Fact Sheet - Prevention of Significant Deterioration for Fine Particle Pollution– Increments, Significant Impact Levels and Significant Monitoring Concentration

ACTION

- On September 12, 2007, the U.S. Environmental Protection Agency (EPA) proposed to adopt key elements of the Prevention of Significant Deterioration (PSD) program for fine particle pollution - particulate matter less than 2.5 micrometers in diameter (PM2.5).

- EPA sets National Ambient Air Quality Standards (NAAQS), for six principle air pollutants. These pollutants also known as criteria air pollutants include fine particles (PM 2.5). When an industrial facility applies for a permit to emit a criteria pollutant in an area that meets the NAAQS, the state and EPA must determine if emissions of that pollutant will deteriorate air quality. This action proposes a basis for making that determination under the Clean Air Act.

- Today's action proposed several different options to calculate the values for each of these thresholds. EPA is taking comment on which of the options is the most appropriate for each respective threshold.

PSD Increments (Increments)

- On October 17, 2006 EPA finalized a new NAAQS for PM2.5 and is now required by the Clean Air Act to determine how much of this pollutant can be emitted in areas already meeting that standard. These determinations are made under the PSD program, which establishes three thresholds of air quality and emissions to guide states in maintaining clean air. These thresholds are known as Increments, Significant Impact Levels, and Significant Monitoring Concentrations.

- An increment is a measure of how much of a pollutant can be added to the ambient air before the air quality will significantly deteriorate. More specifically, increments are the maximum allowable increase in ambient air concentrations of a criteria pollutant from a baseline concentration. Because increments only apply in areas covered by the PSD program, they are generally known as PSD increments.

- EPA is proposing three options for developing and setting PSD increments.
    - For the first option, EPA would treat PM2.5 as a new pollutant, rather than a new indicator of particulate matter. This is the same "percent of NAAQS" approach that we used to establish nitrogen

oxide (NOx) increment regulations on October 12, 2005 (70 FR at 59586).

- The other two options are variations of an approach EPA has used to establish increments in the past. It is known as the "equivalent increment" approach and based upon a relationship between emissions to observable environmental impacts.

Significant Impact Levels (SILs)

- The SIL is a de minimis threshold applied to individual facilities that apply for a permit to emit a regulated pollutant in an area that meets the NAAQS. The state and EPA must determine if emissions from that facility will cause the air quality to worsen. The SIL is a measure of whether a source may cause or contribute to a violation of PSD increment or the NAAQS, i.e. a significant deterioration of air quality.

- If an individual facility projects an increase in emissions that result in ambient impacts greater than the established SIL, the permit applicant would be required to perform additional analyses to determine if those impacts will be more than the amount of the PSD increment. This analysis would combine the impact of the proposed facility when added on to all other sources in the area.

- EPA is proposing three options for developing SILs for PM2.5:
  1. For Class I areas EPA would set the SIL to 4 percent of the Class I PM.2.5 increment. Class I areas have the most stringent levels of protection under the PSD program. For Class II and Class III areas, EPA would establish the SIL values of 1.0 $\mu g/m^3$ for the annual averaging period and 5.0 $\mu g/m^3$ for the 24-hour averaging period. These are the same levels that already exist for PM10 in 40 CFR 51.165(b)(2).
  2. EPA would set the value of the PM2.5 SILs by adjusting PM10 SILs as a proportion of the typical point source emissions ratio of PM2.5 to PM10.
  3. EPA would set the value of the PM2.5 SILs by adjusting PM10 SILs as a proportion of the NAAQS ratio of PM2.5 to PM10.

Significant Monitoring Concentration (SMC)

- The third measure of air quality being addressed in todays action is the Significant Monitoring Concentration (SMC). The PSD program requires facilities to gather and submit 1-year pre-application ambient monitoring data. As part of a permit application, the applicant must conduct modeling to demonstrate the impact of proposed emissions on air quality. If modeling shows an increase in ambient concentrations of

pollution by an amount less than the SMC that EPA is proposing today, the source is exempted from the monitoring data requirement.

- EPA is seeking comments on three options for calculating the SMC:
    1. EPA is proposing that the SMC be based on the "Lowest Detection Concentration," using the approach that was used for establishing the SMC for Total Suspended Particulate (TSP) and PM10. i.e., determining the lowest detectable concentration and multiplying this value by five. The rule provides the historical and technical rationale for multiplying this value by 5.
    2. EPA would set the value of the PM2.5 SMC by adjusting (multiplying) the PM10 SMC by the proportion of PM2.5 emissions compared to PM10 emissions. EPA calculated the PM2.5/PM10 emissions ratio as a national average using the 2001 extrapolation of the 1999 National Emissions Inventory for point sources.
    3. EPA is proposing to set the PM2.5 SMC by adjusting (multiplying) the PM10 SMC by the proportion of the PM2.5 NAAQS to the PM10 NAAQS.

- EPA will accept comment on this proposed rule for 60 days beginning upon publication in the Federal Register.

BACKGROUND

- Congress established the NSR program as part of the 1977 Clean Air Act Amendments and modified it in the 1990 Amendments. NSR is a preconstruction permitting program that serves two important purposes.
    - First, it ensures the maintenance of air quality standards when factories, industrial boilers and power plants are modified or added. In areas that do not meet the national air quality standards, NSR assures that new emissions do not slow progress toward cleaner air. In areas that meet the standards, especially pristine areas like national parks, NSR assures that new emissions fall within air quality standards.
    - Second, the NSR program assures that state-of-the-art control technology is installed at new plants or at existing plants that are undergoing a major modification.

- Airborne particles with a diameter of 2.5 micrometers or less are considered "fine particulate matter," and are referred to as PM2.5. While their nature is complex, common constituents of fine particles include sulfate, nitrate, ammonium, elemental carbons, a great variety of organic compounds, and other inorganic materials.

- In areas that meet EPA's national air quality standards (attainment areas), the New Source Review Prevention of Significant Deterioration (PSD)

Program is in effect. The PSD program protects clean air through a system of "increments." An increment is the maximum amount air concentrations of certain pollutants may increase above the baseline concentration in an area.

- PSD increments have been established for three pollutants – Sulfur Dioxide (SO2), Particulate Matter (PM), and Nitrogen Oxides (NOx). A facility owner planning to build in an attainment area must apply for a PSD permit. As part of the application process, they must demonstrate that emissions from the proposed construction and operation of the facility will not cause or contribute to an increase above a maximum allowable concentration or increment for the target pollutant(s).

- Section 166 of the Clean Air Act authorizes the Environmental Protection Agency to establish regulations for Prevention of Significant Deterioration (PSD) of any pollutant for which EPA has issued a national standard. EPA issued the NAAQS for PM2.5 in 1997.

FOR MORE INFORMATION

- Interested parties can download information on the proposal from EPA's Web site at: www2.epa.gov/nsr.

- Today's proposed action and other background information are also available either electronically in www.regulations.gov, EPA's electronic public docket and comment system, or in hard copy at EPA's Air and Radiation Docket and Information Center, Environmental Protection Agency, Room 3334, 1301 Constitution Avenue, NW, Washington, DC (Docket ID No. EPA-HQ-OAR-2006-0605). The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air and Radiation Docket and Information Center is (202) 566-1742.

- For more information, call Mr. Raj Rao at 919-541-5344 or email at rao.raj@epa.gov.

- **HOW TO COMMENT**: EPA will accept comments on this proposed rule for 60 days beginning when this proposal is published in the Federal Register. Submit comments on this proposal, identified by Docket ID No. EPA-HQ-OAR-2006-0605 by one of the following methods:
    - http://www.regulations.gov: Follow the on-line instructions for submitting comments.
    - E-mail: a-and-r-Ddocket@epa.gov.
    - Mail: Attention Docket ID No. EPA-HQ-OAR-2006-0605, U.S. Environmental Protection Agency, EPA West (Air Docket), 1200

Pennsylvania Avenue, NW, Mail code: 2822T, Washington, DC 20460. Please include a total of 2 copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th Street, NW, Washington, DC 20503. or

- Hand Delivery: U.S. Environmental Protection Agency, EPA West (Air Docket), 1301 Constitution Avenue, Northwest, Room 3334, Washington, DC 20004, Attention Docket ID No. EPA-HQ-OAR-2006-0605. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.