6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 51 and 52

[EPA-HQ-OAR-2003-0062; FRL-]

RIN 2060-AN86

Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers ($PM_{2.5}$)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The EPA is finalizing regulations to implement the New Source Review (NSR) program for fine particulate matter (that is, particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers, generally referred to as “$PM_{2.5}$”). The NSR program was created by the Clean Air Act (Act or CAA) to ensure that stationary sources of air pollution are constructed or modified in a manner that is consistent with air quality goals in the area.

The Clean Air Fine Particle Implementation Rule, which was proposed in the Federal Register on November 1, 2005, included requirements and guidance for State and local air pollution agencies to follow in developing State implementation plans (SIPs) and also the NSR provisions. The final implementation rule that was promulgated on April 25, 2007, included all the SIPs related provisions. In this rulemaking, EPA is finalizing the NSR provisions of the November 1, 2005 proposed rule including the major source threshold, significant emissions rate, and offset ratios for $PM_{2.5}$, interpollutant trading for offsets and applicability of NSR to $PM_{2.5}$ precursors.

DATES: This final rule is effective on **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2003-0062. All documents in the docket are listed on the www.regulations.gov web site. Although listed in the index, some information may not be publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through www.regulations.gov or in hard copy at the Air Docket, EPA/DC, EPA West, Room 3334, 1301 Constitution Avenue, Northwest, Washington, DC. 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 Docket is (202) 566-1742.

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SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

Entities affected by this rule include sources in all industry groups. The majority of sources potentially affected are expected to be in the following groups:

Industry group	NAICS[a]
Electric services	221111, 221112, 221113, 221119, 221121, 221122
Petroleum refining	32411
Industrial inorganic chemicals	325181, 32512, 325131, 325182, 211112, 325998, 331311, 325188
Industrial organic chemicals	32511, 325132, 325192, 325188, 325193, 32512, 325199
Miscellaneous chemical products	32552, 32592, 32591, 325182, 32551
Natural gas liquids	211112
Natural gas transport	48621, 22121
Pulp and paper mills	32211, 322121, 322122, 32213
Paper mills	322121, 322122
Automobile manufacturing	336111, 336112, 336712, 336211, 336992, 336322, 336312, 33633, 33634, 33635, 336399, 336212, 336213
Pharmaceuticals	325411, 325412, 325413, 325414

[a] North American Industry Classification System.

Entities affected by this rule also include States, local reviewing authorities, and Indian country with new and modified major stationary sources.

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this final rule will also be available on the World Wide Web. Following signature by the EPA Administrator, a copy of this final rule will be posted in the regulations and standards section of our NSR home page located at http://www.epa.gov/nsr.

C. How is this preamble organized?

The information presented in this preamble is organized as follows:

II. Purpose

The purpose of this rulemaking is to finalize the major NSR program provisions for $PM_{2.5}$. This final rule supplements the final implementation rule for $PM_{2.5}$ (excluding the NSR provisions) that we[1] promulgated on April 25, 2007 at 72 FR 20586. This final action on the bulk of the major NSR program for $PM_{2.5}$ along with our proposed rule on increments, SILs, and SMC, when final, will represent the final elements necessary to implement a $PM_{2.5}$ PSD program. When both rules are promulgated and in effect, the $PM_{2.5}$ PSD program will no longer use a PM_{10} program as a surrogate, as has been the

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[1] In this proposal, the terms “we,” “us,” and “our” refer to the EPA and the terms “you” and “your” refer to the owners or operators of stationary sources of air pollution.

practice under our existing guidance.

III. Background

A. New Source Review (NSR) Program

The existing regulations require both major and minor NSR programs to address any pollutant for which there is a National Ambient Air Quality Standard (NAAQS) and precursors to the formation of such pollutant when identified for regulation by the Administrator. This final rule amends the NSR regulations to establish the minimum elements for State, local, and Tribal agency programs implementing NSR for the $PM_{2.5}$ NAAQS. This preamble also explains what interim provisions would apply with respect to $PM_{2.5}$ during the State Implementation Plan (SIP) development period.

The NSR program is a preconstruction permitting program that applies when a source is constructed or modified. The NSR program is composed of three different programs:

- Prevention of Significant Deterioration (PSD);
- Nonattainment NSR (NA NSR); and
- Minor NSR.

We often refer to the PSD and NA NSR programs together as the major NSR program because these programs regulate only major sources.[2]

The PSD program applies when a major source that is located in an area that is designated as attainment or unclassifiable for any criteria pollutant is constructed or

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[2] The Act uses the terms "major emitting facility" to refer to sources subject to the PSD program, and "major stationary source" to refer to sources subject to NA NSR. See CAA sections 165, 169, 172(c)(5), and 302(j). For ease of reference, we use the term "major source" to refer to both terms.

undergoes a major modification.[3, 4] The NA NSR program applies when a major source that is located in an area that is designated as nonattainment for any criteria pollutant is constructed or undergoes a major modification. The minor NSR program addresses both major and minor sources that undertake construction or modification activities that do not qualify as major, and it applies regardless of the designation of the area in which a source is located.

The national regulations that apply to each of these programs are located in the Code of Federal Regulations (CFR) as shown in the following table:

Program	Applicable regulations
PSD	40 CFR 52.21, 40 CFR 51.166, 40 CFR 51.165(b)
NA NSR	40 CFR 52.24, 40 CFR 51.165, 40 CFR part 51, appendix S
Minor NSR.....................	40 CFR 51.160-164

The PSD requirements include but are not limited to:

- Installation of Best Available Control Technology (BACT);
- Air quality monitoring and modeling analyses to ensure that a project's emissions will not cause or contribute to a violation of any NAAQS or maximum allowable pollutant increase (PSD increment);
- Notification of Federal Land Manager of nearby Class I areas; and
- Public comment on the permit.

Nonattainment NSR requirements include but are not limited to:

- Installation of Lowest Achievable Emission Rate (LAER) control technology;

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[3] The term "criteria pollutant" means a pollutant for which we have set a NAAQS.

[4] In addition, the PSD program applies to most noncriteria regulated pollutants.

- 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.

Minor NSR programs must meet the statutory requirements in section 110(a)(2)(C) of the Act, which requires "… regulation of the modification and construction of any stationary source … as necessary to assure that national ambient air quality standards are achieved."

B. Fine Particulate Matter and the NAAQS for $PM_{2.5}$

Fine particles in the atmosphere are made up of a complex mixture of components. Common constituents include sulfate (SO_4); nitrate (NO_3); ammonium; elemental carbon; a great variety of organic compounds; and inorganic material (including metals, dust, sea salt, and other trace elements) generally referred to as "crustal" material, although it may contain material from other sources. Airborne particulate matter (PM) with a nominal aerodynamic diameter of 2.5 micrometers or less (a micrometer is one-millionth of a meter, and 2.5 micrometers is less than one-seventh the average width of a human hair) are considered to be "fine particles," and are also known as $PM_{2.5}$. "Primary" particles are emitted directly into the air as a solid or liquid particle (e.g., elemental carbon from diesel engines or fire activities, or condensable organic particles from gasoline engines). "Secondary" particles (e.g., sulfate and nitrate) form in the atmosphere as a result of various chemical reactions.

The health effects associated with exposure to $PM_{2.5}$ are significant. Epidemiological studies 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 (as indicated by increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days), 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.

On July 18, 1997, we revised the NAAQS for PM to add new standards for fine particles, using $PM_{2.5}$ as the indicator. We established health-based (primary) annual and 24-hour standards for $PM_{2.5}$ (62 FR 38652). We set an annual standard at a level of 15 micrograms per cubic meter ($\mu g/m^3$) and a 24-hour standard at a level of 65 $\mu g/m^3$. At the time we established the primary standards in 1997, we also established welfare-based (secondary) standards identical to the primary standards. The secondary standards are designed to protect against major environmental effects of $PM_{2.5}$ such as visibility impairment, soiling, and materials damage.

On October 17, 2006, we revised the primary and secondary NAAQS for $PM_{2.5}$ and PM_{10}. In that rulemaking, we reduced the 24-hour NAAQS for $PM_{2.5}$ to 35 $\mu g/m^3$ and retained the existing annual $PM_{2.5}$ NAAQS of 15 $\mu g/m^3$. In addition, we retained PM_{10} as the indicator for coarse PM, retained the existing PM_{10} 24-hour NAAQS of 150 $\mu g/m^3$, and revoked the annual PM_{10} NAAQS (which had previously been set at 50 $\mu g/m^3$). See 71 FR 61236.

C. Implementation of NSR for $PM_{2.5}$

After we promulgated the NAAQS for $PM_{2.5}$ in 1997, we issued a guidance document entitled "Interim Implementation for the New Source Review Requirements for $PM_{2.5}$" (John S. Seitz, EPA, October 23, 1997).[5] As noted in that guidance, section 165 of the Act suggests that PSD requirements become effective for a new NAAQS upon the effective date of the NAAQS. Section 165(a)(1) of the Act provides that no new or modified major source may be constructed without a PSD permit that meets all of the section 165(a) requirements with respect to the regulated pollutant. Moreover, section 165(a)(3) provides that the emissions from any such source may not cause or contribute to a violation of any NAAQS. Also, section 165(a)(4) requires BACT for each pollutant subject to PSD regulation. The 1997 guidance stated that sources would be allowed to use implementation of a PM_{10} program as a surrogate for meeting $PM_{2.5}$ NSR requirements until certain difficulties were resolved, primarily the lack of necessary tools to calculate the emissions of $PM_{2.5}$ and related precursors, the lack of adequate modeling techniques to project ambient impacts, and the lack of $PM_{2.5}$ monitoring sites.

On April 5, 2005, we issued a guidance document entitled "Implementation of New Source Review Requirements in PM-2.5 Nonattainment Areas" (Stephen D. Page, EPA).[6] This memorandum provides guidance on the implementation of the nonattainment major NSR provisions in $PM_{2.5}$ nonattainment areas in the interim period between the effective date of the $PM_{2.5}$ NAAQS designations (April 5, 2005) and the

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[5] Available in the docket for this rulemaking, ID No. EPA-HQ-OAR-2003-0062, and at http:/www.epa.gov/region07/programs/artd/air/nsr/nsrmemos/pm25.pdf .

[6] Available in the docket for this rulemaking, ID. No. EPA-HQ-OAR-2003-0062, and at http:/www.epa.gov/nsr/documents/nsrmemo.pdf.

promulgation date of the final NSR regulations reflected in this action. Besides affirming the continuation of the Seitz guidance memo in $PM_{2.5}$ attainment areas, the April 5, 2005 memo recommends that until we promulgate the $PM_{2.5}$ major NSR regulations, States should use a PM_{10} nonattainment major NSR program as a surrogate to address the requirements of nonattainment major NSR for $PM_{2.5}$.

On November 1, 2005, we proposed a rule to implement the 1997 $PM_{2.5}$ NAAQS, including proposed revisions to the NSR program (70 FR 65984). As discussed above, this action finalizes the portion of that proposal related to NSR. The other portions of that proposal, concerning attainment dates, SIP submittals, reasonable further progress (RFP) requirements, etc., were finalized on April 25, 2007 (72 FR 20586).

On September 21, 2007, we proposed additional elements for the PSD program for $PM_{2.5}$ including $PM_{2.5}$ “increments,” significant impact levels (SILs), and significant monitoring concentrations (SMCs). (72 FR 54112) Increments are the maximum allowable increases over baseline concentrations that can be permitted to occur when a major source is constructed or modified. This is one mechanism by which the PSD program prevents significant deterioration in air quality. A SIL defines the level of ambient air impact that is considered a “significant contribution” to air quality. If the modeled maximum ambient impacts of a new source or modification are below the SILs, the source: (1) is presumed not to cause or contribute significantly to a PSD increment or NAAQS violation, and (2) is not required to perform the multiple-source, cumulative impacts assessments that are otherwise required under PSD. An SMC defines the level of modeled ambient air impact below which the reviewing authority may exempt a new or modified source from conducting the preconstruction monitoring that may otherwise be required under PSD. The reviewing authority may also exempt the source from preconstruction monitoring if the existing monitored ambient concentration is less than the SMC. This final action on the bulk of the major NSR program for $PM_{2.5}$ along with our proposed rule on increments, SILs, and SMC, when final, will represent the final elements necessary to implement a $PM_{2.5}$ PSD program. When both rules are promulgated and in effect, the $PM_{2.5}$ PSD program will no longer use a PM_{10} program as a surrogate, as has been the practice under our existing guidance.

IV. Overview of This Final Action

The table below summarizes the main elements of the existing NSR program that this action addresses for $PM_{2.5}$ as a regulated NSR pollutant. The table indicates our final position on an issue and whether our position has changed based on comments received. Our final action for each element, or where appropriate, explanation of implementation under existing regulations, is addressed in detail in the referenced sections of this preamble.

NSR program element	Final action	Section
Applicability to $PM_{2.5}$ precursors....	SO_2 – Must be regulated as precursor NO_X – Presumed regulated VOC – Presumed not regulated Ammonia – Presumed not regulated	V.A
PSD major source threshold...........	100/250 tons per year (tpy)......................	V.B
NA NSR major source threshold	100 tpy	V.B
Significant emissions rate	Direct $PM_{2.5}$ emissions – 10 tpy SO_2 precursor – 40 tpy NO_X precursor – 40 tpy, if regulated	V.C & V.D
Condensable $PM_{2.5}$ emissions.........	Included in direct $PM_{2.5}$ emissions for major NSR applicability determinations after the end of the transition period **(changed based on comments received)**	V.E

Control technology: BACT and LAER	Applies for direct $PM_{2.5}$ emissions, SO_2, and other precursors if regulated.	V.F.1 & V.G
Prevention of significant deterioration	Increments, SILs and SMCs covered in a separate rulemaking	V.F.2
Air quality impact analysis	Applies for $PM_{2.5}$	V.F.3
Preconstruction monitoring............	Applies for $PM_{2.5}$ (finalizing options 1 & 3)	V.F.4
NA NSR Statewide compliance and alternative siting analyses	Applies for direct $PM_{2.5}$ emissions and precursors, if regulated	V.G
NA NSR offsets	Applies for direct $PM_{2.5}$ emissions and precursors, if regulated	V.G.1 - 3
Interpollutant offsetting	Allowed on a regional or statewide basis; EPA is issuing guidance with recommended regional hierarchies and trading ratios **(changed based on comments received)**	V.G.4
Transition for PSD	Continues to use PM_{10} as a surrogate	V.H
Transition for NA NSR..................	Applies through an approved SIP or through 40 CFR part 51, appendix S	V.I
SIP development period.................	Clarifies that major NSR does not apply to precursors during the SIP development period in attainment areas **(changed based on comments received)**	V.J
Tribal Concerns..............................	Cross references to proposed NSR rules for Indian country	V.K
Minor NSR.....................................	Clarifies that State and local regulatory programs must include $PM_{2.5}$ requirements for minor sources	V.L
NSR transport option	Transport classification not available	V.M

The provisions of the $PM_{2.5}$ major NSR program finalized in this action are codified as revisions in the previously existing regulatory text. The revisions to NA NSR are codified in 40 CFR 51.165 and appendix S to 40 CFR part 51. The PSD revisions are codified in 40 CFR 51.166 and 52.21.

V. Rationale for Final Actions

In this section we discuss each element of our proposal for this rulemaking, explain our final action, discuss the rationale for our final action, and summarize the major public comments we received. The full summary of public comments on the proposal, along with our responses, can be found in the docket for this rulemaking.[7]

A. Applicability of NSR to Precursors of $PM_{2.5}$ in the Ambient Air

Scientific research has shown that various pollutants can contribute to ambient $PM_{2.5}$ concentrations. In addition to direct $PM_{2.5}$ emissions, these include the following precursors:

- Sulfur dioxide (SO_2);
- Oxides of nitrogen (NO_X);
- Volatile organic compounds (VOC); and
- Ammonia.

These gas-phase precursors undergo chemical reactions in the atmosphere to form secondary PM. Formation of secondary PM depends on numerous factors including the concentrations of precursors; the concentrations of other gaseous reactive species; atmospheric conditions including solar radiation, temperature, and relative humidity; and the interactions of precursors with preexisting particles and with cloud or fog droplets. Several atmospheric aerosol species, such as ammonium nitrate and certain organic compounds, are semi-volatile and are found in both gas and particle phases. Given the

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[7] See "Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers in Diameter ($PM_{2.5}$); Response to Comments," U.S. Environmental Protection Agency. It can be viewed or downloaded at www.regulations.gov, Docket ID No. EPA-HQ-OAR-2003-0062.

complexity of PM formation processes, new information from the scientific community continues to emerge to improve our understanding of the relationship between sources of PM precursors and secondary particle formation.

Precursors contribute significantly to ambient $PM_{2.5}$ concentrations, producing approximately half of the concentration nationally. In most areas of the country, $PM_{2.5}$ precursor emissions are major contributors to ambient $PM_{2.5}$ concentrations. The relative contribution to ambient $PM_{2.5}$ concentrations from each of these pollutants varies by area. The relative effect of reducing emissions of these pollutants is also highly variable.

Some $PM_{2.5}$ precursors are already subject to major NSR under other NAAQS, as shown in the following table:

$PM_{2.5}$ precursor	Existing program coverage for major NSR applicability
NO_X..	NA NSR and PSD for NO_2 and Ozone
SO_2...	NA NSR and PSD for SO_2
VOC.......................................	NA NSR and PSD for Ozone
Ammonia................................	No coverage for NSR

In the subsections that follow, we first discuss our legal authority under the Act for regulating precursors to the formation of criteria pollutants, and then discuss our final action for each of the $PM_{2.5}$ precursors.

1. What is EPA's legal authority to regulate precursors?

As we discussed in the November 1, 2005 proposal, we interpret the Act to not only provide explicit authority for EPA to regulate precursors, but also to grant us discretion to determine how to address precursors for particular regulatory purposes. This reading is based on section 302(g) of the Act, which defines the term "air pollutant" to include "any precursors to the formation of any air pollutant, to the extent the

Administrator has identified such precursor or precursors for the particular purpose for which the term ‘air pollutant’ is used.” The first clause of this second sentence in section 302(g) explicitly authorizes the Administrator to identify and regulate precursors as air pollutants under other parts of the Act. In addition, the second clause of the sentence indicates that the Administrator has discretion to identify which pollutants should be classified as precursors for particular regulatory purposes. Thus, we do not necessarily construe the Act to require that EPA identify a particular precursor as an air pollutant for all regulatory purposes where it can be demonstrated that various programs under the Act address different aspects of the air pollutant problem. Likewise, we do not interpret the Act to require that EPA treat all precursors of a particular pollutant the same under any one program when there is a basis to distinguish between such precursors within that program. For example, in a recent rule addressing $PM_{2.5}$ precursors for purposes of the transportation conformity program, we chose to adopt a different approach for one precursor based on the limited emissions of that precursor from onroad mobile sources and the degree to which it contributes to $PM_{2.5}$ concentrations (70 FR 24280, May 6, 2005).

Other provisions of the Act reinforce our reading of section 302(g) to mean that Congress intended precursors to NAAQS pollutants to be subject to the air quality planning and control requirements of the Act, but also recognized that there may be circumstances where it is not appropriate to subject precursors to certain requirements of the Act. Section 182 of the Act provides for the regulation of NO_X and VOC as precursors to ozone in ozone nonattainment areas, but also provides in section 182(f) that major stationary sources of NO_X (an ozone precursor) are not subject to emission reduction requirements for ozone where the State shows through modeling that NO_X reductions do not decrease ozone. Section 189(e) provides for the regulation of PM_{10} precursors in PM_{10} nonattainment areas, but also recognizes that there may be certain circumstances (e.g., if precursor emission sources do not significantly contribute to PM_{10} levels) where it is not appropriate to apply control requirements to PM_{10} precursors. The legislative history of section 189(e) recognized the complexity behind the science of precursor transformation into PM_{10} ambient concentrations and the need to harmonize the regulation of PM_{10} precursors with other provisions of the Act:

> The Committee notes that some of these precursors may well be controlled under other provisions of the CAA. The Committee intends that . . .the Administrator will develop models, mechanisms, and other methodology to assess the significance of the PM_{10} precursors in improving air quality and reducing PM_{10}. Additionally, the Administrator should consider the impact on ozone levels of PM_{10} precursor controls. The Committee expects the Administrator to harmonize the PM_{10} reduction objective of this section with other applicable regulations of this CAA regarding PM_{10} precursors, such as NO_X.

See H. Rpt. 101-490, Pt. 1, at 268 (May 17, 1990), reprinted in S. Prt. 103-38, Vol. II, at 3292.

In summary, section 302(g) of the Act clearly calls for the regulation of precursor pollutants, but the Act also identifies circumstances when it may not be appropriate to regulate precursors and gives the Administrator discretion to determine how to address particular precursors under various programs required by the Act. Due to the complexities associated with precursor emissions and their variability from location to location, we believe that in certain situations it may not be effective or appropriate to control a certain precursor under a particular regulatory program or for EPA to require similar control of a particular precursor in all areas of the country.

The term “air pollutant,” as defined in section 302(g), is incorporated into the NSR provisions for various purposes. Thus, we interpret section 302(g) of the Act to require us to consider how to address precursors under the NSR program.

With regard to PSD, section 165(a)(3) of the Act states that new or modified major sources must demonstrate that emissions “will not cause, or contribute to, air pollution in excess of any … NAAQS in any air quality control region ….” A source could not reasonably make this demonstration without considering precursors that EPA has identified for this purpose. Section 165(a)(4) of the Act states that a new or modified source must apply BACT “for each pollutant subject to regulation under this Act emitted from, or which results from, such facility.” The phrase “emitted from, or which results from” indicates that the statute is not limited to direct emissions, but rather extends to precursors as well.

With regard to NA NSR, sections 172(c)(4) and 173 require States to demonstrate, among other things, that emissions from new or modified major sources are consistent with the achievement of “reasonable further progress.” Reasonable further progress is further defined as reductions of the relevant air pollutant, which is defined in section 302(g) to include precursors identified by EPA as subject to regulation for that purpose.

2. What is EPA’s approach for addressing precursors?

As proposed, we are finalizing different approaches for addressing the individual precursors to $PM_{2.5}$ under the Act’s NSR provisions. Generally, where the scientific data and modeling analyses provide reasonable certainty that the pollutant’s emissions are a significant contributor to ambient $PM_{2.5}$ concentrations, we believe that pollutant should be identified as a “regulated NSR pollutant” and subject to the $PM_{2.5}$ NSR provisions. Conversely, where the effect of a pollutant’s emissions on ambient $PM_{2.5}$ concentrations is subject to substantial uncertainty, such that in some circumstances the pollutant may not result in formation of $PM_{2.5}$, or control of the pollutant may have no effect or may even aggravate air quality, we generally believe it is unreasonable to establish a nationally-applicable presumption that the pollutant is a regulated NSR pollutant subject to the requirements of NSR for $PM_{2.5}$. We discuss our final action with respect to each of the $PM_{2.5}$ precursors and the basis for that action in sections V.A.2 through 5.

For those precursors that are either presumed to be regulated or not regulated (NO_X, VOC, and ammonia), a State program need not follow the presumed approach if it can be demonstrated that the precursor in question is not, or is, a “significant contributor” to $PM_{2.5}$ concentrations within the specific area. “Significant contribution” in this context is a different concept than that in section 110(a)(2)(D) of the Act. Section 110(a)(2)(D) of the Act prohibits States from emitting air pollutants in amounts which significantly contribute to nonattainment or other air quality problems in other States. Consistent with the previous discussion of sections 189(e) and 302(g), we are clarifying that the use in this NSR implementation rule of the term “significant contribution” to the area’s $PM_{2.5}$ concentration means that a significant change in emissions of the precursor from sources in the area would be projected to provide a significant change in $PM_{2.5}$ concentrations in the area. For example, if modeling indicates that a reduction in an area’s NO_X emissions would reduce ambient $PM_{2.5}$ levels in the area, but that a reduction in ammonia emissions would result in virtually no change in ambient $PM_{2.5}$ levels, this would suggest that NO_X is a significant contributor but that ammonia is not. We are not establishing in this rule a quantitative test for determining whether $PM_{2.5}$ levels in an area change significantly in response to reductions in precursor emissions in the area. However, in considering this question, it is relevant to consider that relatively small reductions in $PM_{2.5}$ levels are estimated to result in worthwhile public health benefits.

This approach to identifying a precursor as a regulated NSR pollutant reflects atmospheric chemistry conditions in the area and the magnitude of emissions of the precursor in the area. Assessments of whether it is technically feasible and cost effective to control particular emissions units at a source should be part of the later BACT determination within a permit action, and should occur after the basic assessment of which precursors are to be regulated NSR pollutants in an area is completed.

Most commenters did not question our legal authority to identify and regulate $PM_{2.5}$ precursors. However, some commenters argued, based on the language of sections 302(g) and 189(e) of the Act, that once we have designated a compound as a precursor, we do not have discretion to presumptively exclude it from NSR requirements. Other commenters on this issue indicated that we do have such discretion, based on the de minimis doctrine of the Alabama Power decision or on practical implementation considerations such as the uncertainty in measuring and modeling the effect of $PM_{2.5}$ precursors.

We do not agree with the comment that the Act does not give us discretion to presumptively exclude a $PM_{2.5}$ precursor from NSR requirements. As stated previously, we believe that section 302(g) allows the Administrator to presumptively not require certain precursors to be addressed in $PM_{2.5}$ NSR programs generally, while allowing the State or EPA to make a finding for a specific area to override the general presumption. In the following pollutant-specific sections of this preamble, we find that at this time there is sufficient uncertainty regarding whether certain precursors significantly contribute to $PM_{2.5}$ concentrations in all areas such that the policy set forth in this rule does not presumptively require certain precursors (ammonia, VOC) to be controlled in each area. However, the State or EPA may reverse the presumption and regulate a precursor if it provides a demonstration showing that the precursor is a significant contributor to $PM_{2.5}$ concentrations in the area. In addition, if in the State's NSR program adoption process a commenter provides additional information suggesting an alternative policy for regulating a particular precursor, the State will need to respond to this information in its rulemaking action.

Hence, we continue to believe that the Act provides us the authority not only to identify and regulate precursors to $PM_{2.5}$, but also to treat precursors of the same pollutant differently under the same program.

3. Final Action on SO_2

Sulfur dioxide is emitted mostly from the combustion of fossil fuels in boilers operated by electric utilities and other industrial sources. Less than 20 percent of SO_2 emissions nationwide are from other sources, mainly other industrial processes such as oil refining and pulp and paper production. The formation of sulfuric acid from the oxidation of SO_2 is an important process affecting most areas in North America. There are three different pathways for this transformation.

First, gaseous SO_2 can be oxidized by the hydroxyl radical (OH) to create sulfuric acid. This gaseous SO_2 oxidation reaction occurs slowly and only in the daytime. Second, SO_2 can dissolve in cloud water (or fog or rainwater), and there it can be oxidized to sulfuric acid by a variety of oxidants, or through catalysis by transition metals such as manganese or iron. If ammonia is present and taken up by the water droplet, then ammonium sulfate will form as a precipitate in the water droplet. After the cloud changes and the droplet evaporates, the sulfuric acid or ammonium sulfate remains in the atmosphere as a particle. This aqueous phase production process involving oxidants can be very fast; in some cases all the available SO_2 can be oxidized in less than an hour. Third, SO_2 can be oxidized in reactions in the particle-bound water in the aerosol particles themselves. This process takes place continuously, but only produces appreciable sulfate in alkaline (dust, sea salt) coarse particles. Oxidation of SO_2 has also been observed on the surfaces of black carbon and metal oxide particles. During the last 20 years, much progress has been made in understanding the first two major pathways, but some important questions still remain about the smaller third pathway. Models indicate that more than half of the sulfuric acid in the eastern United States and in the overall atmosphere is produced in clouds.

The sulfuric acid formed from these pathways reacts readily with ammonia to form ammonium sulfate, $(NH_4)_2SO_4$. If there is not enough ammonia present to fully neutralize the produced sulfuric acid (one molecule of sulfuric acid requires two molecules of ammonia), part of it exists as ammonium bisulfate; NH_4HSO_4 (one molecule of sulfuric acid and one molecule of ammonia) and the particles are more acidic than ammonium sulfate. In certain situations (in the absence of sufficient ammonia for neutralization), sulfate can exist in particles as sulfuric acid, H_2SO_4. Sulfuric acid often exists in the plumes of stacks where SO_2, sulfur trioxide (SO_3), and water vapor are in much higher concentrations than in the ambient atmosphere, but these concentrations become quite small as the plume is cooled and diluted by mixing.

Because sulfate is a significant component (e.g., ranging from 9 percent to 40 percent) of $PM_{2.5}$ concentrations, and contributes to other air quality problems in all regions of the country, we proposed to require States to treat SO_2 as a $PM_{2.5}$ precursor in all areas. We are retaining the same approach for SO_2 in this final rule. Sulfate is an important precursor to $PM_{2.5}$ formation in all areas, and has a strong regional impact on $PM_{2.5}$ concentrations. This approach is consistent with past EPA regulations, such as the Clean Air Interstate Rule (CAIR), the Clean Air Visibility Rule, the Acid Rain rules, and the Regional Haze rule, each of which require SO_2 reductions to address fine particle pollution and related air quality problems. Finally, we do not believe that regulating SO_2 as a precursor to $PM_{2.5}$ is likely to add a major burden to sources, as SO_2 is already regulated as part of the NSR program for the SO_2 NAAQS.

Most commenters who addressed this issue agreed that SO_2 should be regulated as a $PM_{2.5}$ precursor, although one only supported regulation of SO_2 as a precursor in NA NSR, and not under PSD. Two commenters disagreed that SO_2 acts as precursors to $PM_{2.5}$ in all cases and indicated that it should not be regulated as an “always-in” precursor.

We find the commenters’ arguments against regulating SO_2 as a precursor unpersuasive. Sulfate is a significant fraction of $PM_{2.5}$ mass in all nonattainment areas currently, and although large SO_2 reductions are projected from electric generating units with the implementation of the CAIR program, sulfate is still projected to be a key contributor to $PM_{2.5}$ concentrations in the future, in both attainment and nonattainment areas. Sulfur dioxide emissions also lead to sulfate formation on both regional and local scales.

4. Final Action on NO_X

The sources of NO_X are numerous and widespread. The combustion of fossil fuel generates the majority of NO_X emissions, with large contributions from power generation and mobile sources. Nitrates are formed from the oxidation of NO_X into nitric acid (HNO_3) either during the daytime (reaction with OH) or during the night (reactions with ozone and water). Nitric acid continuously transfers between the gas and the condensed phases through condensation and evaporation processes in the atmosphere. However, unless it reacts with other species (such as ammonia, sea salt, or dust) to form a neutralized salt, it will volatilize and not be measured using standard $PM_{2.5}$ measurement techniques. The formation of aerosol ammonium nitrate is favored by the availability of ammonia, low temperatures, and high relative humidity. Because ammonium nitrate is semivolatile and not stable in higher temperatures, nitrate levels are typically lower in the summer months and higher in the winter months. The resulting ammonium nitrate is usually in the sub-micrometer particle size range. Reactions with sea salt and dust lead to the formation of nitrates in coarse particles. Nitric acid may be dissolved in ambient aerosol particles.

Based on a review of speciated monitoring data analyses, it is apparent that nitrate concentrations vary significantly across the country. For example, in some southeastern locations, annual average nitrate levels are in the range of 6 to 8 percent of total $PM_{2.5}$ mass, whereas nitrate comprises 40 percent or more of $PM_{2.5}$ mass in certain California locations. Nitrate formation is favored by the availability of ammonia, low temperatures, and high relative humidity. It is also dependent upon the relative degree of nearby SO_2

emissions because ammonia reacts preferentially with SO_2 over NO_X. Reductions in NO_X emissions are expected to reduce $PM_{2.5}$ concentrations in most areas. However, it has been suggested that in a limited number of areas, NO_X control would result in increased $PM_{2.5}$ mass by disrupting the ozone cycle and leading to increased oxidation of SO_2 to form sulfate particles, which are heavier than nitrate particles.

Because of these factors, we are finalizing our proposed approach to NO_X as a precursor to $PM_{2.5}$ for the NSR program. Under this approach, NO_X is presumed to be a significant contributor to ambient $PM_{2.5}$ concentrations in all PSD and NA NSR areas. However, a State or EPA may rebut this presumption for a specific area if the State demonstrates to the Administrator's satisfaction or EPA demonstrates that NO_X emissions in that area are not a significant contributor to that area's ambient $PM_{2.5}$ concentrations. If a State or EPA makes such a demonstration, NO_X would not be considered a $PM_{2.5}$ precursor under the NSR program in that area. If a State or EPA does not make such a demonstration, NO_X must be regulated as a precursor under the PSD, NA NSR, and minor source programs for $PM_{2.5}$. As discussed previously, this "presumed-in" approach is warranted based on the well-known transformation of NO_X into nitrates, coupled with the fact that nitrate concentrations vary significantly around the country. This approach is consistent with other recent EPA regulations requiring NO_X reductions, which will reduce fine particle pollution, such as the CAIR and a number of rules targeting onroad and nonroad engine emissions.

We had proposed that NO_X be presumed to be a precursor in any State that EPA has identified as a source of the $PM_{2.5}$ interstate transport problem. In the final rule, we have dropped this requirement to be consistent with EPA's Clean Air Fine Particle

Implementation Rule published on April 25, 2007. 72 FR 20586. Such a requirement is not necessary in this rule because States that contribute to downwind nonattainment for $PM_{2.5}$ are otherwise required to address transported NO_X emissions under the CAIR.

In areas where NO_X is regulated as a precursor to $PM_{2.5}$, we do not believe that this is likely to add a major burden to sources, as NO_X is already a regulated NSR pollutant. This is because NO_X is an identified precursor for the ozone NAAQS and an indicator for the NO_2 NAAQS.

Several commenters agreed that NO_X should be regulated under major NSR as a precursor to $PM_{2.5}$. Some of these commenters believe that States should not have the opportunity to demonstrate otherwise, or indicated that a waiver for exclusion of NO_X as a precursor should be allowed only if downwind States approve such a waiver. A few commenters stated that NO_X should not be regulated as a precursor to $PM_{2.5}$ in the major NSR program, either on grounds of scientific uncertainty regarding the impact of NO_X emissions on ambient $PM_{2.5}$ concentrations or on policy grounds (i.e., because NO_X is already regulated under NSR for other NAAQS).

We are not persuaded by the argument that NO_X should not be regulated as a $PM_{2.5}$ precursor because it is a regulated pollutant under other NAAQS. We do not find the degree of scientific uncertainty regarding $PM_{2.5}$ formation from NO_X to be great enough to preclude regulation of NO_X as a precursor with an opportunity for a case-by-case demonstration that NO_X is not a significant contributor. Furthermore, the fact that we regulate NO_X for other NAAQS under the NSR program does not by itself justify declining to regulate NO_X as a $PM_{2.5}$ precursor in circumstances where NO_X also significantly contributes to $PM_{2.5}$ formation. As noted earlier, the regulation of NO_X as a precursor for $PM_{2.5}$ is not expected to add a major burden to regulated sources that are already required to limit NO_X emission to meet other NAAQS.

We disagree with the commenters who believe that emissions of NO_X cannot be correlated to $PM_{2.5}$ formation, or that it is unclear when NO_X acts as a precursor. As discussed previously, our decision to regulate NO_X as a precursor to $PM_{2.5}$ is based on the well-known transformation of NO_X into nitrates. Nevertheless, nitrate concentrations vary significantly across the country. As a result, we believe that the "presumed-in" approach is appropriate for NO_X since a State can demonstrate that NO_X should not be a precursor in a given area or region.

While we recognize that NO_X emissions can affect $PM_{2.5}$ concentrations in downwind areas, we disagree that approval from downwind States should be required for a State to exclude NO_X as a $PM_{2.5}$ precursor for a particular area. This is because States that contribute to downwind nonattainment for $PM_{2.5}$ are otherwise required to address transported NO_X emissions under the CAIR.

5. Final Action on VOC

The organic component of ambient particles is a complex mixture of hundreds or even thousands of organic compounds. These organic compounds are either emitted directly from sources (i.e., primary organic aerosol) or can be formed by reactions in the ambient air (i.e., secondary organic aerosol, or SOA). Volatile organic compounds are key precursors in the formation processes for both SOA and ozone. The relative importance of organic compounds in the formation of secondary organic particles varies from area to area, depending upon local emissions sources, atmospheric chemistry, and season of the year.

The lightest organic molecules (i.e., molecules with six or fewer carbon atoms) occur in the atmosphere mainly as vapors and typically do not directly form organic particles at ambient temperatures due to the high vapor pressure of their products. However, they participate in atmospheric chemistry processes resulting in the formation of ozone and certain free radical compounds (such as OH) which in turn participate in oxidation reactions to form SOA, sulfates, and nitrates. These VOCs include all alkanes with up to six carbon atoms (from methane to hexane isomers), all alkenes with up to six carbon atoms (from ethene to hexene isomers), benzene, and many low-molecular weight carbonyls, chlorinated compounds, and oxygenated solvents.

Intermediate weight organic molecules (i.e., compounds with 7 to 24 carbon atoms) often exhibit a range of volatilities and can exist in both the gas and aerosol phase at ambient conditions. For this reason they are also referred to as semivolatile compounds. Semivolatile compounds react in the atmosphere to form SOA. These chemical reactions are accelerated in warmer temperatures, and studies show that SOA typically comprises a higher percentage of carbonaceous PM in the summer as opposed to the winter. The production of SOA from the atmospheric oxidation of a specific VOC depends on four factors: its atmospheric abundance, its chemical reactivity, the availability of oxidants (ozone, OH, HNO_3), and the volatility of its products. In addition, recent work suggests that the presence of acidic aerosols may lead to an increased rate of SOA formation. Aromatic compounds such as toluene, xylene, and trimethyl benzene are considered to be the most significant anthropogenic SOA precursors and have been estimated to be responsible for 50 to 70 percent of total SOA in some airsheds. Man-made sources of aromatics gases include mobile sources, petrochemical manufacturing, and solvents. Some of the biogenic hydrocarbons emitted by trees are also considered to be important precursors of secondary organic PM. Terpenes (and b-pinene, limonene, carene, etc.) and the sesquiterpenes are expected to be major contributors to SOA in areas with significant vegetation cover, but isoprene is not. Terpenes are very prevalent in areas with pine forests, especially in the southeastern United States. The rest of the anthropogenic hydrocarbons (higher alkanes, paraffins, etc.) have been estimated to contribute 5 to 20 percent to the SOA concentration depending on the area.

The contribution of the primary and secondary components of organic aerosol to the measured organic aerosol concentrations remains a complex issue. Most of the research performed to date has been done in southern California, and more recently in central California, while fewer studies have been completed on other parts of North America. Many studies suggest that the primary and secondary contributions to total organic aerosol concentrations are highly variable, even on short time scales. Studies of pollution episodes indicate that the contribution of SOA to the organic PM can vary from 20 percent to 80 percent during the same day.

Despite significant advances in understanding the origins and properties of SOA, it remains probably the least understood component of $PM_{2.5}$. The reactions forming secondary organics are complex, and the number of intermediate and final compounds formed is voluminous. Some of the best efforts to unravel the chemical composition of ambient organic aerosol matter have resulted in quantifying the concentrations of hundreds of organic compounds representing only 10 to 20 percent of the total organic aerosol mass. For this reason, SOA continues to be a significant topic of research and investigation.

Current scientific and technical information shows that carbonaceous material is a significant fraction of total $PM_{2.5}$ mass in most areas, that certain VOC emissions are precursors to the formation of SOA, and that a considerable fraction of the total carbonaceous material originates from local as opposed to regional sources. However, while significant progress has been made in understanding the role of gaseous organic material in the formation of organic PM, this relationship remains complex. We recognize that further research and technical tools are needed to better characterize emissions inventories for specific VOC, and to determine the extent of the contribution of specific VOC to organic PM mass.

As a result, this final rule does not, in general, require regulation of VOC as a precursor to $PM_{2.5}$ for the NSR program. However, a State may demonstrate to the Administrator's satisfaction or EPA may demonstrate that VOC emissions in a specific area are a significant contributor to that area's ambient $PM_{2.5}$ concentrations. After such a demonstration, the State would regulate VOC (or a subset of VOC) as a $PM_{2.5}$ precursor for the NSR program in that area. That is, the State would need to regulate construction and modification of stationary sources that increase emissions of VOC in that area to assure that these emissions do not interfere with reasonable further progress or the ability of that area to attain or maintain the $PM_{2.5}$ NAAQS.

We believe that this "presumed-out" approach is appropriate for VOC because of the complexity in assessing the role of VOC in $PM_{2.5}$ formation, as discussed previously. Where the effect of a pollutant's emissions on ambient $PM_{2.5}$ concentrations is subject to this degree of uncertainty, we do not have justification to establish a nationally-applicable presumption that the pollutant is a regulated NSR pollutant subject to the requirements of NSR for $PM_{2.5}$. Under the circumstances, we believe the best policy is to continue to regulate VOC under NSR as a precursor to ozone in all areas, which will potentially provide a co-benefit for $PM_{2.5}$ concentrations despite the uncertainty in $PM_{2.5}$ formation from VOC. As discussed previously, we do not find it appropriate to utilize the same approach for NO_X because the scientific data and modeling analyses provide more certainty that NO_X emissions are a significant contributor to ambient $PM_{2.5}$ concentrations.

Note that we intend to regulate high molecular weight VOC (with 25 carbon atoms or more and low vapor pressure) as direct $PM_{2.5}$ emissions because they are emitted directly as primary organic particles and exist primarily in the condensed phase at ambient temperatures. See section V.E following for more on the regulation of such "condensables."

Most commenters agreed with the "presumed-out" approach for VOC. One commenter said that the role of VOC in the formation of $PM_{2.5}$ is sufficiently understood to recommend a "waiver" approach for this pollutant in the same way as NO_X is treated for $PM_{2.5}$ in the rule.

As discussed previously, the reactions forming secondary organics are complex and the number of intermediate and final compounds formed is voluminous. Some of the best efforts to unravel the chemical composition of ambient organic aerosol matter have merely been able to quantify the concentrations of hundreds of organic compounds representing only 10 to 20 percent of the total organic aerosol mass. For this reason, SOA continues to be a significant topic of research and investigation. Accordingly, we do not agree with the commenter who suggested a waiver or “presumed-in” approach for VOC. We continue to believe that our “presumed-out” approach is most appropriate for VOC and have included this approach in the final rules.

6. Final Action on Ammonia

Ammonia (NH_3) is a gaseous pollutant that is emitted by natural and anthropogenic sources. Emissions inventories for ammonia are considered to be among the most uncertain of any species related to PM. Ammonia serves an important role in neutralizing acids in clouds, precipitation, and particles. In particular, ammonia neutralizes sulfuric acid and nitric acid, the two key contributors to acid deposition (acid rain). Deposited ammonia also can contribute to problems of eutrophication in water bodies, and deposition of ammonium particles may effectively result in acidification of soil as ammonia is taken up by plants. The NARSTO Fine Particle Assessment[8] indicates that reducing ammonia emissions where sulfate concentrations are high may reduce $PM_{2.5}$ mass concentrations, but may also increase the acidity of particles and precipitation. An increase in particle acidity is suspected to be linked with adverse human health effects and with an increase in the formation of secondary organic compounds. Based on this information and further insights gained from the NARSTO Fine Particle Assessment, it is apparent that the formation of particles related to ammonia emissions is a complex, nonlinear process.

Though recent studies have improved our understanding of the role of ammonia in

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[8] NARSTO (2004) “Particulate Matter Assessment for Policy Makers: A NARSTO Assessment.” P. McMurry, M. Shepherd, and J. Vickery, eds. Cambridge University Press, Cambridge, England. ISBN 0 52 184287 5. See the docket for this rulemaking, Docket ID No. EPA-HQ-OAR-2003-0062, or http://www.narsto.org/section.src?SID=6

aerosol formation, ongoing research is required to better describe the relationships between ammonia emissions, PM concentrations, and related impacts. The control techniques for ammonia and the analytical tools to quantify the impacts of reducing ammonia emissions on atmospheric aerosol formation are both evolving. Also, area-specific data are needed to evaluate the effectiveness of reducing ammonia emissions on reducing $PM_{2.5}$ concentrations in different areas, and to determine where ammonia decreases may increase the acidity of particles and precipitation.

Due to the considerable uncertainty related to ammonia as a precursor, our final rules do not require ammonia to be regulated as a $PM_{2.5}$ precursor but do give States the option to regulate ammonia as a precursor to $PM_{2.5}$ in nonattainment areas for purposes of NSR on a case-by-case basis. Consistent with our proposal, if a State demonstrates to the Administrator’s satisfaction that ammonia emissions in a specific nonattainment area are a significant contributor to that area’s ambient $PM_{2.5}$ concentrations, the State would regulate ammonia as a $PM_{2.5}$ precursor under the NSR program in that nonattainment area. Once this demonstration is made, ammonia would be a “regulated NSR pollutant” under NA NSR for that particular nonattainment area, and the State would need to regulate construction and modification of stationary sources that increase emissions of ammonia in that area to assure that these emissions do not interfere with reasonable further progress or the ability of that area to attain or maintain the $PM_{2.5}$ NAAQS. In all other nonattainment areas in that State and nationally, ammonia would not be subject to the NSR program. In addition, the action of any State identifying ammonia emissions as a significant contributor to a nonattainment area’s $PM_{2.5}$ concentrations, or our approval of a non-attainment SIP doing so, does not make ammonia a regulated NSR pollutant for the purposes of PSD in any attainment or unclassifiable areas nationally. This is consistent with our proposal (70 FR 66036) and no commenters took issue with the proposal. We also retain the ability to make a technical demonstration for any area in a State, if appropriate, to reverse the presumption and require ammonia to be addressed in that State's nonattainment area plan.

We elected to finalize the proposed approach because of continued uncertainties regarding ammonia emission inventories and the effects of ammonia emission reductions. Ammonia emission inventories are presently very uncertain in most areas, complicating the task of assessing potential impacts of ammonia emissions reductions. In addition, data necessary to understand the atmospheric composition and balance of ammonia and nitric acid in an area are not widely available, making it difficult to predict the results of potential ammonia emission reductions. Ammonia reductions may be effective and appropriate for reducing $PM_{2.5}$ concentrations in selected locations, but in other locations such reductions may lead to minimal reductions in $PM_{2.5}$ concentrations and increased atmospheric acidity. Research projects continue to expand our collective understanding of these issues, but at this time we believe this case-by-case approach for nonattainment areas is appropriate given that there is sufficient uncertainty regarding the impact of ammonia emission reductions on $PM_{2.5}$ concentrations in all nonattainment areas. In light of these uncertainties, we encourage States to continue efforts to better understand the role of ammonia in their fine particle problem areas.

Several commenters agreed with our "presumed-out" approach for ammonia. One of these commenters recommended that we recognize the role ammonia plays in $PM_{2.5}$ formation and develop a policy to require the minimization and mitigation of known emissions of ammonia, while another suggested that we require States to initiate comprehensive ambient air monitoring networks to determine the extent of local affects of ammonia.

Four commenters did not support treating ammonia as a $PM_{2.5}$ precursor under any circumstances. Three of these commenters stated that if EPA permits States to demonstrate that ammonia should be regulated as a $PM_{2.5}$ precursor for NSR purposes, we should make clear that ammonia emissions from the operation of an air pollution control system to control NO_X should not factor into such a demonstration.

Two commenters preferred that we use the "presumed-in" approach for ammonia, as for NO_X. One of these commenters stated that the "presumed-out" approach would improperly delegate our authority to regulate ammonia as a $PM_{2.5}$ precursor to the States and would reverse Congress' requirement to regulate PM precursors unless the emissions are not part of the problem, instead taking the approach that we will "not regulate unless proven to be part of the problem."

We continue to believe that the "presumed-out" approach is most appropriate for ammonia. As discussed previously, considerable uncertainties remain regarding ammonia emission inventories and the effects of ammonia emission reductions. As a result, we do not believe it advisable to adopt a "presumed-in" approach. However, where a State can gather sufficient data to demonstrate that reductions in ammonia emissions will decrease ambient concentrations of $PM_{2.5}$ in a particular nonattainment area, we believe that the State should be allowed to regulate ammonia emissions under its $PM_{2.5}$ NSR program for that area.

We do not believe that this approach improperly delegates authority to the States.

The final rule establishes a general presumption for all nonattainment areas through this rulemaking process, and allows for the presumption to be modified by the State on a case-by-case basis with EPA approval. Under the Clean Air Fine Particle Implementation Rule (72 FR 20586, April 5, 2007) (addressing various nonattainment plan elements other than NSR), we still retain the ability to make a technical demonstration for any area if appropriate to reverse the presumption and require ammonia to be addressed in its nonattainment area plan. As discussed previously in section V.A.1, we interpret the Act to allow the “presumed-out” approach adopted in the final rule.

We agree with the commenter who suggested that we continue research on the role of ammonia in the formation of $PM_{2.5}$. We believe that it is prudent to continue research on ammonia control technologies and the ammonia-sulfate-nitrate-SOA equilibrium before undertaking a broad national program to reduce ammonia emissions. As we develop a greater understanding about the potential air quality effects of reducing ammonia emissions in specific nonattainment areas, it may be appropriate for ammonia reduction strategies to be included in future SIPs. At this time, however, we believe that reducing SO_2 and NO_X emissions will achieve significant reductions in ambient $PM_{2.5}$ concentrations.

Regarding the comment related to ammonia emissions from NO_X control systems, we believe that a State should evaluate all sources of ammonia emissions when determining whether to regulate ammonia under its $PM_{2.5}$ NSR program for a particular nonattainment area. However, we also encourage States to be mindful of the potential tradeoff in terms of ambient $PM_{2.5}$ concentrations that may be related to reducing ammonia emissions from NO_X control systems.

B. Major Stationary Source Threshold for $PM_{2.5}$

The major NSR program applies to construction of major stationary sources and major modifications at major stationary sources. A stationary source is a "major source" if its actual emissions or its potential to emit for a specific pollutant equals or exceeds the major source threshold for that pollutant established in the Act. Different pollutants, including precursors, are not summed to determine applicability.

Sections 169 and 302(j) of the Act contain definitions of "major emitting facility" and "major stationary source" that apply to programs implemented under part C and subpart 1 of part D of the Act (PSD and NA NSR, respectively). Consistent with our proposal, these final rules follow these definitions for purposes of defining a major emitting facility or major stationary source that would be subject to major NSR. The thresholds set out in the definitions are applied to each relevant pollutant individually, that is, to direct $PM_{2.5}$ emissions and to emissions of each pollutant identified as a $PM_{2.5}$ precursor for the applicable NSR program. Under the final rules, the major source thresholds are as follows:

PSD	100 tpy for source categories listed in 40 CFR 51.166(b)(1)(i)(a) and 52.21(b)(1)(i)(a) 250 tpy for all other source categories
NA NSR	100 tpy for all source categories

No regulatory change is required to implement this approach to the major source thresholds for direct $PM_{2.5}$ emissions and the $PM_{2.5}$ precursors. See 40 CFR 51.165(a)(1)(iv)(a), 51.166(b)(1)(i), 52.21(b)(1)(i), and part 51, appendix S, section II.A.4.

This approach is consistent with how we treat other criteria pollutants that are covered by subpart 1 of part D of the Act. Nonattainment NSR programs under subpart 1 do not include a tiered classification system such as the one required for ozone nonattainment areas under subpart 2 of part D. We do not interpret subpart 4 of part D of the Act (creating “serious” and “moderate” classifications for PM_{10} nonattainment areas) as applying to $PM_{2.5}$.

Although our approach is consistent with sections 169 and 302(j) and subpart 1 of part D of the Act, it results in a higher major source threshold in $PM_{2.5}$ nonattainment areas than the major source threshold that applies in some PM_{10} nonattainment areas under subpart 4 of part D of the Act. This is because section 189(b) of the Act establishes a 70-tpy major source threshold for “serious” PM_{10} nonattainment areas while “moderate” PM_{10} nonattainment areas apply a 100-tpy major source threshold based on the definition in section 302(j). We do not believe the Act gives us the discretion to promulgate a lower major source threshold for pollutants such as $PM_{2.5}$ that are only subject to subpart 1 of part D of the Act.

Our emissions inventory data do not indicate that this situation will adversely impact attainment of the $PM_{2.5}$ NAAQS. These data indicate that a significant number of sources have actual $PM_{2.5}$ emissions in the 100 to 250 tpy range. Additionally, our more current inventory data show that the number of sources that would be covered as major sources by a lower major source threshold would not increase substantially unless the threshold were lowered to 20 tpy or below. Thus, even if EPA had the discretion to adopt a 70-tpy major source threshold for $PM_{2.5}$ nonattainment areas, our data indicate that few additional sources would be subject to the major NSR program in $PM_{2.5}$ nonattainment areas.[9]

We believe that States should consider such information in developing their own SIP-approved NSR programs. For example, if construction of $PM_{2.5}$ sources emitting 99 tpy with no major NSR controls and without mitigation would undermine a State's ability to achieve reasonable further progress or attain the $PM_{2.5}$ NAAQS, the State should consider imposing emissions controls or other requirements on these sources through the State's minor NSR program. Note that such programs are required under the existing statute and regulations to assure that the NAAQS are achieved. See section 110(a)(2)(C) of the Act and 40 CFR 51.160. In addition, States may address such sources through other elements in their nonattainment area SIPs that are not statutorily bound to the definition of major source, as the major NSR program is. We reiterate that since we do not interpret subpart 4 of the Act to apply to $PM_{2.5}$, we do not believe that we have discretion under section 302(j) of the Act to define a lower major source threshold for pollutants such as $PM_{2.5}$ that are only subject to subpart 1 of part D of the Act.

Some commenters indicated that State minor NSR programs would not be sufficient to address such sources due to interstate transport and the existence of interstate $PM_{2.5}$ nonattainment areas. These commenters indicated that a lower major source threshold for $PM_{2.5}$ sources located in designated nonattainment areas should be applied uniformly throughout the entire nonattainment area, which would not be possible when minor NSR programs are defined on a State-by-State basis.

We believe, to the contrary, that States can coordinate their minor NSR programs

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[9] See "NEI-$PM_{2.5}$ Source Analysis" in the docket for this rulemaking, Docket ID No. EPA-HQ-OAR-2003-0062.

to address interstate $PM_{2.5}$ nonattainment areas, and we encourage them to do so. In addition, we note that the impacts of direct $PM_{2.5}$ emissions are generally felt primarily in the local area.

One commenter stated that in order to address the impact of high PM concentrations, the Act mandates EPA to define a criteria pollutant's NSR major threshold at levels less than 100 tpy. The commenter gave the example of subparts 2 and 4 of part D of the Act, which define lower major source thresholds for certain classifications of ozone and PM_{10} nonattainment areas, respectively. The commenter argued that it is unreasonable for us to assert that subpart 4 does not apply to this rule because it regulates all PM with a diameter of less than 10 micrometers, which includes $PM_{2.5}$. The commenter believes that we recognized as much in our proposal preamble discussion of the options for implementing reasonably available control technology (RACT), where we discussed potential approaches that "would be consistent with the approach set forth in the Act in subpart 4." 70 FR 66017. This commenter stated that a reasonable interpretation of the Act requires major sources of direct $PM_{2.5}$ emissions and precursor emissions to be defined at a baseline level of 70 tpy, and adjusted further downward as appropriate considering the characteristics and potential impacts of the pollutants.

We do not agree that subpart 4 of part D applies to $PM_{2.5}$ nonattainment areas. Subpart 4 was added to the Act by Congress specifically to address the PM_{10} NAAQS. We believe that the $PM_{2.5}$ standard should be implemented under subpart 1 of part D, which is the general provision of the Act related to NAAQS implementation. Part D of title I of the Act sets forth the requirements for SIPs needed to attain the NAAQS. Part D also includes a general provision under subpart 1, which applies to all NAAQS for which a specific subpart does not exist. Because the $PM_{2.5}$ standards were not established until 1997, the nonattainment plan provisions found in section 172 of subpart 1 apply. Subpart 4 on its face applies only to the PM_{10} standard. In general, the emphasis in subpart 4 on reducing PM_{10} concentrations from certain sources of direct $PM_{2.5}$ emissions can be somewhat effective in certain $PM_{2.5}$ nonattainment areas but not in all. Contributions to $PM_{2.5}$ concentrations are typically from a complex mix of sources of primary emissions and sources of precursor emissions, which form particles through reactions in the atmosphere. In addition, $PM_{2.5}$ differs from PM_{10} in terms of atmospheric dispersion characteristics, chemical composition, and contribution from regional transport.

A group of environmental commenters believed that EPA should be consistent with the stationary source size thresholds proposed for RACT in option 2, see 70 FR 66019/1. In our proposal preamble discussion of RACT, while we discussed developing a classification system for $PM_{2.5}$ nonattainment areas under section 172(a)(1) of subpart 1, we did not discuss subjecting $PM_{2.5}$ to the requirements of subpart 4. While our discussion of RACT contemplated a lower threshold for RACT applicability in some $PM_{2.5}$ nonattainment areas, we did not characterize this as defining a lower major source threshold. Moreover, section 302(j) defines a major stationary source as one that emits 100 tpy or more “except as otherwise expressly provided.” Since section 172 does not expressly provide EPA with the authority to promulgate a major source threshold below 100 tpy, we do not believe we are authorized to do so under subpart 1 of part D of the Act.

One commenter stated that the major source threshold for $PM_{2.5}$ emissions should be calculated using the current SO_2 and NO_X definitions of major source and significant emissions rate. Specifically, the commenter suggested that the ratio of these values (100 tpy and 40 tpy, respectively) should be multiplied by the significant emissions rate for direct $PM_{2.5}$ emissions (10 tpy; see section V.C following) to yield a $PM_{2.5}$ major source threshold of 25 tpy.

As previously stated, we do not believe that we have discretion under the Act to define a lower major source threshold under subpart 1 of part D of the Act. In any case, the major source thresholds and significant emissions rates for SO_2 and NO_X were not defined in relation to one another, and therefore their relationship would not provide a suitable basis for developing the $PM_{2.5}$ major source threshold from the $PM_{2.5}$ significant emissions rate. Major source thresholds are defined directly in the Act, while the significant emissions rates were codified independently in regulations through a modeling analysis of ambient impacts.

C. Significant Emissions Rate for Direct Emissions of $PM_{2.5}$

The determination of what should be classified as a modification subject to major NSR is based, in part, on a "significant emissions rate."[10] The major NSR regulations define this term as a rate above which a net emissions increase will trigger major NSR permitting requirements, if the increase results from a major modification. Sources are exempt from major NSR requirements if the emissions increase resulting from a modification is below this rate because EPA considers such lower emissions increases to be de minimis for purposes of the major NSR program.

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[10] For additional background on EPA's interpretation of modification and rationale for including significant emissions rates in defining major modifications, see 61 FR 38253-54 (Dec. 31, 2002).

The significant emissions rates for the criteria pollutants other than $PM_{2.5}$ are given in the following table:

Criteria pollutant	Significant emissions rate (tpy)
Ozone	VOC: Any increase up to 40 tpy (dependent on NA classification) NO_X: Any increase up to 40 tpy (dependent on NA classification)
NO_2	NO_X: 40 tpy
Particulate Matter	25 tpy, particulate matter emissions 15 tpy, PM_{10} emissions
CO	50 or 100 tpy (dependent on NA classification)
SO_2	40 tpy
Lead	0.6 tpy

Significant emissions rates for additional (non-criteria) pollutants that are subject to the PSD program are contained in 40 CFR 51.166(b)(23) and 40 CFR 52.21(b)(23).

For direct emissions of $PM_{2.5}$, these final rules define the significant emissions rate as 10 tpy. This is the level that we proposed as our preferred option. This final significant emissions rate for direct $PM_{2.5}$ emissions is based fundamentally on the same approach that we used in setting the previous significant emissions rates for PM emissions and PM_{10} emissions.

Historically, the original significant emissions rate for PM (25 tpy of PM emissions) was set using a modeling analysis to determine the amount of PM emissions that a source could emit that would be unlikely to cause ambient impacts above 4 percent of the PM NAAQS (measured as total suspended particulate (TSP)).[11] Although a range of source configurations can yield a wide range of impacts per tpy of emissions, our review of typical configurations of major PM sources led us to the conclusion that a major modification that increased PM emissions by 25 tpy or less would be unlikely to increase 24-hour average concentrations of TSP by more than 4 percent of the 24-hour TSP NAAQS. Subsequently, when we set the significant emissions rate for PM_{10}, we adjusted the rate for PM emissions using the ratio of the 24-hour PM_{10} NAAQS to the 24-hour TSP NAAQS to derive the PM_{10} significant emissions rate of 15 tpy. We used the ratio of 24-hour NAAQS for this adjustment because that NAAQS was controlling for both PM and PM_{10}.

We used a conceptually similar methodology to derive the final $PM_{2.5}$ significant emissions rate from the rate for PM_{10}. However, because the 24-hour NAAQS is not controlling for $PM_{2.5}$, we revised the methodology to take into account the annual impact of emissions. See the proposal preamble for additional information on the methodology we used to develop the final significant emissions rate for direct $PM_{2.5}$ emissions (70 FR

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[11] The EPA established the original NAAQS for PM in terms of ambient concentrations of TSP (40 CFR 51.100(ss)). Source applicability for PM was determined in terms of amounts of PM emissions (40 CFR 51.100(pp)) from the affected source. In 1993, at 58 FR 31622 (see page 31629), EPA eliminated TSP as the ambient indicator for measuring compliance with both the NAAQS and PSD increments. Thus, EPA no longer considers the TSP ambient indicator to be a regulated NSR pollutant. The EPA is currently evaluating whether it remains appropriate to consider PM as a “regulated NSR pollutant.” There is no NAAQS for TSP/PM, rather the standards address specific size fractions of PM, namely PM_{10} and $PM_{2.5}$. However, PM emissions, based on in-stack measurements, continue to be regulated under PSD because of the use of such emissions for evaluating compliance under a variety of CAA section 111 new source performance standards (40 CFR part 60). Given the regulatory changes and positions taken by EPA since 1993, EPA is re-evaluating the implications for PM emissions in the NSPS program (and other air programs) and will act accordingly to clarify this issue in the near-term.

66038).

Several commenters supported our approach to setting the significant emissions rate for direct $PM_{2.5}$ emissions and the level (10 tpy) based on the same methodology used for PM emissions and PM_{10} emissions. Numerous other commenters believe that our methodology was too conservative, and suggested a significant emissions rate of 15 tpy. Two commenters suggested that we use significant emissions rate of 5 tpy or less. Another commenter suggested that we could "split the difference," using an option that could give States and companies some flexibility: modifications less than 5 tpy of direct $PM_{2.5}$ emissions could be considered de minimis; modifications between 5 and 15 tpy of direct $PM_{2.5}$ emissions could choose to either demonstrate a less than a 4 percent NAAQS increase or simply be subject; and modifications with increases of 15 or more tpy of direct $PM_{2.5}$ emissions would be subject.

We agree with commenters who indicated that we were correct in using the same methodology for direct $PM_{2.5}$ that was used to set the significant emissions rate for PM_{10} and PM emissions. We do not agree that using the same level as PM_{10} emissions (15 tpy) is warranted, given the demonstrated health effects of $PM_{2.5}$. Neither do we agree that a significant emissions rate of 5 tpy or less is warranted. While our screening model runs indicated that emissions increases in this range at facilities with short stacks can cause measurable increases in ambient $PM_{2.5}$ levels, we do not believe that facilities at the extremes should dictate the program for all sources.

We do not agree that inclusion of condensable emissions in future testing and applicability determinations (see section V.E) is grounds for increasing the SER for direct $PM_{2.5}$ emissions. The results of the modeling analysis that is the basis for the SER of

10 tpy is not affected by the nature of the direct $PM_{2.5}$ emissions (i.e., condensable or not).

We also do not agree that the proportions of primary and secondary $PM_{2.5}$ that comprise ambient $PM_{2.5}$ concentrations is relevant to determining the appropriate SER for direct $PM_{2.5}$ emissions. Following our historic approach for PM and PM_{10}, we based our analysis on determining the size of a source of direct $PM_{2.5}$ emissions that would be expected to have an ambient impact of 4 percent or more of the NAAQS. This relationship holds true regardless of the origin of the particles that make up the ambient $PM_{2.5}$. The commenter's approach (i.e., carrying out the analysis based on one-half of the NAAQS because primary $PM_{2.5}$ makes up only one-half of the ambient $PM_{2.5}$) implies that an increase in ambient $PM_{2.5}$ concentrations due to an increase in direct $PM_{2.5}$ emissions is somehow automatically matched by a like increase in the ambient concentration of secondary $PM_{2.5}$. We do not believe that this is a reasonable approach.

D. Significant Emissions Rates for $PM_{2.5}$ Precursors

Consistent with the preferred option in the proposal, we are setting significant emissions rates for $PM_{2.5}$ precursors at the levels for those pollutants already included in major NSR programs, as shown in the following table:

$PM_{2.5}$ precursor	Significant emissions rate (equal to or exceeding)
SO_2	40 tpy
NO_X	40 tpy
VOC	40 tpy
Ammonia	Adopted in SIP

VOC is presumed not to be a precursor to $PM_{2.5}$ in any attainment or unclassifiable area, unless the State demonstrates to the Administrator's satisfaction or

EPA demonstrates that emissions of VOC from sources in a specific area are a significant contributor to that area's ambient $PM_{2.5}$ concentrations. Any State making such a demonstration would be required to adopt the 40-tpy significant emissions rate unless it demonstrates that a more stringent significant emissions rate (lower rate) is more appropriate.

For ammonia, States determining in their SIPs that control of ammonia is a necessary part of a $PM_{2.5}$ control strategy in a particular area must set the significant emissions rate for ammonia. Otherwise, according to the definition of "significant" in the PSD program, "any emissions rate" would be considered significant. See 40 CFR 51.166(b)(23)(ii).

One commenter stated that we should not leave it to States to set significant emissions rates for ammonia. The commenter argued that EPA's scientists should shoulder this responsibility, and the resulting significant emissions rate should be subject to notice and comment.

In the final rule, we are allowing those States that determine in their SIPs that control of ammonia is necessary to set the significant emissions rate for ammonia, based on the information developed for each attainment demonstration. At this time, we believe this is more appropriate than EPA setting a single, nationwide significant emissions rate because of the different role ammonia plays in the formation of $PM_{2.5}$ from one area to another, as well as our still-evolving understanding of the impact of reducing ammonia emissions on ambient $PM_{2.5}$ concentrations. In addition, we note that the SIP revisions that States undertake to add ammonia to their NA NSR programs are subject to notice and comment rulemaking procedures.

Numerous commenters supported our proposal to set significant emissions rates for $PM_{2.5}$ precursors at the levels already used for other purposes in the NSR program. One commenter indicated that since roughly half or more of ambient $PM_{2.5}$ is derived from precursors, 10 tpy would be an appropriate significant emissions rate for $PM_{2.5}$ precursor emissions. Another commenter suggested a significant emissions rate of 4 tpy for SO_2 and 2 tpy for NO_X, based on the percentage of $PM_{2.5}$ that is typically derived from these precursors and the ratios between the existing significant emissions rates for these pollutants and the SO_2 and NO_2 annual NAAQS. Since the ambient concentrations of $PM_{2.5}$ vary across the country and since significant emissions rates have not been developed as a ratio of the NAAQS, we do not believe that the suggested approach is appropriate.

As discussed in the proposal, the use of existing significant emission rates where the $PM_{2.5}$ precursor is also regulated under NSR as a separate criteria pollutant harmonizes the NSR program for $PM_{2.5}$ with the NSR programs for those other criteria pollutants. This enables a source to determine the NSR impacts of proposed modifications by reference to a single significant emissions rate for each pollutant, and enables streamlining of determinations regarding the applicable control technology and analysis of air quality impacts into a single and comprehensive decision making process for both $PM_{2.5}$ and other criteria pollutants that also cover $PM_{2.5}$ precursors. This also follows precedent. When ozone became a criteria pollutant, EPA used the NO_X significant emissions rate from the NO_2 program.

The burden imposed is not the only factor to consider when setting the significant emission rates for precursors – the process for determining the significant emission rates must also take into account the accuracy and certainty with which we can predict the effect of the precursors on $PM_{2.5}$ concentrations. It is difficult to determine the ambient air quality effects that result from a single source of emissions of $PM_{2.5}$ precursors. There are conservative screening models for predicting impacts of large NO_X and SO_2 sources on ambient $PM_{2.5}$ concentrations. We conducted a range of modeling analyses to determine the amount of $PM_{2.5}$ precursor emissions needed to show an increase in ambient $PM_{2.5}$ concentrations. These analyses showed that precursor emissions probably have some localized impacts, but that most impact is farther downwind as precursors have the time to convert to $PM_{2.5}$. In addition, the modeling available at this time does not provide sufficient information to estimate impacts of emissions from individual sources of ammonia and VOC on ambient $PM_{2.5}$ concentrations. While we know that precursors contribute to the formation of $PM_{2.5}$ in the ambient air, the degree to which these individual precursors contribute to $PM_{2.5}$ formation in a given location is complex and variable. There are competing chemical reactions taking place in the atmosphere, and meteorological conditions play a significant role in the size and characteristics of particle formation. For these reasons, we do not believe that we have adequate data on the impacts of precursor emissions from individual sources to override the administrative advantages of setting the significant emissions rates for SO_2, NO_X, and VOC for purposes of the $PM_{2.5}$ NSR program at the same levels that are already used for other purposes in the major NSR program.

E. Condensable PM Emissions

In this final NSR rule, EPA will not require that States address condensable PM in establishing enforceable emissions limits for either PM_{10} or $PM_{2.5}$ in NSR permits until the completion of a transition period, as described herein. In response to significant comments on the variability of test methods available for measuring condensable emissions, we have adopted this transition period approach to allow us to assess the capabilities of the test methods and possibly revise them to improve performance. The transition period will end January 1, 2011 unless EPA advances this date through the rulemaking process described below.

Subsequent to the completion of the test methods assessment, EPA will be conducting a notice and comment rulemaking to codify new or revised test methods. Once these new or revised test methods are in place, States will have the tools necessary to issue NSR permits addressing condensable PM. Thus, as part of the test methods rulemaking, we will take comment on an earlier closing date for the transition period in the NSR program if we are on track to meet our expectation to complete the test methods rule much earlier than January 1, 2011. In the meantime, however, we are establishing January 1, 2011 as the latest possible end date for the NSR transition period because this is also the end of the transition period for SIP purposes as described in the Clean Air Fine Particle Implementation Rule (see section II.L in 72 FR 20586, April 25, 2007). Prevention of Significant Deterioration and NA NSR permits issued after the effective date of this NSR implementation rule but prior to the end of the transition period for the NSR program are not required to account for condensable emissions in $PM_{2.5}$ or PM_{10} emissions limits. After January 1, 2011 (or any earlier date established in the upcoming rulemaking codifying test methods), EPA will require that NSR permits include limits of condensable emissions, as appropriate. Prior to this date, States are not prohibited from establishing emissions limits in NSR permits that include the condensable fraction of direct $PM_{2.5}$.

As noted in the proposal preamble, certain commercial or industrial activities involving high temperature processes (e.g., fuel combustion, metal processing, and process cooking operations) emit gaseous pollutants into the ambient air, some of which rapidly condense into particle form. The constituents of these condensed particles include, but are not limited to, organic materials, sulfuric acid, and metals and metal compounds. We consider such condensable emissions to be a component of direct PM emissions. Specifically, direct PM emissions consist of both the “filterable fraction” which already exist in particle form at the elevated temperature of the exhaust stream, and the “condensable fraction” which exist in gaseous form under exhaust stream conditions but condenses rapidly in the ambient air.

Because condensable PM emissions exist almost entirely in the 2.5 micrometer range and smaller, these emissions are inherently more significant for $PM_{2.5}$ than for prior PM standards addressing larger particles. Condensable PM emissions commonly make up a significant component of direct $PM_{2.5}$ emissions. Therefore, we believe that it is important that the air quality management of PM promote a comprehensive approach to the control of condensable PM.

We proposed on November 1, 2005 to clarify that condensable PM emissions must be included when determining whether a source is subject to the major NSR program. We noted in the proposal that our prior guidance[12] had clarified that PM_{10}

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[12] Letter from Thompson G. Pace, Acting Chief, Particulate Matter Programs Branch, to Sean Fitzsimmons, Iowa Department of Natural Resources, (Mar. 31, 1994) (available at http://www.epa.gov/Region7/programs/artd/air/nsr.nsrmemos/cpm.pdf and in the docket for this rulemaking, Docket ID No. EPA-HQ-OAR-2003-0062)

includes condensable PM and that, where States expect condensable PM emissions to be in higher amounts, States should use methods that appropriately measure condensable PM emissions. In addition, we pointed out that the 2001 consolidated emissions reporting rule (CERR) requires States to report condensable emissions in each inventory revision (see 67 FR 39602, June 10, 2001) and that Method 202 in appendix M of 40 CFR part 51 quantifies condensable PM. We also noted that States have not applied this existing guidance consistently.

We received a number of comments on whether NSR programs should account for condensable PM emissions in light of the current state of knowledge of and uncertainties around the measurement of direct $PM_{2.5}$. Several commenters supported our proposal to require the inclusion of condensable PM emissions in NSR applicability determinations. On the other hand, several other commenters expressed opposition to including condensables at this time and raised concerns about the availability and implementation of test methods and related issues about the uncertainties in existing data for condensable $PM_{2.5}$. As a result of the concerns, these commenters believed EPA would be premature in requiring a comprehensive evaluation of condensable $PM_{2.5}$, especially as it related to developing any new emissions limits for stationary sources.

One commenter noted that regulation of condensable PM at this time will impede, rather than facilitate, expeditious attainment of the $PM_{2.5}$ standard. Another commenter expressed concern about the potential for retroactive enforcement over applicability decisions made in good faith, and for retroactive application of the new test method to assert violations of an emission limit, where the applicability decision or the emission limit was originally based on flawed testing/estimating methodology. Several commenters raised serious concerns about the availability and implementation of accurate test methods and emissions factors for condensable $PM_{2.5}$. They further stated that regulation of condensable $PM_{2.5}$ emissions would be appropriate only after we have developed a workable transitional strategy that ensures existing major sources are not placed in “NSR jeopardy” for physical and operational changes undertaken before new test methods and other requirements for condensable $PM_{2.5}$ are established.

In recognition of these concerns, both as they apply to the NSR program and the broader air program, we have adopted a transition period during which NSR permits need not address limits of condensable $PM_{2.5}$ emissions. During this transition period, EPA will undertake a collaborative testing effort with industry, National Association of Clean Air Agencies (NACAA), and other stakeholders to assess and improve the effectiveness and accuracy of the available or revised test methods. The purpose of the stakeholder testing projects will be to collect new direct filterable and condensable $PM_{2.5}$ emissions data using methodologies that provide data more representative of sources’ direct $PM_{2.5}$ emissions. The EPA, States, and others will use these data to establish or improve emissions factors and to define more representative source emissions limits in permits.

The EPA acknowledges the legitimate concerns raised by commenters concerning potential exposure to retroactive enforcement and has established rules to address this issue. The EPA will not revisit applicability determinations made in good faith prior to the end of the transition period, insofar as the quantity of condensable PM emissions are concerned, unless the applicable implementation plan clearly required consideration of condensable PM. Likewise, EPA will interpret PM emissions limitations in existing permits or permits issued during the transition period as not requiring quantification of condensable $PM_{2.5}$ for compliance purposes unless such a requirement was clearly specified in the permit conditions or the applicable implementation plan.

After the end of the transition period (January 1, 2011 or any earlier date established in the upcoming rulemaking codifying test methods), EPA will require that all NSR applicability determinations for $PM_{2.5}$ and PM_{10} address condensable emissions as applicable, and the source may not rely on calculations made for previous determinations that did not include an accurate accounting of condensables. Additionally, compliance with these limits must be determined using the promulgated validated test methods that are applicable after that date. Moreover, after that date, we expect that condensable PM emissions will be addressed in all other aspects of the major NSR program, such as impact analyses under PSD and offsets under NA NSR. See 72 FR 20586, April 25, 2007 for the discussion of the transition period as it applies to the other elements of the air program in the final Clean Air Fine Particle Implementation Rule.

Although EPA is not requiring that State NSR programs address condensable emissions of PM until the end of the transition period, States that have developed the necessary tools are not precluded from acting to measure and control condensable PM emissions in NSR permit actions prior to the end of the transition period, especially if it is required in an applicable SIP. To the extent that a State has the supporting technical information and test methods, the State may assess the capabilities of current control technologies, possible modifications to such technologies, or new technologies as appropriate relative to control of condensable $PM_{2.5}$ emissions. As an example, a specific approach for controlling condensable PM could be a change in control device operating temperature to improve emissions reductions. We also note that it is important that implementation of any new or revised emissions limits and test methods that account for condensable emissions should be prospective and clearly differentiated from existing NSR permit requirements. This will avoid confusion over the compliance status relative to existing PM emissions limits that were not developed considering the condensable portion.

Notwithstanding the issues and uncertainties related to condensable PM, we encourage States to begin immediately to identify measures for reducing condensable PM emissions in major NSR permit actions, particularly where those emissions are expected to represent a significant portion of total PM emissions from a source.

F. Prevention of Significant Deterioration (PSD) Program Requirements

To receive a permit for a new major source or a major modification, sources subject to PSD must:

- Install Best Available Control Technology (BACT).
- Conduct air quality modeling to ensure that the project's emissions will not cause or contribute to either –
  - A violation of any NAAQS or maximum allowable pollutant increase (PSD increment); or
  - An adverse impact on any Class I area "air quality related value" (AQRV).
- As required, comply with preconstruction monitoring requirements.

This final action regarding each of these elements is discussed in the following sections.

1. How must BACT be implemented for $PM_{2.5}$?

We are not making any change to our current regulations or policy for implementing BACT requirements at a major source that is subject to the requirements of the PSD program. Accordingly, if a new major source will emit, or have the potential to emit, a significant amount of a regulated NSR pollutant in an attainment area for that pollutant, the source must apply BACT for each emissions unit that emits the pollutant. In addition, if a physical or operational change at an existing major source will result in a significant emissions increase and a significant net emissions increase of a regulated NSR pollutant in an attainment area for that pollutant, the source must apply BACT to each proposed emissions unit experiencing a net increase in emissions of that pollutant as a result of the physical or operational change in the unit. Under the $PM_{2.5}$ PSD program, these requirements will apply to direct $PM_{2.5}$ emissions; SO_2 emissions; NO_X emissions, unless a State demonstrates that NO_X is not a significant contributor to ambient $PM_{2.5}$ concentrations in that area; and to VOC if identified by a State as a precursor in the $PM_{2.5}$ attainment area where the source is located.

2. How does EPA plan to address $PM_{2.5}$ Increments, Significant Impact Levels (SILs), and Significant Monitoring Concentrations (SMCs)?

On November 1, 2005, we proposed a rule to implement the $PM_{2.5}$ NAAQS, including proposed revisions to the NSR program (70 FR 65984). In that proposal, we indicated our intent to propose a separate rule for developing $PM_{2.5}$ increments, SILs, and SMCs and sought comments on general approaches for developing these values. We proposed $PM_{2.5}$ increments, SILs, and SMCs in a rule dated September 21, 2007. 72 FR 54112. We intend to address comments received on these components of the $PM_{2.5}$ PSD program when we finalize that proposed rule.

3. What is the ambient air quality analysis requirement for $PM_{2.5}$?

All sources subject to PSD review must perform an ambient air quality impact analysis to show that the emissions from the source will not cause or contribute to a PSD increment or NAAQS violation. See section 165(a)(3) of the CAA; 40 CFR 51.166(k) and 52.21(k). We did not propose, and our final rules do not contain, any changes to the regulations on air quality impact analyses for purposes of the $PM_{2.5}$ NSR program. Accordingly, sources will be required to perform this analysis for the $PM_{2.5}$ NAAQS and, when finalized, $PM_{2.5}$ increments. Such analyses must consider how a source, in combination with other sources in the area, will impact air quality at existing $PM_{2.5}$ monitor locations, as well as at other locations that are appropriate for comparing predicted $PM_{2.5}$ concentrations to the NAAQS based on $PM_{2.5}$ monitor siting requirements and recommendations.

4. How must the PSD preconstruction monitoring requirement be implemented for $PM_{2.5}$?

Sources subject to PSD are subject to preconstruction ambient air quality monitoring requirements. See sections 165(a)(7) and 165(e) of the Act and 40 CFR 51.166(m) and 52.21(m). The PSD permitting requirements provide that continuous preconstruction ambient air quality monitoring must be conducted for any criteria pollutant emitted in significant amounts. Under 40 CFR 51.166(i)(5) and 52.21(i)(5), the reviewing authority has the discretion to exempt an applicant from this monitoring requirement if:

- The maximum modeled concentration for the applicable averaging period caused by the proposed significant emissions increase (or net emissions increase) is less than the prescribed SMC; or
- The existing monitored ambient concentrations are less than the prescribed

SMC.

A source may also use existing data as a surrogate for preconstruction monitoring if the existing monitored data record is determined to be representative of the project's location.

We proposed five options for how to address preconstruction monitoring for $PM_{2.5}$. We are adopting a combination of options 1 and 3 from the proposal, primarily because we believe that it reflects existing procedures for other regulated NSR pollutants. The following sections summarize the major comments received on each option and explain why we are not adopting particular options.

Option 1 – Require preconstruction monitoring for all sources but exempt on a case-by-case basis

Generally, commenters who supported option 1 believed the option gives regulatory agencies enough flexibility to address sources with unique characteristics. One commentator stated that another benefit is that this option would avoid unnecessary installation of new $PM_{2.5}$ monitors and redundant preconstruction monitoring.

Another commenter, however, believed option 1 to be overly burdensome until EPA develops an SMC. The commenter argued that for example, there are many upcoming PSD projects in their State, which would be located in extremely remote areas where there are no local or regional $PM_{2.5}$ emission sources, so there would be no need to collect such data for these areas. Additionally, one group of commenters stated that option 1 appeared to be "streamlining" preconstruction permit requirements, which is not the intention of the Act's PSD provisions, and that EPA does not have the authority to exempt sources from the requirements of section 165(e)(2).

We agree with the commenter that recommended combining option 3 (the use of a 24-hr $PM_{2.5}$ SMC) with option 1 and are finalizing this approach. We have proposed an SMC for $PM_{2.5}$ in the rulemaking on increments, SILs, and SMCs (72 FR 54112, September 21, 2007). Our regulations at 40 CFR 51.166(i)(5) and 52.21(i)(5) have allowed the use of an SMC as screening tool for identifying when an impact is de minimis and there is thus little or no value in gathering preconstruction monitoring data The use of de minimis levels of this nature (such as significant emission rates and significant impact levels) is supported by court precedent interpreting the NSR provisions of the Act. Alabama Power Co. v. Costle, 636 F.2d 323, 360 (D.C. Cir. 1979). ("Unless Congress has been extraordinarily rigid, there is likely a basis for an implication of de minimis authority to provide [an] exemption when the burdens of regulation yield a gain of trivial or no value.")

Option 2 – Exempt all sources from preconstruction monitoring

Under option 2, we proposed to exempt all $PM_{2.5}$ sources from preconstruction monitoring through a blanket determination that the existing $PM_{2.5}$ monitoring network is sufficient. One commenter who preferred option 5 (described subsequently) was also supportive of option 2. This commenter noted that preconstruction monitoring is expensive and can significantly delay a project. The commenter also pointed out that it is very difficult to locate monitors for both direct $PM_{2.5}$ and precursors because precursors may transport over long distances before transforming into $PM_{2.5}$. The commenter indicated that we should not rely on the existing regulations, which are already known to be problematic.

One comment letter from a group of environmental advocacy organizations specifically opposed option 2. These commenters noted that spatial gradients can be significant for $PM_{2.5}$, especially for direct $PM_{2.5}$ emissions, and that the existing monitoring network is severely limited in its spatial coverage, most especially in attainment areas where PSD preconstruction monitoring requirements apply. The commenters indicated that to make a blanket determination that the existing network suffices for any source, regardless of where it might choose to locate, would be absurd.

We decided not to finalize option 2 because we do not believe that the current network will be sufficient for all existing and potential new sources. As stated in the proposal preamble, we believe that the existing $PM_{2.5}$ monitoring record has the following limitations:

- The $PM_{2.5}$ monitoring data record would require spatial interpolation between monitors for the determination of appropriate concentrations at the project's location.
- Use of existing monitored data will not increase the $PM_{2.5}$ monitoring data record to confirm or contradict conventional perceptions.
- The $PM_{2.5}$ monitoring data record assumes that local hot spots of high $PM_{2.5}$ concentrations do not exist or are already being monitored, which may not be true in all cases.
- Automatic acceptance of existing measurements does not follow our current policy that a case-by-case determination needs to be made to determine whether preconstruction ambient monitoring is necessary.
- When used with the impact modeling, separate concentrations of direct and precursor-formed PM are needed.

Option 3 – Use SMC's to exempt sources from preconstruction monitoring

Several commenters supported this option adding that this approach follows existing procedures to justify the exclusion of preconstruction monitoring requirements when source impacts are less than the SMC or when sufficient representative data exists. One group of commenters stated that EPA's proposed options 1 and 3, which would allow case-by-case or de minimis exemptions from the monitoring requirements, are ill-conceived as a matter of public policy and contradict the Act's PSD provisions.

We agree with the commenters that support adopting option 3 because a combination of options 1 and 3 reflects existing procedures for other regulated NSR pollutants. As discussed previously, a de minimis exemption from monitoring requirements is supported by court precedent interpreting the PSD provisions of the Act. We do not consider it sound policy to require gathering additional data when it is unnecessary to demonstrate that a proposed source or modification will not adversely impact air quality.

Option 4 – Use existing PM_{10} data

We proposed using the available large PM_{10} data record combined with the recently acquired $PM_{2.5}$ data to provide representative ambient measurements for most sources. One comment letter from an industry group opposed any requirement for preconstruction monitoring, and endorsed option 4 if nationally gathered $PM_{2.5}$ data is not available. Three commenters specifically opposed option 4. One comment letter from an environmental advocacy organization stated that option 4 is illegal on its face, to the extent that EPA intends it as a universally available alternative. This comment indicated that some individual sources might be able to demonstrate that PM_{10} monitoring could fulfill the statutory requirements and purposes of $PM_{2.5}$ monitoring (e.g., with sufficiently protective assumptions about $PM_{2.5}/PM_{10}$ proportions), but due to the variability in the relationship between $PM_{2.5}$ and PM_{10}, EPA cannot categorically allow this substitution. Two other commenters stated that option 4 was not a viable approach due to the convoluted nature of attempting to infer $PM_{2.5}$ concentration from PM_{10} monitoring data for source-specific applications.

We decided not to finalize option 4. As we recognized in the proposal preamble, the differences in characteristics between $PM_{2.5}$ and PM_{10} and our limited understanding of their relationship are problematic for this application. We do not believe that generalized factors to convert PM_{10} concentrations to $PM_{2.5}$ concentrations sufficiently reflect important industry-specific and spatially-related characteristics of $PM_{2.5}$. In addition, removing altogether the obligation to provide preconstruction $PM_{2.5}$ ambient monitoring data would eliminate industry's contribution to the $PM_{2.5}$ data record when source impacts are more than de minimis.

Option 5 – Exempt sources from preconstruction monitoring if no SMC is established

We noted in the proposed rule that the existing regulations at 40 CFR 51.166(i)(5)(iii) and 52.21(i)(5)(ii) could be interpreted to allow a reviewing authority to exempt an applicant from preconstruction monitoring for any pollutant for which we have not established an SMC. These provisions state that a source may be exempted from preconstruction monitoring "if … the pollutant is not listed in" the list of pollutants for which SMC have been set.[13] The original rationale for this exemption is based on the lack of adequate methods for measuring ambient concentrations of pollutants not on the list. See 45 FR 52709, 52723-52724. We requested comment on this interpretation and any other legal or policy rationale that could support applying the text of these provisions to exempt sources from preconstruction monitoring if we elected not to define an SMC for $PM_{2.5}$.

One commenter stated that option 5 is the most practicable to implement until an SMC can be established and any potential gaps in the monitoring network can be filled. Two commenters question the legality of option 5 under the Act. They added that whatever may have been the case when the existing list of SMCs was adopted, methods now exist for conducting the monitoring required under section 165(e)(2). We decided not to finalize option 5, and have proposed an SMC rule for $PM_{2.5}$.

In conclusion, we are finalizing a combination of options 1 and 3 from the proposal, since we believe that it reflects existing procedures for other regulated NSR pollutants. Once we finalize an SMC for $PM_{2.5}$, the reviewing authority will have the discretion to exempt a source from the preconstruction monitoring requirement if the projected $PM_{2.5}$ ambient impact of the source is below the $PM_{2.5}$ level promulgated in our rules. In addition, additional preconstruction monitoring data may not be necessary based on the availability of existing representative monitoring data in the area, as discussed

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[13] These sections actually cross-reference the list at 40 CFR 51.166(i)(8)(i) and 52.21(i)(8)(i), however we renumbered those paragraphs to paragraph (i)(5)(i) of those provisions in the December 31, 2002 NSR reform rule and inadvertently overlooked correcting the cross-references in paragraphs (i)(5)(ii) and (i)(5)(iii). See 67 FR 80186. As proposed, in this final action we have corrected this misnumbering and others in this section.

previously.

G. Nonattainment New Source Review (NA NSR) Requirements

To receive a permit for a new major source or a major modification, sources subject to NA NSR must:

- Install Lowest Achievable Emission Rate (LAER) control technology;
- Offset new emissions with creditable emissions reductions;
- Certify that all major sources owned or operated by the applicant in the same State are in compliance; and
- Conduct an alternative siting analysis demonstrating that the benefits of the proposed source significantly outweigh the environmental and social costs.

We did not propose, nor are we finalizing, any revisions to the first, third, and fourth of these requirements. Thus, these requirements apply for purposes of $PM_{2.5}$ and its designated precursors just as they apply for other criteria pollutants and their designated precursors. In the remainder of this section G, we discuss our final actions related to offsets for direct $PM_{2.5}$ emissions and emissions of $PM_{2.5}$ precursors.

1. What is the required offset ratio for direct $PM_{2.5}$ emissions?

Under section 173 of the Act, all major sources and major modifications at existing major sources within a nonattainment area must obtain emissions reductions to offset any emissions increases resulting from the project in an amount that is at least equal to the emissions increase, and that is consistent with reasonable further progress towards attainment. We refer to the proportional difference between the amount of the required offsets to the amount of emissions increase as the “offset ratio.”

The Act specifies an offset ratio for several situations. In ozone nonattainment areas subject to subpart 2 (of title I, part D of the Act), the ratio is set between 1.1:1 and 1.5:1 depending on the area's level of classification pursuant to subpart 2. For other nonattainment areas, the Act establishes a minimum offset ratio of 1:1 pursuant to subpart 1 of title I, part D of the Act.

As proposed, we are finalizing the offset ratio for direct $PM_{2.5}$ emissions as at least 1:1 on a mass basis because the $PM_{2.5}$ program is being implemented under subpart 1 of the Act. The commenters on this issue generally agreed that our regulations should require an offset ratio of at least 1:1 pursuant to subpart 1.

A few commenters indicated that a lower ratio could be acceptable on a source-specific basis if accompanied by a modeling analysis demonstrating a net air quality benefit. One commenter suggested that such a demonstration would be possible when a direct $PM_{2.5}$ emissions increase from a tall stack is being offset by ground-level $PM_{2.5}$ emission reductions. Applying diesel retrofit technology to bus and truck fleets is an example of how ground-level $PM_{2.5}$ emission reductions could be achieved. We do not believe that a lower offset ratio is authorized under subpart 1, which prescribes an offset ratio of at least 1:1, and therefore we have not adopted this approach in our final rules.

Some of the commenters disagreed regarding whether an offset ratio of at least 1:1 under subpart 1 represents a ceiling or a floor on the level we can prescribe in our regulations. We interpret section 173 of the Act to allow higher offset ratios where necessary to achieve reasonable further progress. Accordingly, we believe that States may establish higher offset ratios in their State programs if they wish, but we do not believe that it would be appropriate for us to do so for $PM_{2.5}$ in national regulations. We do not have cause to believe a higher ratio is necessary for $PM_{2.5}$ in each area of the country and prefer to leave this to the discretion of States. We do not believe that the higher offset ratios required for ozone precursors under subpart 2 apply in any way to direct $PM_{2.5}$ emissions or $PM_{2.5}$ precursors.

2. Which precursors are subject to the offset requirement?

Consistent with our proposal, the pollutants that are designated as $PM_{2.5}$ precursors in a particular area are subject to the offset requirement in that area. Accordingly, SO_2 is subject to offsets in all $PM_{2.5}$ nonattainment areas. As a "presumed-in" precursor, NO_X will be subject to offsets unless a State obtains an exemption for its NSR program through a demonstration that NO_X emissions in a particular area are not a significant contributor to that area's ambient $PM_{2.5}$ concentrations. As "presumed-out" precursors, VOC and ammonia would be subject to offsets only in areas where the State has demonstrated that these emissions are significant contributors to the area's ambient $PM_{2.5}$ concentrations. Two commenters on this issue agreed with this approach; one commenter recommended that we not require offsets for any $PM_{2.5}$ precursors. We believe that it is appropriate to offset emissions increases of all precursors that have been established to contribute to the $PM_{2.5}$ nonattainment problem in a particular area.

3. What is the required offset ratio for $PM_{2.5}$ precursors?

As discussed previously, the Act requires that a source obtain offsets for emissions increases that occur in a nonattainment area. As with $PM_{2.5}$ direct emissions, the minimum offset ratio permitted under subpart 1 of the Act is at least 1:1. Based on these requirements of the Act, we are finalizing our proposal that an offset ratio of at least 1:1 applies where a source seeks to offset an increase in emissions of a $PM_{2.5}$ precursor with creditable reductions of the same precursor. This offset ratio applies for all pollutants that have been designated as $PM_{2.5}$ precursors in a particular nonattainment area.

Most commenters agreed with this approach. A few commenters indicated that an offset ratio of less than 1:1 for precursor emissions of $PM_{2.5}$ should be allowed only if there is a net air quality benefit and if the lower ratio is justified by air quality modeling analysis. They noted that for $PM_{2.5}$ precursors, chemical reactivity modeling demonstrations should be developed and approved that are, at a minimum, capable of determining the impacts of the precursor emissions on the air quality in the nonattainment area in which the source is located. As noted previously, we do not believe that any offset ratio less than 1:1 is permissible under subpart 1.

One commenter stated that consistent with the statutory scheme for ozone laid out in section 182, and given the severity of the health risks associated with $PM_{2.5}$, EPA must require offsets of at least 1.15:1 for $PM_{2.5}$ precursors in “moderate” nonattainment areas, and must increase the offset ratio in “serious” nonattainment areas or in areas that request extensions of their attainment deadlines. As mentioned previously, we do not believe that subpart 2 of the Act (which includes section 182) has any relevance to $PM_{2.5}$ or its precursors. Subpart 2 is specific to ozone. In addition, we are implementing the $PM_{2.5}$ program under subpart 1. Nevertheless, under the Act, we believe that a State may require higher offset ratios if it determines that they are necessary to achieve reasonable further progress. For the reasons discussed previously with respect to direct $PM_{2.5}$, we do not believe that it is appropriate for us to set higher offset ratios for $PM_{2.5}$ precursors on a national basis.

Two commenters requested that we make clear in the final rule that an increase in precursor emissions need only be offset once, even if the increase triggers nonattainment NSR under, for example, both the ozone and $PM_{2.5}$ programs. We agree with these commenters and are clarifying that a precursor emissions increase only needs to be offset once. A permit applicant will not, for example, need to obtain two sets of offsets for NO_X emissions if NO_X is regulated as a precursor both for ozone and $PM_{2.5}$ in the area. The NO_X precursor emissions need only be offset once in accordance with the applicable ratio. To the extent a higher ratio applies for ozone under subpart 2, the applicant would have to obtain offsets at the higher ratio. However, when the offset ratios are the same, both requirements can be met with a single set of NO_X offsets.

4. Is interpollutant trading allowable to comply with offset requirements?

In this final rule, we are allowing limited interpollutant trading for purposes of offsets only (and not netting) under the $PM_{2.5}$ NA NSR program. Specifically, the final rules allow interpollutant trading only based on a trading ratio established in the SIP as part of the attainment demonstration approved for a specific nonattainment area, on a statewide basis, or in a regional, multi-state program. This differs from our proposal in that the final rules do not allow interpollutant trading on a case-by-case basis as part of an individual NA NSR permitting process. For the purpose of offsets in the NA NSR program for $PM_{2.5}$, the final rules allow reductions in direct $PM_{2.5}$ emissions to offset precursor emissions increases, emissions reductions of one precursor to offset emissions increases of another precursor, and reductions in precursor emissions to offset direct $PM_{2.5}$ emissions increases.

We have completed a technical assessment to develop preferred interpollutant trading ratios that may be used for the purposes of $PM_{2.5}$ offsets, where appropriate. The preferred ratios were generated with a $PM_{2.5}$ response surface modeling (RSM) approach based on the EPA's Community Multi-Scale Air Quality (CMAQ) model. This RSM approach allows one to distinguish the impact of direct and precursor emissions from particular source groupings on total $PM_{2.5}$ concentrations within nine specific urban areas and broadly across U.S. regions. This approach was recently applied by the Agency to inform development of potential $PM_{2.5}$ control strategies as part of the Regulatory Impact Assessment (RIA) for the final $PM_{2.5}$ NAAQS.[14] Based on results from the RSM, we determined the distribution of predicted ratios for urban areas and regions across the country and developed the preferred ratios with a goal to be environmentally protective. The technical approach with details on data and modeling inputs are fully described in a technical memo to the docket, "Details on Technical Assessment to Develop Interpollutant Trading Ratios for $PM_{2.5}$ Offsets."[15] Use of the preferred ratios is recommended by EPA but not mandatory, and we do not intend to preclude the opportunity for a local demonstration of trading ratios on a case-by-case basis and public input into that process.

Our work here and in other recent $PM_{2.5}$ assessments clearly show that the relative efficacy of emissions reductions varies across pollutants and that a ton of direct $PM_{2.5}$ is generally more effective than a ton of precursor emissions in reducing overall $PM_{2.5}$ concentrations. For the purposes of reporting information here, we define the "East" to be the 37 States either completely or in part east of 100 degrees west longitude. "West"

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[14] A full description of this approach is available in the technical support document at http://www.epa.gov/scram001/reports/pmnaaqs_tsd_rsm_all_021606.pdf and in the docket for this rulemaking, Docket ID No. EPA-HQ-OAR-2003-0062.

[15] Available in the docket for this rulemaking, Docket ID No. EPA-HQ-OAR-2003-0062.

would include the remaining 11 western-most States in the continental United States. We found the following relationships between pollutants in developing the preferred trading ratios:

1. NO_X to SO_2; SO_2 to NO_X: Our assessment indicated potential disbenefits of reducing NO_X (i.e., reducing NO_X tons in urban areas may increase overall $PM_{2.5}$ concentrations) in the eastern United States and urban areas in the western United States. Due to the possibility of these disbenefits and the high degree of variability in the observed NO_X to SO_2 ratios or SO_2 to NO_X ratios across urban areas, we are not defining preferred ratios involving trades between these precursors but will rely upon a local demonstration to determine the appropriate trading ratios.
2. NO_X to Primary $PM_{2.5}$; Primary $PM_{2.5}$ to NO_X: Based on a local demonstration that NO_X reductions are beneficial in reducing $PM_{2.5}$ concentrations (i.e., no disbenefits from NO_X reductions as noted previously), our assessment indicates that the preferred trading ratio is 200 to 1 (NO_X tons for $PM_{2.5}$ tons) or 1 to 200 ($PM_{2.5}$ tons for NO_X tons) for areas in the eastern United States, and 100 to 1 (NO_X tons for $PM_{2.5}$ tons) or 1 to 100 ($PM_{2.5}$ tons for NO_X tons) for areas in the western United States.
3. SO_2 to Primary $PM_{2.5}$; Primary $PM_{2.5}$ to SO_2: We have determined a nationwide preferred ratio of 40 to 1 (SO_2 tons for $PM_{2.5}$ tons) or 1 to 40 ($PM_{2.5}$ tons for SO_2) for trades between these pollutants. We recognize there is spatial variability here between urban and regionally located sources of these

pollutants that can be addressed through a local demonstration to determine an area-specific relationship, as appropriate.

We recommend that States use these hierarchies and trading ratios in their interpollutant trading programs to provide consistency and streamline the trading process. As indicated by our work and findings, it is appropriate to establish acceptable trading ratios for interpollutant trading for $PM_{2.5}$ NSR offsets. If States elect to use EPA's recommended trading ratios, they may rely on EPA's technical work and a presumption that such ratios will be approvable by EPA absent a credible showing that EPA's trading ratios are not appropriate for that location. If States choose to develop their own hierarchies/trading ratios, they will have to substantiate by modeling and/or other technical demonstrations of the net air quality benefit for $PM_{2.5}$ ambient concentrations, and such a trading program will have to be approved by EPA.

We acknowledge that the relationship between pollutants can vary across geographic areas. Thus, local demonstrations, to determine trading ratios, will need to address a number of local factors including, but not limited to, the following:

1. The relative magnitude of emissions of direct $PM_{2.5}$ and precursor gases (e.g., SO_2 and NO_X) within the geographic area of interest.
2. The relative contribution to local $PM_{2.5}$ nonattainment of directly emitted $PM_{2.5}$ and individual precursors from the various sources or source categories under consideration as part of a potential interpollutant trade.
3. The meteorological conditions and topography of the area, which result in different source-receptor relationships across pollutants within the local area.

We have adopted this approach to capture the flexibility advantages of interpollutant trading, while remaining mindful of the limitations of existing air quality models. We believe that the regional-scale models used for area-wide attainment demonstrations have sufficient accuracy to establish an overall equivalence ratio for a nonattainment area. However, we do not believe that available models can accurately determine the effects of interpollutant trades at a single source. In addition, permit-by-permit modeling demonstrations are extremely resource intensive, only to yield limited results. For these reasons, the final rules only allow a State to develop its own interpollutant trading rule for inclusion in its SIP, based on a technical demonstration for a specific nonattainment area. We will not accept case-by-case demonstrations on an individual source permit basis.

The flexibility provided by this policy allows sources to select the most cost-effective manner to obtain the offsets necessary to ensure that $PM_{2.5}$ air quality improves. This will be particularly beneficial where offsets for one particular pollutant are scarce in a particular area, as is often the case for direct $PM_{2.5}$ emissions and SO_2.

We received a large number of comments on this issue representing a wide variety of viewpoints. Several commenters supported flexible interpollutant trading at ratios established either on an area-wide basis or permit by permit. They often pointed out the economic and administrative benefits of flexibility in the program, especially in areas where offsets for some pollutants will be difficult to obtain. One commenter asserted that such flexibility is essential to the ability of enterprises to be able to expand as the $PM_{2.5}$ NAAQS is implemented, especially in the program’s early years. Another commenter suggested allowing such trading on an equal basis, without the “unnecessary complication” of interpollutant offset ratios.

Many commenters argued against allowing interpollutant trading for offsets. These commenters commonly pointed out that direct $PM_{2.5}$ emissions typically have a more local impact, while the impact of precursor emissions are farther afield. A number of commenters pointed out the complex atmospheric chemistry of secondary particulate formation and the shortcomings of the air quality models currently available to perform a detailed $PM_{2.5}$ formation assessment, specifically that local-scale models are not sufficiently accurate and regional-scale models do not have the resolution to show local impacts adequately. According to two commenters, trading precursors for direct $PM_{2.5}$ emissions raises serious environmental justice concerns due to the localized impacts of direct $PM_{2.5}$ emissions. These commenters also asserted that the equivalence between precursors would vary spatially and temporally, making it extremely difficult to assess, and that $PM_{2.5}$ precursors also differ in their impacts on other air pollution problems, such as direct health and welfare impacts of SO_2 and NO_X; and formation of ozone, acid deposition, and reactive nitrogen deposition.

We also received comments opposing allowing interpollutant trading for netting purposes, on the basis that the resulting program would be very staff-intensive apart from the difficulty of demonstrating through modeling the net air quality benefit of a single source trade. We concur with these commenters and are not allowing interpollutant trading for netting purposes at this time.

A number of commenters supported some types of trades, but not others. Most frequently, these commenters favored allowing reductions in direct $PM_{2.5}$ emissions to offset precursor emissions increases. One commenter suggested a hierarchy as follows: direct $PM_{2.5}$ emissions, SO_2, NO_X, ammonia, and VOC. That is, a pollutant should be allowed as an offset for a pollutant ranked lower, but not the reverse (e.g., reductions in direct $PM_{2.5}$ emissions could be used to offset increases in any of the listed pollutants, SO_2 emissions reductions could offset NO_X increases, etc.).

As previously noted, this rule allows interpollutant and interprecursor trading of offsets according to a SIP-approved trading program. To be approved, the trading program must either adopt EPA's recommended trading ratios or be backed up by regional-scale modeling that demonstrates a net air quality benefit using appropriate overall offset ratios for such trades for a specified nonattainment area, State, or multi-State region. There is considerable uncertainty about the relationship of precursor and direct $PM_{2.5}$ emissions to localized ambient $PM_{2.5}$ concentration both spatially and temporally. Given the uncertainty as to localized adverse and beneficial effects, we have opted for program flexibility. We believe this is necessary, in part, because of the shortage of available offsets for some pollutants, particularly direct $PM_{2.5}$ emissions and SO_2, in many areas.

H. How will the transition to the $PM_{2.5}$ PSD requirements occur?

1. Background

On October 23, 1997, after the NAAQS for $PM_{2.5}$ was originally promulgated, we issued a guidance document entitled "Interim Implementation for the New Source Review Requirements for $PM_{2.5}$," John S. Seitz, EPA. As noted in that guidance, section 165 of the Act suggests that PSD requirements become effective for a new NAAQS upon the effective date of the NAAQS. Section 165(a)(1) of the Act provides that no new or modified major source may be constructed without a PSD permit that meets all of the section 165(a) requirements with respect to the regulated pollutant. Moreover, section 165(a)(3) provides that the emissions from any such source may not cause or contribute to a violation of any NAAQS. Also, section 165(a)(4) requires BACT for each pollutant subject to PSD regulation.

The 1997 guidance stated that sources should continue to use implementation of a PM_{10} program as a surrogate for meeting $PM_{2.5}$ NSR requirements until certain difficulties were resolved, primarily the lack of necessary tools to calculate the emissions of $PM_{2.5}$ and related precursors, the lack of adequate modeling techniques to project ambient impacts, and the lack of $PM_{2.5}$ monitoring sites. With this final action and technical developments in the interim, these difficulties have largely been resolved.

2. Transition for “Delegated States”

The Federal PSD program is contained in 40 CFR 52.21. This section is the Federal implementation plan for areas lacking an approved PSD program. We implement this program in Indian country and some U.S. territories, but for the most part we have delegated implementation of 40 CFR 52.21 to those States without approved PSD programs (typically referred to as “delegated States”). Except as provided in the grandfathering provisions that follow, these final rules go into effect and must be implemented beginning on the effective date of this rule, **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]** in all areas subject to 40 CFR 52.21, including the delegated States.

Consistent with 40 CFR 52.21(i)(1)(x), wherein EPA grandfathered sources or modifications with pending permit applications based on PM from the PM_{10} requirements established in 1987, EPA will allow sources or modifications who previously submitted applications in accordance with the PM_{10} surrogate policy to remain subject to that policy for purposes of permitting if EPA or its delegate reviewing authority subsequently determines the application was complete as submitted. This is contingent upon the completed permit application being consistent with the requirements pursuant to the EPA memorandum entitled “Interim Implementation of New Source Review Requirements for $PM_{2.5}$” (Oct. 23, 1997) recommending the use of PM_{10} as a surrogate for $PM_{2.5.}$ Accordingly, we have added 40 CFR 52.21(i)(1)(xi) to reflect this grandfathering provision.

3. Transition for “SIP-Approved States”

The requirements for State PSD programs are contained in 40 CFR 51.166. Most States have developed PSD programs according to these requirements, which we have approved into each State’s implementation plan. States with PSD programs approved under 40 CFR 51.166 are called “SIP-approved States.”

States with SIP-approved PSD programs that require amendments to incorporate these final NSR rule changes for $PM_{2.5}$ will need time to accomplish these SIP amendments. For example, a State may need to amend its existing regulations to add the specific significant emissions rate for $PM_{2.5}$ or a designated precursor. In our December 31, 2002 Federal Register notice promulgating other changes to the NSR program, we explained that the Act does not specifically address the timeframe by which States must submit SIP revisions when we revise the PSD and NA NSR rules. We nonetheless looked to section 110(a)(1) to guide our decision to require States to adopt and submit plan revisions within 3 years from when we publish changes in the Federal Register. We codified this approach in the PSD regulations at 40 CFR 51.166(a)(6)(i) and applied this same timeframe to State NA NSR programs through that final rule action. 64 FR 80241.

This rule follows our established approach for determining when States must adopt and submit revised SIPs following changes to the NSR regulations, but does not revise otherwise applicable SIP submittal deadlines. Accordingly, we are requiring States with SIP-approved PSD programs to submit revised PSD programs and revised NA NSR programs for $PM_{2.5}$ (see section V.I.) within 3 years from the date of this action[16].

During this SIP development period, the $PM_{2.5}$ NAAQS must still be protected under the PSD program in such States. We are finalizing our proposed option 1 that if a SIP-approved State is unable to implement a PSD program for the $PM_{2.5}$ NAAQS based on these final rules, the State may continue to implement a PM_{10} program as a surrogate to meet the PSD program requirements for $PM_{2.5}$ pursuant to the 1997 guidance mentioned previously. Under option 1 for SIP-approved States, we had proposed two additional requirements. These were to require sources to demonstrate that emissions from construction or operation of the facility will not cause or contribute to a violation of the $PM_{2.5}$ NAAQS and to include condensable PM emissions in determining major NSR

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[16] In our proposal, we proposed April 5, 2008 as a deadline for States to comply with the revised nonattainment NSR and PSD requirements in this rule. However, in light of the time it has taken to complete this final rule, expecting States to submit required SIP revisions consistent with this final rule by April 5, 2008 is no longer practical or fair. Nevertheless, States are still currently required to implement a PSD program for $PM_{2.5}$, and we still expect States to fulfill the SIP infrastructure requirements of CAA section 110(a)(2), including the PSD program requirements, by April 5, 2008. We believe these PSD program requirements are currently met by implementing the transitional PSD program for $PM_{2.5}$ described in this preamble (a.k.a. the PM_{10} surrogate policy). In accordance with a Consent Decree in Environmental Defense and American Lung Ass'n v. Johnson, No. 1:05CV00493 (D.D.C. June 15, 2005), EPA must determine by October 5, 2008 whether each State has submitted the SIP revisions for the $PM_{2.5}$ PSD program required under section 110(a)(2) of the Act. This rulemaking does not change the specific guidance we previously provided to States on what they should submit by April 5, 2008 to comply with section 110(a)(2).

applicability and control requirements. We are not finalizing either of these additional requirements of our proposed option 1. We have dropped the requirement for demonstrating compliance with the $PM_{2.5}$ NAAQS in order to maintain consistency in the application of the existing surrogate policy across the PSD program during the interim period. Since in the final rule we are otherwise allowing SIP-approved States to continue with the existing PM_{10} surrogate policy to meet the PSD requirements for $PM_{2.5}$, partially implementing the PM_{10} surrogate policy in this manner would be confusing and difficult to administer. Thus, to ensure consistent administration during the transition period, we have elected to maintain our existing PM_{10} surrogate policy which only recommends as an interim measure that sources and reviewing authorities conduct the modeling necessary to show that PM_{10} emissions will not cause a violation of the PM_{10} NAAQS as a surrogate for demonstrating compliance with the $PM_{2.5}$ NAAQS. Also as discussed previously in section V.E, we are not requiring condensable emissions to be fully integrated into the $PM_{2.5}$ program until the end of the transition period to validate test methods discussed in section V.E of this preamble.

In our proposal, we offered two additional options for the SIP development period in States with SIP-approved PSD programs. Under option 2, we would have updated the 1997 guidance to reflect the provisions in these final rules and allowed States to run a $PM_{2.5}$ program pursuant to this updated guidance. Alternatively under option 2, we would have amended appendix S and 40 CFR 52.24 so that the PSD requirements of 40 CFR 52.21 would govern the issuance of major NSR permits during the SIP development period. Finally, under option 3, we would have allowed a State to request delegation of just the Federal $PM_{2.5}$ PSD program in 40 CFR 52.21 in that State. A State that otherwise had a SIP-approved PSD program could have requested delegation for $PM_{2.5}$ by informing us that it did not intend to submit a PSD SIP for $PM_{2.5}$ in the immediate future.

We received several comments supporting option 1, although some of these commenters requested that we not require condensable emissions to be included until the concerns with test methods were resolved. One of these commenters favored continuing to implement the PM_{10} program as a surrogate under the 1997 guidance to provide clarity and certainty to the permitting agency and regulated community. The commenter indicated that $PM_{2.5}$ inventories and methods for estimating emission rates are rudimentary and may even be nonexistent in some cases, which would make permitting onerous.

A few commenters opposed option 1. One of these commenters indicated that we should not continue outdated policy (i.e., the 1997 NSR guidance) because it does not address the $PM_{2.5}$ problem, cannot be implemented in some States, and does not incorporate precursor emissions.

Four commenters expressed support for option 2. Three of these suggested that we issue updated guidance to incorporate these PSD requirements for $PM_{2.5}$, while one preferred that we revise appendix S to point to the requirements of 40 CFR 52.21. We received one comment in favor of option 3 and three opposed.

Two commenters supported approaches different from our options. One of these commenters requested that the interim framework should, at a minimum, ensure that any new or modified project that exceeds thresholds use BACT. The commenter also suggested that we require offsets for projects approved before the other protective elements of the full PSD program are in place to ensure that there is no significant deterioration in air quality. Another commenter stated that none of the proposed options were viable for their State. The commenter requested that we allow States to continue their existing PM_{10} program as a surrogate for $PM_{2.5}$, without caveat.

As noted previously, we are finalizing proposed option 1, without the requirement of demonstrating compliance with the $PM_{2.5}$ NAAQS or the requirement to include condensable emissions. We believe that our final rule is reasonable for the following reasons. First, PM_{10} will act as an adequate surrogate for $PM_{2.5}$ in most respects, because all new major sources and major modifications that would trigger PSD requirements for $PM_{2.5}$ would also trigger PM_{10} requirements because $PM_{2.5}$ is a subset of PM_{10}. Second, both of the precursors designated in the final rule – SO_2 and NO_X (presumptively) – are already regulated under State NSR programs for other criteria pollutants. Thus, those precursors will be subject to NSR through those other programs. We do not believe that the other options or suggestions offer significant advantages that outweigh the utility and ease of implementation of this approach.

States may include grandfathering provisions similar to the ones EPA included in the transition requirements for 40 CFR 52.21.

I. How will the transition to the $PM_{2.5}$ NA NSR requirements occur?

1. Background

The requirements for State NA NSR programs are contained in 40 CFR 51.165. All States with nonattainment areas have developed NA NSR programs according to these requirements, which we have approved into each State's implementation plan. However, as noted previously, it takes time for a State to amend its SIP when it must make changes to its NA NSR program. According to the provisions of 40 CFR 52.24(k), during such an interim period when a State lacks an approved NA NSR program for a particular pollutant, appendix S of 40 CFR part 51 applies for NA NSR permitting.

Section 172(c)(5) of the Act requires that States issue major NSR permits for construction and major modifications of major stationary sources in any nonattainment area. Thus, since the $PM_{2.5}$ nonattainment designations became effective on April 5, 2005, States are now required to issue major NSR permits that address the section 173 NA NSR requirements for $PM_{2.5}$.

On the date that the $PM_{2.5}$ nonattainment designations took effect (April 5, 2005), we issued guidance to address implementation of the NA NSR program pending the completion of this action to develop implementation rules for $PM_{2.5}$. See memorandum from Stephen D. Page, Director, Office of Air Quality Planning and Standards to Regional Air Directors, “Implementation of New Source Review Requirements in $PM_{2.5}$ Nonattainment Areas” (April 5, 2005).

Our current guidance permits States to implement a PM_{10} NA NSR program as a surrogate to address the requirements of NA NSR for the $PM_{2.5}$ NAAQS. A State's surrogate major NSR program in $PM_{2.5}$ nonattainment areas may consist of either the implementation of the State’s SIP-approved NA NSR program for PM_{10} or implementation of a major NSR program for PM_{10} under the authority in 40 CFR part 51, appendix S.

2. Transition

With this finalization of the new $PM_{2.5}$ NSR implementation requirements under 40 CFR 51.165, States now have the necessary tools to implement a NA NSR program for $PM_{2.5}$. After the effective date of the amended rule (that is, **[INSERT DATE 60**

DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]), States will no longer be permitted to implement a NA NSR program for PM_{10} as a surrogate for the $PM_{2.5}$ NA NSR requirements. Most States will then need to implement a transitional $PM_{2.5}$ NA NSR program under appendix S (as amended in this rulemaking action) until EPA approves changes to a State's SIP-approved NA NSR program to reflect the new requirements under 40 CFR 51.165. At this time, we do not believe it is appropriate to allow grandfathering of pending permits being reviewed under the PM_{10} surrogate program in nonattainment areas, mainly because of a State’s obligations to expedite attainment and the fact that we had not established a similar precedent for transitioning from PM to PM_{10}.

The NA NSR provisions in a State’s existing SIP-approved NA NSR program would also apply in areas designated as nonattainment for the $PM_{2.5}$ NAAQS if the SIP-approved regulations contain a generic requirement to issue part D permits in areas designated as nonattainment for any criteria pollutant and do not otherwise need to be amended to incorporate the changes finalized in this action. States belonging to the following categories will need to revise their NA NSR regulations and submit them to

EPA for incorporation into the SIP within 3 years from the date of this action[17]:

- States that have nonattainment regulations which need to be amended to incorporate the new $PM_{2.5}$ requirements.
- States that have designated nonattainment areas for $PM_{2.5}$ and their nonattainment NSR regulations specifically list the areas in which NA NSR applies (i.e., the list does not include the designated nonattainment areas for $PM_{2.5}$).
- States that have not previously had nonattainment areas but now have nonattainment areas for $PM_{2.5}$.

These States will have to implement a transitional NA NSR permitting program for $PM_{2.5}$ pursuant to 40 CFR 52.24(k) and appendix S until their existing part D SIPs are revised to meet these new $PM_{2.5}$ NSR requirements under 40 CFR 51.165.

3. Implementation of NSR Under the "Emissions Offset Interpretative Ruling" (40 CFR part 51, appendix S) with Revisions

In general, appendix S requires new or modified major sources to meet LAER and obtain sufficient offsetting emissions reductions to assure that a new major source or

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[17] As discussed earlier, we are following the precedent we established in our 2002 rule for NA NSR program revisions to allow States adequate time to adopt these revisions. For practical and fairness reasons, we are not requiring the NA NSR elements of this rule to be submitted by April 5, 2008, as we had proposed. However, the States are still required to submit nonattainment plans for $PM_{2.5}$ (including NA NSR programs) on April 5, 2008. We believe this requirement is satisfied by implementing the transitional NA NSR program for $PM_{2.5}$ (a.k.a. the PM_{10} surrogate policy) described in our April 5, 2005 guidance, or, if submitted after the effective date of this rule, implementing Appendix S as revised in this rule. This rulemaking does not change the specific guidance we previously provided to States on what they should submit to EPA by April 5, 2008 to comply with nonattainment area requirements under Part D.

major modification of an existing major source will not interfere with the area's progress toward attainment. Readers should refer to appendix S for a complete understanding of these and other appendix S requirements. In this action, we are finalizing our proposed revisions to appendix S to include provisions necessary to implement a transitional NA NSR program for $PM_{2.5}$, including significant emissions rates applicable to major modifications for $PM_{2.5}$ and, as appropriate, precursors. Additionally, since we are finalizing interpollutant trading provisions in the NSR rules at 40 CFR 51.165, we are also amending appendix S to allow interpollutant trading for $PM_{2.5}$. Appendix S applies directly to new and modified major stationary sources. In accordance with the requirements of section 110(a)(2)(c) of the Act, we believe that the majority of States have the legal authority to issue permits consistent with these requirements under an existing SIP-approved permitting program. Nonetheless, at least one State has reported that it lacks the legal authority to issue permits implementing the requirements of appendix S under its existing permitting rules.

If a State is unable to apply the requirements of appendix S, we will act as the reviewing authority for the relevant portion of the permit. We believe that it is appropriate for EPA to issue the preconstruction permits in such circumstances. Congress amended the Act in 1990 to remove the requirements that would have applied a construction ban in areas that lacked a SIP-approved part D permit program. Thus, we believe that it is consistent with Congressional intent that either the State or EPA issues construction permits for those projects meeting the applicable criteria during the interim period. See the preamble of the proposal for this rule for more detail on the legal basis for requiring States to issue NA NSR permits pursuant to appendix S during the SIP development period (70 FR 66045-46).

We received three comments supporting the issuance of NA NSR permits under appendix S during the SIP development period. Two of these commenters expected States generally to be able to do so, while one suggested that EPA issue such permits because States will lack the authority to do so without protracted rule revisions. One of these commenters also suggested that we revise appendix S to authorize interprecursor trading during the transition period, believing that the paucity of existing direct $PM_{2.5}$ emissions and SO_2 offsets likely will make business expansion in $PM_{2.5}$ nonattainment areas from now until at least April 2008 impossible unless this is done. One commenter suggested that we suspend the 2005 $PM_{2.5}$ NSR guidance which allows use of PM_{10} emissions as a surrogate for $PM_{2.5}$ emissions in $PM_{2.5}$ nonattainment areas when we adopt the final $PM_{2.5}$ implementation rules, while three other commenters requested continued implementation of that guidance during the interim period.

As noted previously, this final action will require States to amend their NA NSR programs consistent with the amended rules at 40 CFR 51.165. During the SIP development period, where they have legal authority to do so, States must issue NA NSR permits under appendix S (as revised for purposes of the $PM_{2.5}$ program). To address one of the points raised by commenters, we are amending appendix S to allow interpollutant trading for $PM_{2.5}$ in this final rule. Where a State determines that it does not have legal authority to issue such permits, we will act as the reviewing authority. As of the effective date of this action, the 2005 $PM_{2.5}$ NSR guidance on use of PM_{10} emissions as a surrogate for $PM_{2.5}$ emissions will remain in effect only for PSD in the SIP-approved States during the SIP development period. In the delegated PSD States and in nonattainment areas, the new $PM_{2.5}$ requirements will apply immediately on the effective date of this final action.

J. Does major NSR apply to $PM_{2.5}$ precursors during the SIP development period?

As discussed previously in section V.A, we have taken final action on NSR applicability for $PM_{2.5}$ precursors. Specifically, we have designated SO_2 as a national precursor to $PM_{2.5}$ in all areas, NO_X as a “presumed-in” precursor in all areas, VOC as a “presumed-out” precursor in all areas, and ammonia as a “presumed-out” precursor. Thus, States have the option of excluding NO_X as a precursor by demonstrating that NO_X emissions are not a significant contributor to ambient $PM_{2.5}$ concentrations in a particular area. In addition, States have the option of identifying VOC and/or ammonia as precursor(s) by demonstrating that emissions of VOC and/or ammonia are a significant contributor in an area, and thus should be subject to major NSR.

In the proposal, during the SIP development period, we proposed that SO_2 should be treated as a regulated $PM_{2.5}$ precursor as of the effective date of this final rule since there is no doubt about its status as such in any area and proposed to defer NSR applicability for NO_X until a State SIP submittal so that if a State elected to submit information to rebut the presumption that NO_X is a regulated $PM_{2.5}$ precursor, the State would have an opportunity to do so in its SIP submittal. We also proposed that VOCs and ammonia would not be treated as $PM_{2.5}$ precursors during the interim period because they are presumed not to be precursors until they have been demonstrated to be through a State’s SIP submittal.

A few commenters supported staying the applicability of NSR to all precursors during the interim period. However, two of these supporters suggested that EPA establish mechanisms for interpollutant trading for offsets during the interim period so that increases in direct $PM_{2.5}$ emissions can be offset with SO_2 or NO_X emissions reductions. Another supporter noted that their State cannot impose obligations on NSR applicants until those obligations are established in State regulations or statutes. Another indicated that this delay would allow States the time to develop experience and knowledge in establishing local photochemical models and to performance test their accuracy.

Two commenters opposed staying NSR applicability for any precursors. They believe that this would make attainment more difficult. One commenter suggested that SO_2 should be designated as a precursor during the interim period, and another suggested the same for SO_2 and NO_X.

Based on the comments, we have been persuaded that SIP-approved PSD States will not have the authority to regulate $PM_{2.5}$ precursors before they have amended their SIPs to incorporate these requirements in attainment areas. Thus, in order to allow time for these States to revise their regulations to incorporate such requirements, this final action does not require regulation of SO_2 or NO_X as precursors to $PM_{2.5}$ under PSD until the SIP development period ends. In addition, we are allowing SIP-approved PSD States to continue with the existing PM_{10} surrogate policy to meet the PSD requirements for $PM_{2.5.}$ However, for delegated PSD States, SO_2 and NO_X are regulated as precursors from the effective date of this rule. However, these States or EPA have the option of excluding NO_X as a precursor by demonstrating that NO_X emissions are not a significant contributor to ambient $PM_{2.5}$ concentrations in a particular area.

For nonattainment areas, the transitional program pursuant to appendix S will apply on the effective date of this action. Under appendix S, SO_2 will be regulated as a precursor in all nonattainment areas for $PM_{2.5}$.. However, unlike in the proposal, NO_X will not be regulated as a precursor for $PM_{2.5}$ because we believe it is appropriate to give States the opportunity to determine whether NO_X emissions are a significant contributor to the ambient $PM_{2.5}$ problem, and to make the appropriate demonstration in their SIP. Finally, for States determining that VOC and/or ammonia are $PM_{2.5}$ precursors under their SIPs, we will approve their definition of "significant emissions rate" for each precursor based on an appropriate demonstration.

K. Are there any Tribal concerns?

Some Tribal areas may be designated as nonattainment, in part because of pollution that is transported from surrounding State lands. Tribal representatives have advocated for additional flexibility to address nonattainment problems caused by transported pollution, such as a pool of available NSR offset set-asides (which we expect would come from State offset pools or banks), because they have limited ability to generate offsets on their own. Tribal representatives have raised these and other concerns in discussions on implementation of the 8-hour ozone and $PM_{2.5}$ standards, and in comments on the 8-hour ozone implementation rule. We requested comment on whether emissions offset set-asides, possibly generated by innovative measures to promote additional emissions reductions, are an appropriate method to help level the playing field for the Tribes and support economic development in Tribal areas. We also requested comment on ways in which States may help provide the Tribes access to offsets from non-Tribal areas. We received no comments on these issues.

We recently proposed Tribal NSR rules. See 71 FR 48696, August 21, 2006. They include a NA NSR rule, which refers to appendix S for its substantive requirements, and a minor NSR rule. In recognition of the concerns mentioned above, we have proposed and sought comments on options for obtaining offset relief in that proposal. We will address these issues in the context of that rule.

L. What are the requirements for minor NSR for $PM_{2.5}$?

Pursuant to section 110(a)(2)(C) of the Act, States must have a minor source permitting program. This applies to new and modified stationary sources that are not considered major for a criteria pollutants or a precursor for a criteria pollutant. Prior to this action, States were required to include the following pollutants in their minor NSR program:

- VOC,
- SO_2,
- NO_X,
- CO,
- PM_{10}, and
- Lead (Pb).

Based on this action, States must now amend their minor source programs to include direct $PM_{2.5}$ emissions and precursor emissions in the same manner as included for purposes of $PM_{2.5}$ major NSR.

M. Rural Transport Areas

In the proposal for the Clean Air Fine Particle Implementation Rule and this NSR implementation rule for $PM_{2.5}$, we considered the option of classifying some nonattainment areas as transport areas that suffer from overwhelming transport, and of developing NA NSR rules specific to such areas. However, the final implementation rule does not include the rural transport classification. Consequently, no NA NSR rules have been developed or finalized in this rule.

VI. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order (EO) 12866 (58 FR 51735, October 4, 1993), this action is a “significant regulatory action” because it is likely to raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in the Executive Order. Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for review under EO 12866 and any changes made in response to OMB recommendations have been documented in the docket for this action.

B. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. The information collection requirements are not enforceable until OMB approves them. The Information Collection Request (ICR) document prepared by EPA has been assigned OMB Control Number 2060-0003 (EPA ICR No. 1230.21).

To achieve the purposes of the major NSR program, certain records and reports are necessary for the State or local agency (or the EPA Administrator in non-delegated States), for example, to: (1) confirm the compliance of status of stationary sources, identify any stationary sources not subject to the rules, and identify stationary sources subject to the rules; and (2) ensure that the stationary source control requirements are being achieved. The information would be used by EPA or State enforcement personnel to (1) identify stationary sources subject to the rules, (2) ensure that appropriate control technology is being properly applied, and (3) ensure that the emission control devices are being properly operated and maintained on a continuous basis.

This final NSR rule does not create new information collection requirements, but rather expands the coverage of the existing requirements of the major NSR program. Specifically, the rule changes finalized in this action add $PM_{2.5}$ to the list of air pollutants that must be addressed in the major NSR program, and the companion proposal adds certain elements that are necessary for a complete $PM_{2.5}$ NSR program. This change is unlikely to increase significantly the number of NSR permits that must be issued, but may add to the analyses that sources and Federal, State, and local reviewing authorities must conduct as part of the construction permit application and review process.

We expect the rule changes finalized in this action to increase the burden associated with major NSR permitting for tracking new emissions of $PM_{2.5}$ against increments; collecting ambient air quality monitoring data for existing $PM_{2.5}$ concentrations; reviewing the effects of $PM_{2.5}$ emissions on soils and vegetation, as well as on air quality related values in Class I areas; determining the appropriate best available control technology or lowest achievable emission rate; and/or obtaining offsets. At the same time, there would be a reduction in burden directly associated with the revocation of the annual increment for PM_{10}, which is proposed in the proposed rule.

Over the 3-year period covered by the ICR, we estimate an average annual burden increase of about 39,000 hours (about 8 percent) and $4.3 million (about 10 percent) for all industry entities that would be affected by this final NSR rule. For the same reasons, we also expect the final rule to increase burden for the State and local authorities reviewing permit applications when fully implemented. In addition, there would be additional burden for State and local agencies to revise their SIPs to incorporate the proposed changes. We estimate the combined increase in burden to average about 16,000 hours and $700,000 annually for all State and local reviewing authorities, which is less than 13 percent.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9. When this ICR is approved by OMB, the Agency will publish a technical amendment to 40 CFR part 9 in the Federal Register to display the OMB control number for the approved information collection requirements contained in this final rule.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the

Agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this proposed rule on small entities, “small entity” is defined as: (1) a small business as defined by the Small Business Administration’s regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government or a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field. .

After considering the economic impacts of this final rule on small entities, I certify that this rule will not have a significant economic impact on a substantial number of small entities. The requirements of this final rule apply only to new major stationary sources or major modifications of existing major stationary sources. This final rule does not create any new requirements under the major NSR program, but simply expands the program to cover an additional pollutant, referred to as $PM_{2.5}$. There is no reason to expect that the rule will significantly or uniquely affect small businesses, organizations, or governments (few, if any, of which act as reviewing authorities pursuant to this final rule).

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, we generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in aggregate, or to the private sector, of $100 million or more in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires us to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows us to adopt an alternative other than the least-costly, most cost-effective, or least-burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before we establish any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, we must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of our regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

We have determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any 1 year. The final rule does not add any new requirements to the NSR program; it simply expands the program to cover $PM_{2.5}$ in addition to the several other pollutants already defined as regulated NSR pollutants.

(Technically, the rule also subjects the precursors to $PM_{2.5}$ to the NSR program. However, these precursors (SO_2, NO_X, and VOC) are already subject to the existing NSR program.) As discussed previously in section VI.B on the Paperwork Reduction Act, the expansion of the NSR program to cover $PM_{2.5}$ will only marginally increase the expenditures of State, local, and tribal governments and the private sector on the program. Thus, this action is not subject to the requirements of sections 202 and 205 of the UMRA.

The EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. As noted previously, this rule does not create any new requirements under the major NSR program, but simply expands the program to cover an additional pollutant ($PM_{2.5}$). There is no reason to expect that the rule will significantly or uniquely affect small governments, few if any of which act as reviewing authorities.

E. Executive Order 13132 - Federalism

Executive Order 13132, entitled “Federalism” (64 FR 43255, August 10, 1999), requires us to develop an accountable process to ensure “meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.” “Policies that have federalism implications” is defined in the Executive Order to include regulations that have “substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.”

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the

States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Pursuant to the terms of Executive Order 13132, it has been determined that this proposed rule does not have “federalism implications” because it does not meet the necessary criteria. Thus, the requirements of section 6 of the Executive Order do not apply to this proposed rule.

In the spirit of Executive Order 13132, however, and consistent with our policy to promote communications between us and State and local governments, we specifically solicited comment on the proposed rule from State and local officials.

F. Executive Order 13175 - Consultation and Coordination with Indian Tribal Governments

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by Tribal officials in the development of regulatory policies that have Tribal implications." This final rule does not have "Tribal implications" as defined in Executive Order 13175. This rule concerns the NSR requirements for State and tribal implementation plans. The CAA provides for States to develop plans to regulate emissions of air pollutants within their jurisdictions. The Tribal Air Rule (TAR) under the CAA gives Tribes the opportunity to develop and implement CAA programs such as programs to attain and maintain the $PM_{2.5}$ NAAQS, but it leaves to the discretion of the Tribe the decision of whether to develop these programs and which programs, or appropriate elements of a program, they will adopt.

Although Executive Order 13175 does not apply to this rule, EPA did reach out to Tribal leaders and environmental staff in developing this rule. From 2001 – 2004, the

EPA supported a National Designations Workgroup to provide a forum for tribal professionals to give input to the designations process. In 2006, EPA supported a national "Tribal Air call" which provides an open forum for all Tribes to voice concerns to EPA about the NAAQS implementation process, including the $PM_{2.5}$ NAAQS. In these meetings, EPA briefed call participants and Tribal environmental professionals gave input as the rule was under development. Furthermore, in December 2005, EPA sent individualized letters to all federally recognized Tribes about the proposal to give Tribal leaders the opportunity for consultation.

This final rule does not have Tribal implications as defined by Executive Order 13175. It does not have a substantial direct effect on one or more Indian Tribes, since no Tribe has implemented a CAA program to attain the $PM_{2.5}$ NAAQS at this time. The EPA notes that even if a Tribe were implementing such a plan at this time, while the rule might have Tribal implications with respect to that Tribe, it would not impose substantial direct costs upon it, nor would it preempt Tribal law.

Furthermore, this rule does not affect the relationship or distribution of power and responsibilities between the Federal government and Indian Tribes. The CAA and the TAR establish the relationship of the Federal government and Tribes in developing plans to attain the NAAQS, and this rule does nothing to modify that relationship. As this rule does not have Tribal implications, Executive Order 13175 does not apply.

G. Executive Order 13045 - Protection of Children from Environmental Health and Safety Risks

Executive Order 13045, entitled “Protection of Children from Environmental Health Risks and Safety Risks” (62 FR 19885, April 23, 1997), applies to any rule that:

(1) is determined to be "economically significant" as defined under Executive Order 12866; and (2) concerns an environmental health or safety risk that we have reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This final rule is not subject to the Executive Order because it is not economically significant as defined in Executive Order 12866, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This rule does not impose any new requirements under the NSR program. However, in expanding the major NSR program to address $PM_{2.5}$, we believe that this rule will serve to reduce environmental health risks to all citizens, including children, because one of the basic requirements of the major NSR program is that new and modified major stationary sources must not cause or contribute to air quality in violation of the NAAQS.

H. Executive Order 13211 - Actions That Significantly Affect Energy Supply, Distribution, or Use

This rule is not a "significant energy action" as defined in Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355 (May 22, 2001)) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. The final rule does not add any new requirements to the major NSR program; it simply expands the program to cover $PM_{2.5}$ in addition to the several other pollutants already defined as regulated NSR pollutants. Although the major NSR program may apply to energy supply and distribution companies that build or significantly modify major sources of regulated NSR pollutants, we believe that any increase in expenditures for obtaining NSR permits that may result from this rule will be marginal rather than significant.

I. National Technology Transfer and Advancement Act

As noted in the proposed rule, section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law No. 104-113, 12(d) (15 U.S.C. 272 note) directs us to use voluntary consensus standards (VCS) in our regulatory and procurement activities unless to do so would be inconsistent with applicable law or otherwise impractical. The VCS are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) developed or adopted by one or more voluntary consensus bodies. The NTTAA directs us to provide Congress, through annual reports to OMB, with explanations when we do not use available and applicable VCS.

This final rule does not involve technical standards. Therefore, we did not consider the use of any VCS.

J. Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629 (Feb. 16, 1994)) establishes Federal executive policy on environmental justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minorities and low-income populations in the United States.

The EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it will have the effect of improving air quality. While it does not impose any new requirements under the major NSR program, we believe that this rule, in expanding the NSR program to address $PM_{2.5}$, will serve to reduce adverse human health and environmental effects for all citizens, including minorities and low-income populations.

K. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A major rule cannot take effect until 60 days after it is published in the Federal Register. This action is not a “major rule” as defined by 5 U.S.C. 804(2). The rules affected by this action will be effective **[INSERT DATE 60 DAYS FROM DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

L. Petitions for Judicial Review

Under section 307(b)(1) of the Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the District of Columbia Circuit by **[INSERT DATE 60 DAYS FROM DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. See Act section 307(b)(2).

M. Determination Under Section 307(d)

The PSD portions of this rulemaking, which implements part C of title I of the Act, are subject to the procedural requirements in section 307(d) of the Act. See section 307(d)(1)(J). In addition, pursuant to section 307(d)(1)(V) of the Act, the Administrator determines that the NA NSR portions of this action should also be subject to the provisions of section 307(d) to ensure consistency. All of the procedural requirements of section 307(d), e.g., docketing, hearing, and comment periods, have been complied with during the course of this rulemaking.

VII. Statutory Authority

The statutory authority for this action is provided by sections 101, 110, 165, 169, 172, 173, 301, and 302 of the Act as amended (42 U.S.C. 7401, 7410, 7475, 7479, 7502, 7503, 7601, and 7602). This rulemaking is also subject to section 307(d) of the Act (42 U.S.C. 7407(d)).

List of Subjects

40 CFR Part 51

Environmental protection, Administrative practices and procedures, Air pollution control, Intergovernmental relations.

40 CFR Part 52

Environmental protection, Administrative practices and procedures, Air pollution control, Intergovernmental relations.

Dated:

Stephen L. Johnson,
Administrator.

For the reasons stated in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows.

PART 51 - [Amended]

1. The authority citation for part 51 continues to read as follows:

Authority: 23 U.S.C. 101; 42 U.S.C. 7401 - 7671q.

Subpart I - [Amended]

2. Section 51.165 is amended as follows:

a. By revising paragraph (a)(1)(x)(A);

b. By removing the word “or” at the end of paragraph (a)(1)(xxxvii)(B);

c. By revising paragraph (a)(1)(xxxvii)(C);

d. By adding paragraph (a)(1)(xxxvii)(D);

e. By redesignating paragraphs (a)(9)(i) through (iii) as paragraphs (a)(9)(ii) through (iv), respectively, and adding new paragraph (a)(9)(i);

f. By removing from newly redesignated paragraph (a)(9)(iii) the reference to “paragraph (a)(9)(i)” and adding in its place “paragraph (a)(9)(ii)”; and

g. By adding paragraph (a)(11).

§51.165 Permit requirements.

(a) * * *

(1) * * *

(x)(A) Significant means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:

Pollutant Emission Rate

Carbon monoxide: 100 tons per year (tpy)

Nitrogen oxides: 40 tpy

Sulfur dioxide: 40 tpy

Ozone: 40 tpy of volatile organic compounds or nitrogen oxides

Lead: 0.6 tpy

PM_{10}: 15 tpy

$PM_{2.5}$: 10 tpy of direct $PM_{2.5}$ emissions; 40 tpy of sulfur dioxide emissions; 40 tpy of nitrogen oxide emissions unless demonstrated not to be a $PM_{2.5}$ precursor under paragraph (a)(1)(xxxvii) of this section

* * * * *

(xxxvii) * * *

(C) Any pollutant that is identified under this paragraph (a)(1)(xxxvii)(C) as a constituent or precursor of a general pollutant listed under paragraph (a)(1)(xxxvii)(A) or (B) of this section, provided that such constituent or precursor pollutant may only be regulated under NSR as part of regulation of the general pollutant. Precursors identified by the Administrator for purposes of NSR are the following:

(1) Volatile organic compounds and nitrogen oxides are precursors to ozone in all ozone nonattainment areas.

(2) Sulfur dioxide is a precursor to $PM_{2.5}$ in all $PM_{2.5}$ nonattainment areas.

(3) Nitrogen oxides are presumed to be precursors to $PM_{2.5}$ in all $PM_{2.5}$

nonattainment areas, unless the State demonstrates to the Administrator’s satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to that area’s ambient $PM_{2.5}$ concentrations.

(4) Volatile organic compounds and ammonia are presumed not to be precursors to $PM_{2.5}$ in any $PM_{2.5}$ nonattainment area, unless the State demonstrates to the Administrator’s satisfaction or EPA demonstrates that emissions of volatile organic compounds or ammonia from sources in a specific area are a significant contributor to that area’s ambient $PM_{2.5}$ concentrations; or

(D) $PM_{2.5}$ emissions and PM_{10} emissions shall include gaseous emissions from a source or activity which condense to form particulate matter at ambient temperatures. On or after January 1, 2011 (or any earlier date established in the upcoming rulemaking codifying test methods), such condensable particulate matter shall be accounted for in applicability determinations and in establishing emissions limitations for $PM_{2.5}$ and PM_{10} in nonattainment major NSR permits. Compliance with emissions limitations for $PM_{2.5}$ and PM_{10} issued prior to this date shall not be based on condensable particulate matter unless required by the terms and conditions of the permit or the applicable implementation plan. Applicability determinations made prior to this date without accounting for condensable particulate matter shall not be considered in violation of this section unless the applicable implementation plan required condensable particulate matter to be included.

* * * * *

(9)(i) The plan shall require that in meeting the emissions offset requirements of paragraph (a)(3) of this section, the ratio of total actual emissions reductions to the emissions increase shall be at least 1:1 unless an alternative ratio is provided for the applicable nonattainment area in paragraphs (a)(9)(ii) through (a)(9)(iv) of this section.

* * * * *

(11) The plan shall require that in meeting the emissions offset requirements of paragraph (a)(3) of this section, the emissions offsets obtained shall be for the same regulated NSR pollutant unless interprecursor offsetting is permitted for a particular pollutant as specified in this paragraph. The plan may allow the offset requirements in paragraph (a)(3) of this section for direct $PM_{2.5}$ emissions or emissions of precursors of $PM_{2.5}$ to be satisfied by offsetting reductions in direct $PM_{2.5}$ emissions or emissions of any $PM_{2.5}$ precursor identified under paragraph (a)(1)(xxxvii)(C) of this section if such offsets comply with the interprecursor trading hierarchy and ratio established in the approved plan for a particular nonattainment area.

* * * * *

3. Section 51.166 is amended as follows:

a. By revising paragraphs (b)(23)(i) and (b)(49)(i);

b. By removing the word “or” at the end of paragraph (b)(49)(iii);

c. By adding and reserving paragraph (b)(49)(v);

d. By adding paragraph (b)(49)(vi); and

e. By revising paragraphs (i)(5)(ii) and (i)(5)(iii).

§51.166 Prevention of significant deterioration of air quality.

* * * * *

(b) * * *

(23)(i) Significant means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:

Pollutant and Emissions Rate

Carbon monoxide: 100 tons per year (tpy)

Nitrogen oxides: 40 tpy

Sulfur dioxide: 40 tpy

Particulate matter: 25 tpy of particulate matter emissions. 15 tpy of PM_{10} emissions.

$PM_{2.5}$: 10 tpy of direct $PM_{2.5}$ emissions; 40 tpy of sulfur dioxide emissions; 40 tpy of nitrogen oxide emissions unless demonstrated not to be a $PM_{2.5}$ precursor under paragraph (b)(49) of this section

Ozone: 40 tpy of volatile organic compounds or nitrogen oxides

Lead: 0.6 tpy

Fluorides: 3 tpy

Sulfuric acid mist: 7 tpy

Hydrogen sulfide (H_2S): 10 tpy

Total reduced sulfur (including H_2S): 10 tpy

Reduced sulfur compounds (including H_2S): 10 tpy

Municipal waste combustor organics (measured as total tetra-through octa-chlorinated dibenzo-p-dioxins and dibenzofurans): 3.2 x 10^{-6} megagrams per year (3.5 x 10^{-6} tons per year).

Municipal waste combustor metals (measured as particulate matter): 14 megagrams per year (15 tons per year)

Municipal waste combustor acid gases (measured as sulfur dioxide and hydrogen chloride): 36 megagrams per year (40 tons per year)

Municipal solid waste landfill emissions (measured as nonmethane organic compounds): 45 megagrams per year (50 tons per year)

* * * * *

(49) * * *

(i) Any pollutant for which a national ambient air quality standard has been promulgated and any pollutant identified under this paragraph (b)(49)(i) as a constituent or precursor to such pollutant. Precursors identified by the Administrator for purposes of NSR are the following:

(a) Volatile organic compounds and nitrogen oxides are precursors to ozone in all attainment and unclassifiable areas.

(b) Sulfur dioxide is a precursor to $PM_{2.5}$ in all attainment and unclassifiable areas.

(c) Nitrogen oxides are presumed to be precursors to $PM_{2.5}$ in all attainment and unclassifiable areas, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to that area's ambient $PM_{2.5}$ concentrations.

(d) Volatile organic compounds are presumed not to be precursors to $PM_{2.5}$ in any attainment or unclassifiable area, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of volatile organic compounds from sources in a specific area are a significant contributor to that area's ambient $PM_{2.5}$ concentrations.

* * * * *

(v) [Reserved.]

(vi) Particulate matter (PM) emissions, $PM_{2.5}$ emissions, and PM_{10} emissions shall include gaseous emissions from a source or activity which condense to form particulate matter at ambient temperatures. On or after January 1, 2011 (or any earlier date established in the upcoming rulemaking codifying test methods), such condensable particulate matter shall be accounted for in applicability determinations and in establishing emissions limitations for PM, $PM_{2.5}$ and PM_{10} in PSD permits. Compliance with emissions limitations for PM, $PM_{2.5}$ and PM_{10} issued prior to this date shall not be based on condensable particular matter unless required by the terms and conditions of the permit or the applicable implementation plan. Applicability determinations made prior to this date without accounting for condensable particular matter shall not be considered in violation of this section unless the applicable implementation plan required condensable particular matter to be included.

* * * * *

(i) * * *

(5) * * *

(ii) The concentrations of the pollutant in the area that the source or modification would affect are less than the concentrations listed in paragraph (i)(5)(i) of this section; or

(iii) The pollutant is not listed in paragraph (i)(5)(i) of this section.

* * * * *

4. Appendix S to Part 51 is amended as follows:

a. By revising paragraphs II.A.10(i) and II.A.31;

b. By revising paragraph IV.A, Condition 3;

c. By redesignating paragraphs IV.G.1 through IV.G.3 as paragraphs IV.G.2 through IV.G.4, respectively, and adding new paragraph IV.G.1;

d. By removing from newly redesignated paragraph IV.G.3 the reference to “paragraph IV.G.1” and adding in its place “paragraph IV.G.2”; and

e. By adding paragraph IV.G.5.

Appendix S to Part 51—Emission Offset Interpretative Ruling

* * * * *

II. * * *

A. * * *

10. (i) Significant means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:

Pollutant and Emissions Rate

Carbon monoxide: 100 tons per year (tpy)

Nitrogen oxides: 40 tpy

Sulfur dioxide: 40 tpy

Ozone: 40 tpy of volatile organic compounds or nitrogen oxides

Lead: 0.6 tpy

Particulate matter: 25 tpy of particulate matter emissions

PM_{10}: 15 tpy

$PM_{2.5}$: 10 tpy of direct $PM_{2.5}$ emissions; 40 tpy of sulfur dioxide emissions

* * * * *

31. Regulated NSR pollutant, for purposes of this Ruling, means the following:

(i) Nitrogen oxides or any volatile organic compounds;

(ii) Any pollutant for which a national ambient air quality standard has been promulgated;

(iii) Any pollutant that is identified under this paragraph II.A.31(iii) as a constituent or precursor of a general pollutant listed under paragraph II.A.31(i) or (ii) of this Ruling, provided that such constituent or precursor pollutant may only be regulated under NSR as part of regulation of the general pollutant. Precursors identified by the Administrator for purposes of NSR are the following:

(a) Volatile organic compounds and nitrogen oxides are precursors to ozone in all ozone nonattainment areas.

(b) Sulfur dioxide is a precursor to $PM_{2.5}$ in all $PM_{2.5}$ nonattainment areas; or

(iv) Particulate matter (PM) emissions, $PM_{2.5}$ emissions and PM_{10} emissions shall include gaseous emissions from a source or activity which condense to form particulate matter at ambient temperatures. On or after January 1, 2011 (or any earlier date established in the upcoming rulemaking codifying test methods), such condensable particulate matter shall be accounted for in applicability determinations and in establishing emissions limitations for PM, $PM_{2.5}$ and PM_{10} in permits issued under this ruling. Compliance with emissions limitations for PM, $PM_{2.5}$ and PM_{10} issued prior to this date shall not be based on condensable particulate matter unless required by the terms and conditions of the permit or the applicable implementation plan. Applicability determinations made prior to this date without accounting for condensable particulate matter shall not be considered in violation of this section unless the applicable implementation plan required condensable particulate matter to be included.

* * * * *

IV. * * *

A. * * *

Condition 3. Emission reductions (offsets) from existing sources[5] in the area of the proposed source (whether or not under the same ownership) are required such that there will be reasonable progress toward attainment of the applicable NAAQS.[6] Except as provided in paragraph IV.G.5 of this Ruling (addressing PM$_{2.5}$ and its precursors), only intrapollutant emission offsets will be acceptable (e.g., hydrocarbon increases may not be offset against SO$_2$ reductions).

[5] Subject to the provisions of paragraph IV.C of this Ruling.

[6] The discussion in this paragraph is a proposal, but represents EPA's interim policy until final rulemaking is completed.

* * * * *

G. Offset ratios.

1. In meeting the emissions offset requirements of paragraph IV.A, Condition 3 of this Ruling, the ratio of total actual emissions reductions to the emissions increase shall be at least 1:1 unless an alternative ratio is provided for the applicable nonattainment area in paragraphs IV.G.2 through IV.G.4.

* * * * *

5. Interpollutant offsetting. In meeting the emissions offset requirements of paragraph IV.A, Condition 3 of this Ruling, the emissions offsets obtained shall be for the same regulated NSR pollutant unless interpollutant offsetting is permitted for a particular pollutant as specified in this paragraph IV.G.5. The offset requirements of paragraph IV.A, Condition 3 of this Ruling for direct $PM_{2.5}$ emissions or emissions of precursors of $PM_{2.5}$ may be satisfied by offsetting reductions of direct $PM_{2.5}$ emissions or emissions of any $PM_{2.5}$ precursor identified under paragraph II.A.31 (iii) of this Ruling if such offsets comply with an interprecursor trading hierarchy and ratio approved by the Administrator.

* * * * *

PART 52 – [Amended]

5. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 et seq.

Subpart A - [Amended]

6. Section 52.21 is amended as follows:

a. By revising paragraphs (b)(23)(i) and (b)(50)(i);

b. By removing the word “or” at the end of paragraph (b)(50)(iii);

c. By adding and reserving paragraph (b)(50)(v);

d. By adding paragraphs (b)(50)(vi) and (i)(1)(xi);

e. By revising paragraph (i)(5)(ii); and

f. By adding paragraph (i)(5)(iii).

§52.21 Prevention of significant deterioration of air quality.

* * * * *

(b) * * *

(23)(i) Significant means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:

Pollutant and Emissions Rate

Carbon monoxide: 100 tons per year (tpy)

Nitrogen oxides: 40 tpy

Sulfur dioxide: 40 tpy

Particulate matter: 25 tpy of particulate matter emissions

PM_{10}: 15 tpy

$PM_{2.5}$: 10 tpy of direct $PM_{2.5}$ emissions; 40 tpy of sulfur dioxide emissions; 40 tpy of nitrogen oxide emissions unless demonstrated not to be a $PM_{2.5}$ precursor under paragraph (b)(50) of this section

Ozone: 40 tpy of volatile organic compounds or nitrogen oxides

Lead: 0.6 tpy

Fluorides: 3 tpy

Sulfuric acid mist: 7 tpy

Hydrogen sulfide (H_2S): 10 tpy

Total reduced sulfur (including H_2S): 10 tpy

Reduced sulfur compounds (including H_2S): 10 tpy

Municipal waste combustor organics (measured as total tetra-through octa-chlorinated dibenzo-p-dioxins and dibenzofurans): 3.2×10^{-6} megagrams per year (3.5×10^{-6} tons per year)

Municipal waste combustor metals (measured as particulate matter): 14 megagrams per year (15 tons per year)

Municipal waste combustor acid gases (measured as sulfur dioxide and hydrogen chloride): 36 megagrams per year (40 tons per year)

Municipal solid waste landfills emissions (measured as nonmethane organic compounds): 45 megagrams per year (50 tons per year)

* * * * *

(50) * * *

(i) Any pollutant for which a national ambient air quality standard has been promulgated and any pollutant identified under this paragraph (b)(50)(i) as a constituent or precursor for such pollutant. Precursors identified by the Administrator for purposes of NSR are the following:

(a) Volatile organic compounds and nitrogen oxides are precursors to ozone in all attainment and unclassifiable areas.

(b) Sulfur dioxide is a precursor to $PM_{2.5}$ in all attainment and unclassifiable areas.

(c) Nitrogen oxides are presumed to be precursors to $PM_{2.5}$ in all attainment and unclassifiable areas, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to that area's ambient $PM_{2.5}$ concentrations.

(d) Volatile organic compounds are presumed not to be precursors to $PM_{2.5}$ in any attainment or unclassifiable area, unless the State demonstrates to the

Administrator's satisfaction or EPA demonstrates that emissions of volatile organic compounds from sources in a specific area are a significant contributor to that area's ambient $PM_{2.5}$ concentrations.

* * * * *

(v) [Reserved.]

(vi) Particulate matter (PM) emissions, $PM_{2.5}$ emissions and PM_{10} emissions shall include gaseous emissions from a source or activity which condense to form particulate matter at ambient temperatures. On or after January 1, 2011 (or any earlier date established in the upcoming rulemaking codifying test methods), such condensable particulate matter shall be accounted for in applicability determinations and in establishing emissions limitations for PM, $PM_{2.5}$ and PM_{10} in PSD permits. Compliance with emissions limitations for PM, $PM_{2.5}$ and PM_{10} issued prior to this date shall not be based on condensable particular matter unless required by the terms and conditions of the permit or the applicable implementation plan. Applicability determinations made prior to this date without accounting for condensable particular matter shall not be considered in violation of this section unless the applicable implementation plan required condensable particular matter to be included.

* * * * *

(i) * * *

(1) * * *

(xi) The source or modification was subject to 40 CFR 52.21, with respect to $PM_{2.5}$, as in effect before **[INSERT DATE 60 DAYS FROM DATE OF**

PUBLICATION IN FEDERAL REGISTER], and the owner or operator submitted an application for a permit under this section before that date consistent with EPA recommendations to use PM_{10} as a surrogate for $PM_{2.5}$, and the Administrator subsequently determines that the application as submitted was complete with respect to the $PM_{2.5}$ requirements then in effect, as interpreted in the EPA memorandum entitled "Interim Implementation of New Source Review Requirements for $PM_{2.5}$" (October 23, 1997). Instead, the requirements of paragraphs (j) through (r) of this section, as interpreted in the aforementioned memorandum, that were in effect before **[INSERT DATE 60 DAYS FROM DATE OF PUBLICATION IN FEDERAL REGISTER]** shall apply to such source or modification.

* * * * *

(5) * * *

(ii) The concentrations of the pollutant in the area that the source or modification would affect are less than the concentrations listed in paragraph (i)(5)(i) of this section; or

(iii) The pollutant is not listed in paragraph (i)(5)(i) of this section.

* * * * *