



TECHNICAL SUPPORT DOCUMENT

Amendments to COMAR 26.11.01.01 General Administrative Provisions and Regulations .01 and .02 under COMAR 26.11.17 Nonattainment Provisions for Major New Sources and Major Modifications

Purpose of the New Regulations/Amendments

The purpose of this action is to incorporate federal standards for the New Source Review (NSR) program for fine particulate matter and its precursors into the Code of Maryland Regulations (COMAR). Fine particulate matter is defined as particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers and is referred to as PM_{2.5}. Maryland's nonattainment area (NAA) NSR program is contained in COMAR 26.11.17, and applies to major stationary sources and major modifications which are major for PM_{2.5} or its precursors at facilities located in Baltimore City, Anne Arundel, Baltimore, Carroll, Charles, Frederick, Harford, Howard, Montgomery, Prince George's and Washington counties.

Submission to EPA as Revision to Maryland's SIP (or 111(d) Plan, or Title V Program)

These amendments will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's State Implementation Plan (SIP).

Background

On July 18, 1997, the EPA revised the National Ambient Air Quality Standards (NAAQS) for PM to add new standards for fine particles, using PM 2.5 as the indicator. Health-based (primary) annual and 24-hour standards for PM_{2.5} were established at 15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and 65 $\mu\text{g}/\text{m}^3$, respectively (62 FR 38652). At the same time that the primary standards were set, the EPA also established welfare-based (secondary) standards identical to the primary standards.

Epidemiological studies measuring health effects associated with PM_{2.5} have shown a significant correlation between elevated PM_{2.5} levels and premature mortality. Other important effects associated with PM_{2.5} exposure include aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems. Individuals particularly sensitive to PM_{2.5} exposure include older adults, people with heart and lung disease, and children.

The Clean Air Fine Particle Implementation Rule was proposed in the Federal Register on November 1, 2005 and included proposed revisions to the NSR program along with plans to implement the 1997 PM_{2.5} NAAQS (70 FR 65984). Details included requirements and guidance for State and local air pollution agencies to follow in developing State Implementation Plans

(SIPs) and NSR program provisions. On April 25, 2007, the final implementation rule that included all the SIP related provisions was promulgated by the EPA (72 FR 20585).

On October 17, 2006, the EPA revised the primary and secondary NAAQS for PM_{2.5} and PM₁₀ (71 FR 61143). In the final rule, the EPA reduced the 24-hour NAAQS for PM_{2.5} to 35 µg/m³ and retained the existing annual PM_{2.5} NAAQS of 15 µg/m³.

On May 16, 2008, the EPA finalized the NSR provisions of the November 1, 2005 proposed rule, and included details on major source threshold, significant emissions rate, and applicability of NSR to PM_{2.5} precursors (“Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM_{2.5})” (73 FR 28321)). In this final rule, changes associated with PM_{2.5} and its precursors to nonattainment area (NAA) NSR and NSR prevention of significant deterioration (PSD) programs were established.

In the development of the federal regulation, the EPA identified sulfur dioxide (SO₂) and nitrogen oxides (NO_x) as precursors for PM_{2.5}; the MDE is adopting the same precursors (SO₂ and NO_x) to its nonattainment program for PM_{2.5}. Per 73 FR 28321, the final federal rule was effective on July 15, 2008, and the federal NSR requirements were effective on January 1, 2011.

Affected Sources

Section I.A. of 73 FR 28321 identifies the following industries as potentially affected by this new rule: electric services, petroleum refining, industrial organic/inorganic chemicals, natural gas liquids, natural gas transport, pulp and paper mill, automobile manufacturing and pharmaceuticals. Major stationary sources and major modifications located in PM_{2.5} nonattainment areas in Maryland, specifically in Baltimore City, Anne Arundel, Baltimore, Carroll, Charles, Frederick, Harford, Howard, Montgomery, Prince George's and Washington counties, would therefore be subject to the NSR program.

A review of sources located in Maryland and which submitted annual emission certification reports between 2007 and 2010 identified ten (10) sources with emissions greater than 100 tons per year (tpy) PM_{2.5}. Evaluating this, these sources, if newly locating to Maryland, would trigger NSR for major stationary sources. This in turn suggests that historically a limited number of sources would have been affected by this regulation.

Of the ten (10) sources reporting greater than 100 tpy PM_{2.5} between the period of 2007 and 2010, seven (7) are electric generating units.

Requirements

These amendments to COMAR 26.11.17, Nonattainment Provisions for Major New Sources and Major Modifications, reflecting the amendments to 40 CFR 51.165 and 40 CFR 51 Appendix S, establish the following:

- SO₂ and NO_x are precursors to PM_{2.5};
- The emission rate applicable to Major Stationary Source threshold for PM_{2.5} and its precursors is 100 tpy; and
- The emission rate applicable to Major Modification for PM_{2.5} is 10 tpy direct PM_{2.5}, 40 tpy of

SO₂ and 40 tpy of NO_x.

Nonattainment NSR requirements include, but are not limited to:

- Installation of Lowest Achievable Emission Rate (LAER) control technology;
- Offsetting new emissions with creditable emissions reductions;
- Certification that all major sources owned and operated in the State by the same owner are in compliance with all applicable requirements under the Act;
- An alternative siting analysis demonstrating that the benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification; and
- Public comment on the permit.

Expected Emissions Reductions

The offset requirements of the amendments require emission reductions equal to the emissions of the new PM_{2.5} major source or major modification to occur or to have occurred in the past so that emissions in the NAA with the new source are equal to emissions in the NAA without the source. A source must also install controls to comply with the lowest achievable emission rate which may not have occurred in the absence of the NSR program.

Comparison to Federal Standards

There is a corresponding federal standard to this proposed action, but the proposed action is not more restrictive or stringent.

The federal nonattainment area New Source Review (NSR) requirements for PM_{2.5} are contained in 40 CFR 52.24, 40 CFR 51.165 and 40 CFR Part 51, Appendix S.

Economic Impact on Affected Sources, the Department, other State Agencies, Local Government, other Industries or Trade Groups, the Public

With the inclusion of PM_{2.5} NAA NSR program into COMAR 26.11.17, there may be an associated cost on affected facilities. At the time that a facility becomes subject to the NSR program as a new major stationary source or major modification in an area of nonattainment, at a minimum the following requirements must be met:

- Installation of Lowest Achievable Emission Rate (LAER) control technology;
- Offsetting new emissions with creditable emissions reductions; and
- An alternative siting analysis demonstrating that the benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification.

Each of these requirements have an associated cost, impacted by the size, complexity and other pollutants emitted from the facility.

Additional economic impact on affected sources would be incurred due to costs associated with measuring, recording and reporting requirements.

There is no impact on the Department as a result of these amendments.

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Economic Impact on Small Businesses

The proposed action has minimal or no economic impact on small businesses.