauge effectiveness of emission control strategies and to quantify accuracy of supporting model evaluations.
- Tribes may choose to implement all or part of the Clean Air Act requirements. These modifications would apply to Tribes that have chosen to monitor ambient air quality.
- EPA sought expert scientific review of the proposed methods, technologies, and approach for ambient air monitoring from the Clean Air Scientific Advisory Committee (CASAC). The CASAC is an independent scientific advisory committee established, in part, to provide advice, information and recommendations on the scientific and technical aspects of issues related to air quality criteria and the NAAQS.
- EPA also sought and received input from the public at meetings and hearings on the changes to the monitoring network.
- Additional information about the national air monitoring network is available on the Ambient Monitoring Technology Information Center section of EPA's Technology Transfer Network at: <http://www.epa.gov/ttn/amtic/>

FOR MORE INFORMATION

- Interested parties can download the notice from EPA's web site on the Internet at: <http://www.epa.gov/pm/actions.html>.