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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 50, 51, and 93

[EPA-HQ-OAR-2013-0691; FRL-9946-36-OAR]

RIN 2060-AQ48

Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is finalizing requirements that state, local and tribal air agencies would have to meet as they implement the current and future national ambient air quality standards (NAAQS) for fine particulate matter ($PM_{2.5}$). Specifically, this document provides details on meeting the statutory state implementation plan (SIP) requirements that apply to areas designated nonattainment for any $PM_{2.5}$ NAAQS, such as: general requirements for attainment plan due dates and attainment dates; emissions inventories; attainment demonstrations; provisions for demonstrating reasonable further progress; quantitative milestones; contingency measures; and nonattainment New Source Review (NNSR) permitting programs, among other things. This rule clarifies the specific attainment planning requirements that apply to $PM_{2.5}$ NAAQS nonattainment areas based on their classification (either Moderate or Serious), and the process for reclassifying Moderate areas to Serious. Additionally, in this document the EPA is revoking the 1997 primary annual standard for areas designated as attainment for that standard because the EPA revised the primary annual standard in 2012. The EPA first established the $PM_{2.5}$ NAAQS in 1997, completed a review and revision

of those standards in 2006, and most recently completed a review and revision of the $PM_{2.5}$ NAAQS on December 14, 2012.

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

ADDRESSES: The EPA has established a docket for this action, identified by Docket ID No. EPA-HQ-OAR-2013-0691. All documents in the docket are listed in the h*ttp://www.regulations.gov* Web site. Although listed in the index, some information is not publicly available, *e.g.*, Confidential Business Information 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. Publicly available docket materials are available either electronically in *http://www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT: For general information on this rule, contact Mr. Rich Damberg, Office of Air Quality Planning and Standards, U.S. EPA, by phone at (919) 541-5592 or by email at *damberg.rich@epa.gov*; or Mr. Patrick Lessard, Office of Air Quality Planning and Standards, U.S. EPA, by phone at (919) 541-5383 or by email at *lessard.patrick@epa.gov*. For information on the Information Collection Request (ICR), contact Mr. Butch Stackhouse, Office of Air Quality Planning and Standards, U.S. EPA, by phone at (919) 541-5208 or by email at *stackhouse.butch@epa.gov*.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Preamble Glossary of Terms and Acronyms

The following are abbreviations of terms used in the preamble.

AERR	Air Emissions Reporting Requirements
BACM	Best Available Control Measures

BACT	Best Available Control Technology
BART	Best Available Retrofit Technology
BC	Black Carbon
CAA	Clean Air Act
CAIR	Clean Air Interstate Rule
CAMx	Comprehensive Air Quality Model with Extensions
CBI	Confidential Business Information
CBSA	Core-based Statistical Area
CDD	Clean Data Determination
CFR	Code of Federal Regulations
CMAQ	Community Multi-Scale Air Quality Model
CSAPR	Cross-State Air Pollution Rule
CSN	Chemical Speciation Network
DOD	Department of Defense
DOT	Department of Transportation
EC	Elemental Carbon
EGU	Electric Generating Unit
EPA	Environmental Protection Agency
Fe	Iron
FEM	Federal Equivalent Method
FIP	Federal Implementation Plan
FRM	Federal Reference Method
HCl	Hydrogen Chloride
ICR	Information Collection Request
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MATS	Mercury and Air Toxics Standards
MSM	Most Stringent Measures
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NAPAP	National Acid Precipitation Assessment Program
NEI	National Emissions Inventory
NESHAP	National Emissions Standard for Hazardous Air Pollutants
NH_3	Ammonia
NH_4	Ammonium
NH_4NO_3	Ammonium Nitrate
NH_4HSO_4	Ammonium Bi-Sulfate
$(NH_4)_2SO_4$	Ammonium Sulfate
NNSR	Nonattainment New Source Review
NO_x	Nitrogen Oxides
NO_3	Nitrate
NSPS	New Source Performance Standards
O_3	Ozone
OM	Organic Mass
OMB	Office of Management and Budget

PM	Particulate Matter
$PM_{2.5}$	Particulate Matter Equal to or Less than 2.5 Microns in Diameter (Fine Particulate Matter)
PM_{10}	Particulate Matter Equal to or Less than 10 Microns in Diameter
PRA	Paperwork Reduction Act
PSD	Prevention of Significant Deterioration
RACM	Reasonably Available Control Measures
RACT	Reasonably Available Control Technology
RFP	Reasonable Further Progress
RICE	Reciprocating Internal Combustion Engines
SIP	State Implementation Plan
SOA	Secondary Organic Aerosols
SO_2	Sulfur Dioxide
SO_4	Sulfate
TAR	Tribal Authority Rule
TIP	Tribal Implementation Plan
TIP	Transportation Improvement Program
TSP	Total Suspended Particles
µm	Micrometer (Micron)
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

B. Entities affected by this rule

Entities potentially affected directly by this final rule include state, local and tribal governments and air pollution control agencies responsible for attainment and maintenance of the NAAQS. Entities potentially affected indirectly by this final rule as regulated sources include owners and operators of sources that emit $PM_{2.5}$, sulfur dioxide (SO_2), oxides of nitrogen (NO_x), volatile organic compounds (VOC) and/or ammonia (NH_3). Parties affected by the conformity-related elements include state and local transportation and air quality agencies, metropolitan planning organizations (MPOs), and all federal agencies including the U.S. Department of Transportation, the U.S. Department of Defense, the U.S. Department of Interior and the U.S. Department of Agriculture. Others potentially affected indirectly by this final rule include members of the general public who live, work, or recreate in areas affected by elevated ambient $PM_{2.5}$ levels in areas designated nonattainment for a $PM_{2.5}$ NAAQS.

C. Obtaining a copy of this document and other related information

In addition to being available in the docket, an electronic copy of this *Federal Register* document will be posted at *http://www3.epa.gov/airquality/particlepollution/actions.html*.

D. Organization of this Federal Register document

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II. Background

A. Introduction

Ambient, or outdoor, air can contain a variety of pollutants, including particulate matter (PM). Airborne PM can be comprised of either solid or liquid particles, and can be a complex mixture of particles in both solid and liquid form. The most common constituents of airborne PM include the following: sulfate (SO_4); nitrate (NO_3); ammonium (NH_4); elemental carbon (EC); organic mass (OM); and inorganic material, generally referred to as "crustal" material, which can include metals, dust, sea salt and other trace elements. Airborne PM can be of different sizes, commonly referred to as "coarse" and "fine" particles. Fine particles, in general terms, are PM with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers (μm). For this reason, particles of this size are referred to as $PM_{2.5}$. $PM_{2.5}$ particles commonly include "primary" particles and "secondary" particles. Primary particles, or direct $PM_{2.5}$, are emitted by sources directly into the air as solid or liquid particles (*e.g.*, elemental carbon from diesel engines or wildfires, or condensable organic particles from gasoline engines). Secondary particles are formed in the atmosphere as a result of chemical reactions between specific pollutants known as $PM_{2.5}$ precursors (*e.g.*, reactions between NO_x and SO_2 emissions from mobile and stationary sources combined with ammonia to form ammonium nitrate and ammonium sulfate).

The human health effects associated with long or short-term exposure to $PM_{2.5}$ are significant and include premature mortality, aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions and emergency room visits) and development of chronic respiratory disease. In addition, welfare effects associated with elevated $PM_{2.5}$ levels include visibility impairment as well as effects on sensitive ecosystems, materials damage and soiling and climatic and radiative processes.[1]

On December 14, 2012, the EPA made revisions to the suite of the NAAQS for PM to provide requisite protection of public health and welfare with an adequate margin of safety. The EPA also made corresponding revisions to the data handling conventions for PM and the ambient air monitoring, reporting and network design requirements for PM. Specifically, the agency revised the primary annual $PM_{2.5}$ standard by lowering the level from 15.0 to 12.0 $\mu g/m^3$ to provide increased protection against health effects associated with long- and short-term $PM_{2.5}$ exposures. The EPA did not revise the secondary annual $PM_{2.5}$ standard, which remains at 15.0 $\mu g/m^3$.[2] The EPA eliminated spatial averaging as part of the form of the $PM_{2.5}$ annual standards to avoid potential disproportionate impacts on at-risk populations. In addition, the EPA retained the level and form of the primary and secondary 24-hour $PM_{2.5}$ standards to continue to provide supplemental protection against health effects associated with short-term $PM_{2.5}$ exposures. Although not directly relevant to this rulemaking with respect to implementation of the $PM_{2.5}$

[1] For a complete discussion of the human health and welfare effects associated with exposure to elevated concentrations of particulate matter, *see generally* "Integrated Science Assessment for Particulate Matter." U.S. Environmental Protection Agency, Office of Research and Development, National Center for Environmental Assessment-RTP Division, February 10, 2010. EPA/600/R-08/139F. Available at: *http://www3.epa.gov/ttn/naaqs/standards/pm/s_pm_2007_isa.html*. *See* Chapter 2.
[2] 78 FR 3086 (January 15, 2013).

NAAQS, it should be noted that in December 2012, the EPA also did not revise the level or form of the primary and secondary 24-hour PM_{10} NAAQS, which remain at 150 $\mu g/m^3$.[3]

Estimates show that attainment of the primary $PM_{2.5}$ standards will result in hundreds fewer premature deaths each year, prevent tens of thousands of hospital admissions each year and prevent hundreds of thousands of doctor visits, absences from work and school and respiratory illnesses in children annually.[4] Attainment of the primary $PM_{2.5}$ standards will have welfare co-benefits in addition to direct human health benefits. The term "welfare co-benefits" covers both environmental and societal benefits of reducing pollution, such as reductions in visibility impairment, materials damage and ecosystem damage.[5]

B. Overview of $PM_{2.5}$ NAAQS and Implementation

1. General Background

Sections 108 and 109 of the Clean Air Act (CAA or Act) govern the establishment, review and revision, as appropriate, of the NAAQS for widespread pollutants emitted from numerous and diverse sources considered harmful to public health and the environment. The CAA requires two types of NAAQS: (i) *primary* standards, which set limits to protect public

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[3] This final rulemaking applies to implementation of the $PM_{2.5}$ NAAQS. For the PM_{10} NAAQS, states and the EPA will continue to implement those NAAQS in accordance with the applicable statutory requirements of the CAA and the EPA's existing guidance in the "The General Preamble for Implementation of Title I of the Clean Air Act (CAA) Amendments," 57 FR 13498 (April 16, 1992); and "State Implementation Plans for Serious PM-10 Nonattainment Areas: Addendum to the General Preamble for the Implementation of Title I of the Clean Air Act (CAA) Amendments," 59 FR 41998 (August 16, 1994). Throughout this preamble, these documents will be referred to as the "General Preamble" and the "Addendum," respectively.

[4] "Regulatory Impact Analysis for the Final Revisions to the National Ambient Air Quality Standards for Particulate Matter." U.S. Environmental Protection Agency, Office of Air Quality and Planning Standards, Health and Environmental Impacts Division, February 28, 2013. EPA-452/R-12-005. *See http://www3.epa.gov/ttn/naaqs/standards/pm/s_pm_2007_ria.html*.

[5] *Ibid.*

health, including the health of at-risk populations; and (ii) *secondary* standards, which set limits to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation and buildings.

The CAA also establishes important roles both for state and tribal governments and for the EPA in implementing the NAAQS. In accordance with the principle of cooperative federalism, both state and tribal governments and the EPA have respective authorities and responsibilities under the CAA. At the outset, the EPA has the authority and responsibility to promulgate the NAAQS. In turn, state, local and tribal air pollution control agencies ("air agencies") have the authority and primary responsibility for developing and implementing attainment plans that contain emission control measures needed to achieve the air quality standards in a timely manner in each nonattainment area, consistent with the requirements of the CAA. The EPA often assists states by promulgating regulations or providing guidance for meeting implementation requirements and by providing technical tools, including information on control measures.[6, 7]

The EPA also promulgates nationally applicable control requirements and emission limits for many sources such as new motor vehicles, certain categories of new and modified major

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[6] It is important to note that the EPA does not have a mandatory duty to promulgate an implementation rule for the $PM_{2.5}$ NAAQS, and the obligations of state and tribal air agencies to develop and submit an attainment plan are independent obligations and not conditioned upon the EPA promulgating an implementation rule for the $PM_{2.5}$ NAAQS.

[7] When the term "state" is used hereafter, it will refer generically to states, local air agencies, and tribal governments electing to be treated as states for the purposes of implementing the CAA. Of additional note is that the 1998 Tribal Authority Rule (TAR), which is found in 40 CFR part 49, which implements section 301(d) of the CAA, provides that tribes be treated in the same manner as a state when implementing certain sections of the CAA. It gives tribes the option of developing tribal implementation plans (TIPs), but unlike states, tribes are not required to develop implementation plans. Section IX.I of this preamble provides further discussion of tribal issues.

stationary sources and existing stationary sources of toxic air pollutants. These federal actions assist states by achieving emissions reductions from certain categories of sources nationwide, which can help with local attainment needs in a given nonattainment area. The EPA also has authority to provide funding, technical assistance, and guidance to states to support implementation of the NAAQS. In addition, the EPA has authority to address interstate transport of pollutants, in the event that states fail to do so. Through this authority, the EPA has addressed regional transport of pollutants from upwind states to downwind states, and has previously done so for purposes of the $PM_{2.5}$ NAAQS.[8] In addition, the EPA has the authority and responsibility to review and take action to approve or disapprove attainment plans submitted by states based upon whether they meet applicable statutory and regulatory requirements and to initiate the process for imposition of sanctions and/or issue federal implementation plans (FIPs) when states fail to fulfill their CAA obligations.

2. History of $PM_{2.5}$ NAAQS Implementation

The EPA first promulgated annual and 24-hour NAAQS for $PM_{2.5}$ in July 1997.[9] Prior to that time, the EPA had addressed ambient PM through other means, first by regulating "total suspended particles" (TSP) and then later by regulating $PM_{10.}$ After protracted litigation, the 1997 NAAQS for $PM_{2.5}$ were upheld by the U.S. Court of Appeals for the District of Columbia Circuit in March 2002.[10] The EPA subsequently promulgated designations for the 1997 $PM_{2.5}$ NAAQS nationwide, designating a number of areas as nonattainment for the 1997 $PM_{2.5}$

[8] *See* 76 FR 48208 (August 8, 2011).
[9] 62 FR 38652 (July 18, 1997).
[10] For a complete summary of legal challenges and related court decisions on the PM NAAQS, *see generally* 78 FR 3086 (January 15, 2013).

NAAQS, effective April 2005.[11] In April 2007, the EPA issued a detailed implementation rule to assist states with the development of SIP submissions to meet attainment plan requirements for the 1997 NAAQS (the "2007 $PM_{2.5}$ Implementation Rule").[12] In May 2008, the EPA issued another rule to assist states with SIP submissions to meet the specific requirements for permitting programs for NNSR purposes in designated nonattainment areas (the "2008 $PM_{2.5}$ NSR Rule").[13] The EPA premised both the 2007 $PM_{2.5}$ Implementation Rule and the 2008 $PM_{2.5}$ NSR Rule on the EPA's interpretation of the statute that nonattainment areas for the $PM_{2.5}$ NAAQS were subject solely to the general attainment plan requirements of subpart 1, part D of title I of the CAA ("subpart 1").

Section 109(d)(1) of the CAA requires the EPA periodically to review the science upon which the standards are based and the standards themselves, and to revise the standards as may be appropriate. In October 2006, the EPA promulgated revisions to the suite of the NAAQS for PM, and in particular the EPA revised the 24-hour $PM_{2.5}$ standards.[14] In accordance with section 107(d), the EPA subsequently designated a number of areas as nonattainment for the revised 2006 24-hour $PM_{2.5}$ standards, effective December 2009.[15] In March 2012, the EPA issued a guidance document specifically to aid states in preparing their SIP submissions to meet attainment plan requirements for the 2006 24-hour $PM_{2.5}$ NAAQS in designated nonattainment

[11] 70 FR 944 (January 5, 2005).
[12] 72 FR 20583 (April 25, 2007).
[13] 73 FR 28231 (May 16, 2008).
[14] 71 FR 61144 (October 17, 2006).
[15] 74 FR 58688 (November 13, 2009).

areas.[16] The EPA's guidance for the 2006 $PM_{2.5}$ NAAQS was based, in large part, on the requirements finalized in the 2007 $PM_{2.5}$ Implementation Rule, which the EPA based solely upon the statutory requirements of subpart 1.

The EPA initiated a review of the $PM_{2.5}$ NAAQS in June 2007, proposing revisions to the primary and secondary $PM_{2.5}$ NAAQS on June 29, 2012.[17] The EPA issued its final rule on December 14, 2012, in which it lowered the primary annual $PM_{2.5}$ standard from 15.0 $\mu g/m^3$ to 12.0 $\mu g/m^3$ to provide increased protection against health effects associated with long- and short-term fine particle exposures.[18] The EPA also eliminated spatial averaging as part of the form of the annual standard to avoid potential disproportionate impacts on at-risk populations.[19] The EPA retained the level (35 $\mu g/m^3$) and form (98^{th} percentile, averaged over 3 years) of the primary 24-hour $PM_{2.5}$ standard, as revised in 2006, to provide supplemental protection against health effects associated with short-term $PM_{2.5}$ exposures, especially in areas with high peak $PM_{2.5}$ concentrations.[20] This suite of primary $PM_{2.5}$ standards provides increased public health protection, including the health of at-risk populations which include children, older adults, persons with pre-existing health and lung disease and persons of lower socioeconomic status, against a broad range of $PM_{2.5}$-related effects that include premature mortality, increased hospital

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[16] Memorandum of March 2, 2012 (withdrawn June 6, 2013), from Stephen D. Page, Director, Office of Air Quality Planning and Standards, to the EPA Regional Air Directors, Regions I-X, "Implementation Guidance for the 2006 24-Hour Fine Particle ($PM_{2.5}$) National Ambient Air Quality Standards (NAAQS)." Available at: *http://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/20120302_page_implement_guidance_2006-24-hr_pm2.5_naaqs.pdf.*

[17] 77 FR 38890 (June 29, 2012).

[18] 78 FR 3086 (January 15, 2013).

[19] Spatial averaging of monitored ambient air quality data was a feature of the prior $PM_{2.5}$ NAAQS monitoring regulations which had the potential for masking particularly high $PM_{2.5}$ concentrations at certain monitored locations within nonattainment areas.

[20] 71 FR 61144 (October 17, 2006).

admissions and emergency department visits and development of chronic respiratory disease.[21] With regard to the secondary (welfare-based) standards, the EPA retained the existing annual $PM_{2.5}$ standard of 15.0 $\mu g/m^3$ and the existing 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$ to protect against PM-related non-visibility welfare effects including ecological effects, effects on materials and climate impacts. In addition, the secondary 24-hour $PM_{2.5}$ standard provides protection for PM-related visibility impairment.

On January 4, 2013, shortly after the EPA promulgated the 2012 revisions to the suite of PM NAAQS, the D.C. Circuit issued its decision in a challenge to the 2007 $PM_{2.5}$ Implementation Rule and the 2008 $PM_{2.5}$ NSR Rule. In *NRDC v. EPA*, the court held that the EPA erred in implementing the 1997 $PM_{2.5}$ NAAQS pursuant only to the general implementation requirements of subpart 1, rather than also to the implementation requirements specific to particulate matter (PM_{10}) in subpart 4, part D of title I of the CAA ("subpart 4").[22] The court reasoned that the plain meaning of the CAA requires implementation of the 1997 $PM_{2.5}$ NAAQS under subpart 4 because $PM_{2.5}$ particles fall within the statutory definition of PM_{10} and thus implementation of the $PM_{2.5}$ NAAQS is subject to the same statutory requirements as the PM_{10} NAAQS. In addition, although the court stated that its decision that the EPA must implement the $PM_{2.5}$ NAAQS pursuant to subpart 4 requirements meant that it did not have to reach decisions on other issues concerning the regulation of precursors to $PM_{2.5}$, the court nonetheless noted that subpart 4 has specific requirements with respect to regulation of such precursors. As a result, the

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[21] General information regarding the health effects associated with $PM_{2.5}$ exposures is available at: *http://www3.epa.gov/airquality/particlepollution/health.html*. Additional information, such as the EPA's technical documents supporting the latest review of the standards, is available at: *http://www.epa.gov/ttn/naaqs/standards/pm/s_pm_index.html*.

[22] *NRDC v. EPA*, 706 F.3d 428 (D.C. Cir. 2013).

court remanded to the EPA both the 2007 $PM_{2.5}$ Implementation Rule and the 2008 $PM_{2.5}$ NSR Rule, both of which were premised on the EPA's interpretation of the statute that subpart 1 was the only applicable subpart for the implementation of the 1997 $PM_{2.5}$ NAAQS in nonattainment areas. The court instructed the EPA "to repromulgate these rules pursuant to subpart 4 consistent with this opinion." Given the D.C. Circuit's opinion in *NRDC v. EPA*, the EPA withdrew its 2012 guidance document for the 2006 24-hour $PM_{2.5}$ NAAQS in June 2013. Because the court had concluded that the EPA and states must implement the $PM_{2.5}$ NAAQS consistent with the statutory requirements of subpart 4, the EPA's 2012 guidance for attainment plans for the 2006 $PM_{2.5}$ NAAQS premised solely upon subpart 1 requirements was no longer appropriate.

The EPA issued a notice of proposed rulemaking (NPRM) on March 23, 2015 (80 FR 15340) titled, "Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements" ($PM_{2.5}$ SIP Requirements Rule) to meet a number of objectives. This final rule accomplishes those objectives. It clarifies how states should meet the statutory SIP requirements that apply to areas designated nonattainment for any $PM_{2.5}$ NAAQS under subparts 1 and 4. It does so by establishing regulatory requirements and providing guidance that will be applicable to attainment plans for the 2012 $PM_{2.5}$ NAAQS and any future revisions of the $PM_{2.5}$ NAAQS, subject to revisions that may be necessary for implementation purposes in the future. In addition, this action responds to the D.C. Circuit's remand of the 2007 $PM_{2.5}$ Implementation Rule and the 2008 $PM_{2.5}$ NSR Rule. As a result, the requirements of the rule will also govern future actions associated with states' ongoing implementation efforts for the 1997 and 2006 $PM_{2.5}$ NAAQS.

The public comment period for the proposed $PM_{2.5}$ SIP Requirements Rule closed on May 29, 2015, and the EPA received 56 comments during that period. The preamble to this final

rule includes discussion of the most significant comments received on the proposal and how the EPA considered them in developing the agency's final action concerning the specific nonattainment planning requirements. The Response to Comments document that accompanies this final rule provides more detailed responses to the significant comments received. The public comments received on the NPRM and the EPA's Response to Comment document are posted in the docket at *http://www.regulations.gov* (Docket ID No. EPA-HQ-OAR-2013-0691).

C. Atmospheric Chemistry of $PM_{2.5}$ and Its Precursors

1. Overview

In order to determine how to regulate sources of direct $PM_{2.5}$ and $PM_{2.5}$ precursors to attain the $PM_{2.5}$ NAAQS in a given nonattainment area, it is necessary to understand the basic chemical processes that cause or contribute to the formation of ambient $PM_{2.5}$. Accordingly, an understanding of these processes is necessary to design appropriate regulations for implementation of the $PM_{2.5}$ NAAQS.

As noted earlier, the term $PM_{2.5}$ refers to particles of solid and liquid material less than 2.5 microns in aerodynamic diameter.[23] "Primary" $PM_{2.5}$ is emitted directly from emissions sources or activities, such as from diesel fuel combustion, wood burning, construction activities, and unpaved roads, and it includes both filterable and condensable particles.[24] "Secondary"

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[23] The regulatory definition of $PM_{2.5}$ includes particles with an upper 50 percent cut-point of 2.5μm aerodynamic diameter (the 50 percent cut-point diameter is the diameter at which the sample collects 50 percent of the particles and rejects 50 percent of the particles). $PM_{2.5}$ particles have a penetration curve as measured by a reference method based on Appendix L of 40 CFR part 50 and designated in accordance with 40 CFR part 53, by an equivalent method designed in accordance with 40 CFR part 53, or by an approved regional method designated in accordance with Appendix C of 40 CFR part 58.

[24] Certain commercial or industrial activities involving high temperature processes (*e.g.*, fuel combustion, metal processing, cooking operations) emit gaseous pollutants into the ambient air

$PM_{2.5}$ is formed as a result of emissions of certain precursor gases that undergo chemical reactions in the atmosphere. The principal precursor gases that contribute to secondary $PM_{2.5}$ formation are SO_2, from the combustion of coal or other high sulfur fuels; NO_x, from many types of fossil fuel combustion; VOC, from certain fuels, solvents and industrial processes; and ammonia, from sources such as animal feeding operations, wastewater treatment and fertilizer. To illustrate the types of sources that emit relevant pollutants, Table 1 provides National Emissions Inventory (NEI) data for 2011 that represent nonattainment area anthropogenic and wildfire emissions estimates for direct $PM_{2.5}$ and the four main $PM_{2.5}$ precursor gases from major source sectors.

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that rapidly condense into particle form. These "condensable" PM emissions exist almost entirely in the 2.5 or less micron range and can consist of organic material, sulfuric acid and metals.

Table 1. Total Emissions of $PM_{2.5}$ and Precursors for Major Sectors in $PM_{2.5}$ Nonattainment Areas[a] (in tons/year)

Source: 2011 National Emissions Inventory (Version 2)[b]

Category	Direct $PM_{2.5}$	SO_2	NO_x	VOC	NH_3
Fuel combustion, electric generating utilities (EGUs)	11,339	324,658	82,509	3,001	3,572
Fuel combustion, industrial	10,286	23,762	57,690	6,251	892
Fuel combustion, other	29,582	8,224	60,636	32,320	8,819
Chemical and allied products	1,504	1,329	1,056	2,828	685
Metals processing	4,037	19,490	4,543	4,586	130
Petroleum and related industries	1,534	7,273	3,775	18,830	215
Other industrial processes	24,168	8,466	22,599	24,928	1,094
Solvent utilization	1,089	39	56	242,022	68
Storage and transport	3,420	628	7,067	55,410	3,684
Waste disposal and recycling	4,143	830	4,130	16,492	19,389
Onroad mobile	21,073	2,598	540,800	234,136	17,525
Offroad mobile	13,660	5,874	239,169	152,504	150
Miscellaneous (includes emissions from fire,[c] dust and some agricultural operations)	158,565	7,368	13,734	248,835	236,577
Total	284,401	410,540	1,037,764	1,042,144	292,800

[a] There were 33 areas designated as nonattainment for the 1997, 2006, or 2012 $PM_{2.5}$ NAAQS as of June 6, 2016. These areas were comprised of 67 whole or partial counties. The emissions data in this table represents whole county emissions for the 67 counties because such data is readily available in EPA databases. Actual emissions totals for the 33 nonattainment areas in aggregate would be somewhat lower because some nonattainment areas include partial counties.

[b] For more details on the definitions of the emission categories listed in Table 1, *see* Sector/Tier crosswalk table for the 2011 NEI, available at: *ftp://ftp.epa.gov/EmisInventory/2011/doc/scc_eis_crosswalk_2011neiv1.xlsx*.

[c] Emissions from fire include wildfire, prescribed fire, and agricultural burning.

2. Composition and Sources of $PM_{2.5}$ Constituents

$PM_{2.5}$ is a complex and highly variable mixture of particles, but the majority of $PM_{2.5}$ by mass is often comprised of five constituents: (i) OM; (ii) EC; (iii) crustal material; (iv) ammonium sulfate ($(NH_4)_2SO_4$); and (v) ammonium nitrate (NH_4NO_3).[25] The discussion that follows provides an overview of each of the five major components of $PM_{2.5}$, all of which are known to contribute to ambient $PM_{2.5}$ levels in areas throughout the U.S.[26] Section II.C.3.d of this preamble provides more details on the atmospheric chemistry involved in the formation of sulfate, nitrate and OM, to illustrate the importance of controlling emissions of $PM_{2.5}$ precursors as part of any comprehensive strategy to reduce ambient $PM_{2.5}$ levels in excess of the NAAQS. Section II.C.4 of this preamble presents a brief overview of $PM_{2.5}$ composition by region of the U.S.

OM is the fraction of ambient $PM_{2.5}$ with the most diverse chemical composition, containing potentially thousands of different organic compounds (*i.e.*, those compounds containing carbon) composed primarily of carbon, hydrogen, oxygen and nitrogen. Both primary particles and secondary particles contribute to ambient OM concentrations, with combustion sources being the dominant type of emissions sources. Another portion of primary OM particles results from direct emissions of organic compounds from sources of incomplete combustion, such as gas and diesel engines. Secondary OM particle formation involves oxidation of both anthropogenic and biogenic (plant-derived) VOC, and can involve other, more complex chemical

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[25] Seinfeld J.H. and Pandis S.N., 2006. *Atmospheric Chemistry and Physics: From Air Pollution to Climate Change*. 2nd edition, J. Wiley, New York.

[26] U.S. Environmental Protection Agency, 2004. "The Particle Pollution Report: Current Understanding of Air Quality and Emissions through 2003." Office of Air Quality Planning and Standards, Emissions, Monitoring, and Analysis Division, December 2004. Available at: *http://www.epa.gov/airtrends/reports.html*.

reactions. Further details of the chemistry behind the formation of secondary OM, known more commonly as secondary organic aerosols (SOA), are described in Section II.C of this preamble.

EC refers to particulate carbon that has a graphitic molecular structure, and is sometimes referred to as "black carbon" (BC). It is emitted directly from emission sources and does not undergo any significant reactions with other gases in the atmosphere. EC particles result from primary emissions involving combustion, especially from diesel-fueled vehicles, but also from other processes involving the burning of fossil fuels. The latter include anthropogenic sources such as boilers and waste disposal. In addition, some EC particles originate from biomass combustion such as from prescribed fires, wildfires and residential wood combustion.

Crustal PM is comprised of particles of soil and oxides of metals from some industrial processes. Compounds comprised of elements such as silicon, aluminum, iron, calcium, titanium, magnesium and potassium, as well as oxygen, are major components.[27] Sources of crustal $PM_{2.5}$ include windblown dust, dust from mechanical resuspension (*e.g.* dust from construction activities or vehicles driving on unpaved roads) and some forms of combustion, especially of coal. Crustal $PM_{2.5}$ comprised of elements, like iron (Fe), and their oxides can also be emitted from industrial sources.

The remaining portion of ambient $PM_{2.5}$ is mostly composed of SO_4, NO_3 and NH_4, which react in the ambient air to form ammonium sulfate ($(NH_4)_2SO_4$) and ammonium nitrate (NH_4NO_3). Another common $PM_{2.5}$ particle is ammonium bi-sulfate (NH_4HSO_4). In some areas,

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[27] Appel, K.W., Pouliot, G.A., Simon, H., Sarwar, G., Pye, H.O.T., Napelenok, S.L., Akhtar, F., and Roselle, S.J., 2013. Evaluation of dust and trace metal estimates from the Community Multiscale Air Quality (CMAQ) model version 5.0, Geoscientific Model Development Discussions 61859-1899; Sorooshian, A., Shingler, T., Harpold, A., Feagles, C.W., Meixner, T., and Brooks, P.D., 2013. Aerosol and precipitation chemistry in the southwestern United States: spatiotemporal trends and interrelationships, Atmospheric Chemistry and Physics 13, 7361-7379.

less common ions such as chloride are also found in $PM_{2.5}$ samples in the form of particles that include sodium chloride and ammonium chloride. Particle-bound water is often also associated with this fraction of $PM_{2.5}$. Sulfate, nitrate and ammonium particles originate through both primary and secondary mechanisms, although the vast majority of these $PM_{2.5}$ particles are formed through secondary formation, as described in the following section.

3. Secondary Formation of $PM_{2.5}$ from Gaseous Precursors

a. Overview. The composition of $PM_{2.5}$ is complex and highly variable due in part to the large contribution of secondary $PM_{2.5}$ to total fine particle mass in most locations, and to the complexity of secondary particle formation processes. A large number of possible chemical reactions, often non-linear in nature, can convert the gases SO_2, NO_x, VOC and ammonia to $PM_{2.5.}$ Thus, these gases are precursors to $PM_{2.5}$. A brief discussion of SO_4, NO_3 and SOA formation, as well as the role of ammonia in their formation, follows.

b. SO_4 Formation. SO_2 is emitted mostly from the combustion of fossil fuels in boilers operated by electric utilities and other industries, with less than 10 percent of SO_2 emissions nationwide currently coming from other industrial sources, such as oil refining and pulp and paper production.[28] When SO_2 oxidizes it forms sulfuric acid, a highly corrosive compound toxic to humans and to ecosystems that contributes to acid deposition (acid rain). In the presence of ammonia, however, sulfuric acid will react to form $(NH_4)_2SO_4$, a less acidic compound and one of the five major components of $PM_{2.5}$. If there is not enough ammonia present to fully neutralize the sulfuric acid, part of it may convert to NH_4HSO_4, which is more acidic than $(NH_4)_2SO_4$, but

[28] U.S. Environmental Protection Agency, 2013. "2008 National Emissions Inventory: Review Analysis and Highlights." Office of Air Quality Planning and Standards, Air Quality Assessment Division, May 2013. EPA-454/R-005. Available at: *https://www.epa.gov/sites/production/files/2015-07/documents/2008report.pdf.*

less so than sulfuric acid. There is a large amount of emerging scientific evidence that SO_2 may also contribute to the formation of SOA from biogenic VOC emissions (*see* section later on SOA). Sulfate levels in the ambient air peak in summer months due to increased SO_2 emissions, generally from electric generating units (EGUs), and from meteorological conditions that are conducive to sulfate formation.

c. NO_3 Formation. The main sources of NO_x emissions are combustion of fossil fuel in boilers and mobile sources, accounting for more than 80 percent of national anthropogenic NO_x emissions (based on the 2011 NEI), with boilers and EGUs contributing about 27 percent and mobile sources contributing 56 percent. Oxides of nitrogen react in the atmosphere to form nitric acid, another prime contributor to acid deposition in the environment. Nitric acid converts to ammonium nitrate, one of the five main components of $PM_{2.5}$, in the presence of ammonia. Low temperatures and high relative humidity create ideal conditions for the formation of ammonium nitrate, typically leading to higher atmospheric levels in winter months and lower levels in summer months.[29]

d. SOA Formation. As discussed earlier, the OM component of ambient $PM_{2.5}$ is a complex mixture of hundreds or even thousands of anthropogenic and biogenic organic compounds. These compounds are either emitted directly from sources (*i.e.*, as "primary" $PM_{2.5}$) or formed by reactions in the ambient air to make SOA (*i.e.*, as "secondary" $PM_{2.5}$).

VOC (both anthropogenic and biogenic) are key precursors to the SOA component of $PM_{2.5}$. The relative importance of these compounds in the formation of organic particles varies between geographic areas, depending upon local emission sources, atmospheric chemistry and

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[29] Carlton, A.G., Pinder, R.W., Bhave, P.B., Pouliout, G.A., 2010. To What Extent Can Biogenic SOA Be Controlled, Environmental Science and Technology 44(9), 3376-80.

season of the year. It should be further noted that not all inventoried VOC may be contributing to the formation of organic particles. For example, chemical reactions involving VOC are generally accelerated in warmer temperatures, and for this reason studies show that SOA typically comprises a higher percentage of $PM_{2.5}$ in the summer than in the winter.[30]

Anthropogenic sources of VOC include mobile sources, petrochemical manufacturing, oil and gas emissions, fire emissions, and solvents.[31] In addition, some biogenic VOC, emitted by vegetation such as trees, can also contribute significantly to SOA formation, especially in heavily forested areas, such as the southeastern U.S. It should be noted, however, that anthropogenic contributions to SOA are likely highest in the wintertime when biogenic SOA levels are lower; conversely, in the summertime, biogenic contributions to SOA are likely higher. Despite significant progress that has been made in understanding the origins and properties of SOA, it remains the least understood component of $PM_{2.5}$ and continues to be a significant topic of research and investigation.

e. Role of Ammonia in Sulfate, Nitrate and SOA Formation. Ammonia is a gaseous pollutant emitted by natural and anthropogenic sources. The EPA's 2011 NEI shows that the two main sources of ammonia emissions are fertilizer application (27 percent) and livestock raising (54 percent). It should be noted that the 2011 NEI indicates that mobile sources in the aggregate contribute about 3 percent of nationwide ammonia emissions. Catalytic converters installed on

[30] Pandis S.N., Harley R.A., Cass G.R., and Seinfeld J.H., 1992. Secondary Organic Aerosol Formation and Transport, Atmospheric Environment, 26, 2266-82.
[31] Carlton, A.G., Bhave, P.B., Napelenok, S.L., Edney, E.O., Sarwar, G., Pinder, R.W., Pouliout, G.A., and Houyoux, M. (2010), Model Representation of Secondary Organic Aerosol in CMAQ4.7, Environmental Science and Technology 44(22), 8553–60.

light-duty gasoline vehicles are designed to convert NO_x to nitrogen (N_2); however, some ammonia is formed as a secondary product and emitted during this process.

As indicated earlier, ammonia plays an important role in neutralizing acids, such as sulfuric acid and nitric acid, in clouds, precipitation and particles. On the other hand, deposited ammonia can contribute to problems of eutrophication in water bodies due to its nutritive properties.[32] Ammonia would not exist in particles if not for the presence of acidic species with which it can combine to form a particle. In the eastern U.S., sulfate, nitrate and the ammonium associated with them can together account for between roughly 30 percent and 75 percent of the total $PM_{2.5}$ mass in a given area. The ammonium portion by itself roughly accounts for between 5 percent and 20 percent of the total $PM_{2.5}$ mass in the East.[33]

f. Role of NO_x in Nitrate and SOA Formation. In addition to the contribution of NO_x emissions to secondary particulate nitrate formation, NO_x also reacts with anthropogenic and biogenic VOC to enhance the secondary formation of organic compounds that make up SOA. NO_x is thus involved in all secondary PM chemistry, not just in particulate nitrate formation.[34]

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[32] Seinfeld, J.H. and Pandis, S.N. (1998), *Atmospheric Chemistry and Physics: From Air Pollution to Climate Change*, 1st edition, J. Wiley, New York.
[33] NARSTO, 2003. Particulate Matter Science for Policy Makers. A NARSTO Assessment. Parts 1 and 2. NARSTO. Management Office (Envair), Pasco, Washington. Available at: *http://narsto.org/pm_science_assessment*.
[34] Carlton, A.G., Pinder, R.W., Bhave, P.B., and Pouliout, G.A., 2010. To what extent can Biogenic SOA be Controlled, Environmental Science and Technology 44(9), 3376-3380.

4. Fine Particulate Composition by Location.

Table 2 shows regional 3-year mean concentrations (2009-2011) of $PM_{2.5}$ and its main components at sites in the Chemical Speciation Network (CSN).[35] In addition to the mean values for all sites in each region, the table includes the minimum and maximum observed $PM_{2.5}$ and species concentrations for sites within each region. These data illustrate broad observed spatial patterns across the U.S. in $PM_{2.5}$ concentrations and its composition. For example, $PM_{2.5}$ concentrations are highest on average in the Central and West regions. Sulfate mass comprises a larger fraction of $PM_{2.5}$ than nitrate mass in the northeastern U.S., whereas nitrate has a greater contribution than sulfate in the West. OM is the dominant component in all regions, with the highest concentrations of OM on average found in the West, Northwest and Southeast. On a percentage basis, the concentrations of EC and crustal material are relatively low throughout all regions of the U.S. compared to the other major $PM_{2.5}$ components.

The composition of $PM_{2.5}$ also varies between urban and rural areas. This is reflective of the distribution of urban and regional emission sources, atmospheric reactions and transport of fine particles. More details about the spatial distribution and origins of $PM_{2.5}$ components can be found in the docket for this action.[36]

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[35] The organic matter (OM) values in Table 2 were calculated by multiplying the measured organic carbon (OC) concentrations by 1.6 (Turpin and Lim (2001), Aerosol Science and Technology, 35, 602-610). $PM_{2.5}$ concentrations come from measurements of the Federal Reference/Equivalance Methods (FRM/FEM) rather than from the CSN $PM_{2.5}$ measurement.
[36] Reff and Rao, Memo to the docket, 2013.

Table 2. $PM_{2.5}$ Chemical Composition Data at 2009-2011 Nonattainment Sites

Region	Statistic	Concentration (µg/m^3)					
		Sulfate	**Nitrate**	**OM**	**EC**	**Crustal**	**$PM_{2.5}$**
Central	Min (µg/m^3)	1.46	0.3	2.73	0.31	0.01	8.92
	Mean (µg/m^3)	2.69	1.49	3.57	0.68	0.26	11.63
	Max (µg/m^3)	4.19	3.34	4.81	1.1	1.0	13.51
	N	61	61	50	50	61	42
East North Central	Min (µg/m^3)	0.83	0.38	1.97	0.19	0.01	6.03
	Mean (µg/m^3)	1.68	1.8	2.84	0.48	0.19	9.86
	Max (µg/m^3)	2.51	3.57	3.69	0.79	0.61	11.87
	N	29	28	20	20	28	23
North East	Min (µg/m^3)	0.58	0.12	1.74	0.14	0	4.42
	Mean (µg/m^3)	2.06	0.97	3.14	0.69	0.17	9.33
	Max (µg/m^3)	5.12	2.26	5.05	1.69	0.52	15.05
	N	59	59	39	39	59	46
North West	Min (µg/m^3)	0.24	0.05	2.91	0.42	0.01	6.06
	Mean (µg/m^3)	0.54	0.4	5.02	0.81	0.15	8.33
	Max (µg/m^3)	1.09	1.79	8.44	1.25	0.53	10.96
	N	33	33	13	13	33	14
South	Min (µg/m^3)	0.88	0.18	1.36	0.12	0.02	5.22
	Mean (µg/m^3)	2.06	0.8	3.32	0.57	0.5	10.05
	Max (µg/m^3)	3.08	1.67	5.1	1.48	2.38	14.27
	N	36	27	23	23	36	23
South East	Min (µg/m^3)	1.6	0.2	1.75	0.37	0.01	6.76
	Mean (µg/m^3)	2.39	0.53	4.12	0.63	0.26	10.77
	Max (µg/m^3)	4.33	1.51	5.71	1.2	0.85	13.38
	N	44	43	30	30	43	29
South West	Min (µg/m^3)	0.34	0.07	2.34	0.46	0.02	5.3
	Mean (µg/m^3)	0.63	0.49	3.01	0.7	0.5	7.93
	Max (µg/m^3)	1.13	2.65	4.39	1.04	1.96	9.73
	N	46	46	11	11	46	12
West	Min (µg/m^3)	0.33	0.08	1.79	0.52	0.01	6.84
	Mean (µg/m^3)	0.9	1.4	5.22	0.85	0.32	11.49
	Max (µg/m^3)	2.08	5.14	10.27	1.56	1.05	16.57
	N	44	44	20	20	44	21
West North Central	Min (µg/m^3)	0.29	0.06	1.22	0.09	0	3.23
	Mean (µg/m^3)	0.67	0.48	3.16	0.44	0.22	7.25
	Max (µg/m^3)	1.79	2.02	8.28	1.21	0.53	13.72
	N	30	30	7	7	30	10

Source: EPA Speciation Trends Network

III. Requirements with Respect to the Treatment of $PM_{2.5}$ Precursors in Attainment Plans and the NNSR Program

A. Background

The EPA recognizes that the treatment of $PM_{2.5}$ precursors is an important issue in developing a $PM_{2.5}$ attainment plan[37] or implementing the NNSR program in a nonattainment area. The EPA has long recognized the scientific basis for concluding that there are multiple scientific precursors to PM_{10}[38]and $PM_{2.5}$.[39] Appropriate control of precursors is especially important for attaining the $PM_{2.5}$ NAAQS because secondarily formed particles (such as ammonium nitrate, ammonium sulfate, and some portion of organic carbon) comprise a large fraction of ambient $PM_{2.5}$ concentrations in many nonattainment areas. However, in some $PM_{2.5}$ nonattainment areas, a particular precursor or precursors may not contribute significantly to $PM_{2.5}$ levels that exceed the relevant NAAQS. This section of the preamble describes optional precursor demonstrations that a state may choose to submit to the EPA in order to establish that sources of particular precursors need not be regulated for purposes of attainment planning or in the NNSR permitting program for a specific nonattainment area.

Section III.A of this preamble provides background on the January 2013 *NRDC v. EPA* court decision, in which the court found that subpart 4 of part D of the CAA presumptively requires regulation of all $PM_{2.5}$ precursors, except under certain circumstances. Section III.A of this preamble also provides information on the requirements of the subpart 4 provisions

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[37] Note that in this document the term "attainment plan" refers to a state's required SIP submittal elements other than those elements related to the NNSR program.
[38] *See* the General Preamble, 57 FR 13498, (April 16, 1992).
[39] *See* 2007 $PM_{2.5}$ Implementation Rule, 72 FR 20586 (April 25, 2007). The rule discussed the fact that emissions of SO_2, NO_x, VOC and ammonia are factual and scientific precursors to $PM_{2.5}$.

applicable to attainment plans for PM NAAQS. Section III.B of this preamble provides a summary of the precursor demonstration options in the proposed rule and comments received. Section III.C of this preamble provides a discussion of the optional precursor demonstrations provided in the final rule.

The final rule describes how in some cases a state may demonstrate that the adoption of additional emission reduction measures for a particular precursor is not needed for purposes of achieving expeditious attainment nor for advancing the attainment date by at least a year in a nonattainment area. (This is referred in the preamble as an "expeditious attainment demonstration.") The rule also describes three optional approaches for demonstrating that a particular precursor is not a significant contributor to ambient $PM_{2.5}$ levels that exceed the standard in a particular nonattainment area. These three precursor demonstrations are: a) comprehensive precursor demonstration; b) major stationary source precursor demonstration; and c) NNSR precursor demonstration. If a state chooses to submit a precursor demonstration, it must do so in accordance with provisions in the final rule. A state may use this type of demonstration to justify that sources of the given precursor may be excluded from certain $PM_{2.5}$ attainment plan requirements and/or NNSR requirements, although the particular sources and requirements eligible for exclusion will depend on the type of demonstration submitted.

Section III.C of this preamble also outlines certain technical issues, such as the appropriate geographic scope of a precursor demonstration, recommended significance thresholds, and recommended analytical approaches for evaluating precursor contributions to ambient $PM_{2.5}$ levels and the sensitivity of $PM_{2.5}$ levels in an area to decreases or increases of emissions.

January 2013 court decision in NRDC v. EPA. As explained in the proposed rule, the EPA's approach to the evaluation and regulation of $PM_{2.5}$ precursors pursuant to subpart 1 in both the 2007 $PM_{2.5}$ Implementation Rule and the 2008 $PM_{2.5}$ NSR Rule was invalidated in the court's 2013 decision in *NRDC v. EPA*. As an example of the distinction between the divergent substantive requirements of subpart 1 and subpart 4 of part D of the CAA, the court noted that subpart 4 has specific provisions related to regulation of precursors not present in subpart 1. Although the court stated that it was not reaching a decision on the issue of regulation of precursors, the court's opinion specifically discussed the approach to precursors in both the 2007 $PM_{2.5}$ Implementation Rule and the 2008 $PM_{2.5}$ NSR Rule and compared that approach to section 189(e) of the CAA, which contains the sole explicit reference to the regulation of precursors in subpart 4. The court decision included the following statements with regard to precursors:

> Ammonia is a precursor to fine particulate matter, making it a precursor to both $PM_{2.5}$ and PM_{10}. For a PM_{10} nonattainment area governed by subpart 4, a precursor is presumptively regulated. *See* 42 U.S.C. 7513a(e) [CAA section 189(e)]. Under the PM rules challenged here, the EPA established a rebuttable presumption against regulating ammonia unless a state or the EPA "provides an appropriate technical demonstration" that shows emissions from ammonia "significantly contribute to PM concentration in the nonattainment area." 40 CFR 51.1002(c)(4)(i). When Congress enacted subpart 4, it sought to end this administrative gamesmanship.[40]

The court continued to hold that "[i]n light of our disposition, we need not address the petitioners' challenge to the presumptions in 40 CFR 51.1002(c)(3)-(4) that volatile organic compounds and ammonia are not $PM_{2.5}$ precursors, as subpart 4 expressly governs precursor presumptions."[41]

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[40] *NRDC v. EPA*, 706 F.3d 428, 437, n.7 (D.C. Cir. 2013).
[41] *NRDC v. EPA*, 706 F.3d 428, 437, n.10 (D.C. Cir. 2013).

Section 189(e) of the CAA establishes requirements for precursors to PM_{10} (which the court concluded expressly includes $PM_{2.5}$) and provides that: "The control requirements applicable under plans in effect under this part for major stationary sources of PM_{10} shall also apply to major stationary sources of PM_{10} precursors, except where the Administrator determines that such sources do not contribute significantly to PM_{10} levels which exceed the standard in the area." The court reasoned that the EPA's approach to precursors in the 2007 $PM_{2.5}$ Implementation Rule and 2008 $PM_{2.5}$ NSR Rule had the effect of reversing the presumption embodied within subpart 4 that a state should address all PM_{10} precursors unless the state has made a specific showing why regulation of a particular precursor is not necessary.

Subpart 4 of part D of the CAA. The provisions of subpart 4 (CAA sections 188-190) do not define the term "precursor" for purposes of PM_{10}, nor do they explicitly require the control of any specifically identified PM precursor. However, the statutory definition of "air pollutant" provides that the term "includes 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." *See* CAA section 302(g). The EPA has determined that SO_2, NO_x, VOC and ammonia are factual and scientific precursors to PM and, thus, the attainment plan requirements of subpart 4 apply equally to emissions of direct $PM_{2.5}$ and these precursors in $PM_{2.5}$ nonattainment areas, except as otherwise provided in the statute. Section 189(e) of the CAA explicitly requires the control of precursors from all major stationary sources in $PM_{2.5}$ nonattainment areas unless there is a demonstration to the satisfaction of the Administrator that such major stationary sources do not contribute significantly to PM levels that exceed the

standards in the nonattainment area.[42] Section 189(e) of the CAA contains the only express exception to control requirements for PM precursors under subpart 4.

When Congress adopted the 1990 CAA Amendments, the NAAQS for PM_{10} was in effect, but no standard for $PM_{2.5}$ had yet been established. At that time, it was understood that the interaction of PM_{10} precursors in the atmosphere led to the formation of PM_{10} in many areas. However, in some of the PM_{10} nonattainment areas, air quality problems were caused primarily by area sources emitting direct PM emissions (*e.g.*, a nonattainment area with numerous wood burning devices, or with substantial sources of windblown coarse particles from construction sites), and precursor emissions from major stationary sources were not considered to make a significant contribution to the local nonattainment problem. For cases such as these, CAA section 189(e) provided a possible exception to the requirement to control all PM_{10} precursors from major sources in a particular nonattainment area.

Consistent with past practice for implementation of the PM_{10} NAAQS, the EPA proposed to interpret the control requirements addressed by CAA section 189(e) to include RACM/RACT (and additional reasonable measures) for Moderate nonattainment areas, BACM/BACT (and additional feasible measures) for Serious nonattainment areas, most stringent measures (MSM) (for Serious areas as applicable) and NNSR on all major sources of precursors in the nonattainment areas. The General Preamble indicates that consideration of precursors is necessary for attainment plans, and it recognizes the specific applicability of CAA section 189(e) to both existing and new major stationary sources, including new and modified sources subject to

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[42] The EPA notes that it previously had addressed the requirements of subpart 4 for precursors, specifically within the context of the requirements of CAA section 189(e), in the General Preamble. *See* the *Federal Register* published on April 16, 1992 (57 FR 13498, 13539, 13541 and 13542).

NNSR permitting requirements. Even though CAA section 189(e) only explicitly contemplates exceptions to control requirements for $PM_{2.5}$ precursors from major stationary sources in nonattainment areas, the EPA believes that by analogy it has authority to promulgate regulations that allow states to determine that it is not necessary to regulate $PM_{2.5}$ precursors from other sources in nonattainment areas as well, under appropriate circumstances.

While CAA section 189(e) expressly requires control of precursors from major stationary sources, it is clear that subpart 4 and other CAA provisions collectively require the control of direct $PM_{2.5}$ and all $PM_{2.5}$ precursors from all types of sources (*i.e.*, stationary sources, area sources, and mobile sources) as may be needed for the purposes of demonstrating attainment as expeditiously as practicable in a given nonattainment area.[43] Longstanding EPA guidance for RACM has indicated that the state should inventory all emissions of the relevant pollutants and precursors in the nonattainment area, evaluate the available control measures for the relevant pollutant and precursors to determine if such controls are economically and technologically feasible, and then adopt those measures that are deemed reasonably available and necessary in order to attain the NAAQS as expeditiously as practicable.[44] The EPA guidance has also long indicated that the state must ensure that there is no other collection of available control measures that if adopted would advance the attainment date by at least 1 year.[45] Section IV.D of this preamble provides additional discussion on the development of emissions inventories and the

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[43] *See* CAA requirements for states to demonstrate attainment "as expeditiously as practicable" (CAA section 188(c)(1); CAA section 172(a)(2)).
[44] 57 FR 13498 (April 16, 1992).
[45] In the context of the PM_{10} NAAQS, the EPA has concluded that "advancement of the attainment date" should mean an advancement of at least 1 calendar year. *See* State Implementation Plans; General Preamble for the Implementation of Title I of the CAA Amendments of 1990, 57 FR 13498 (April 16, 1992). *See also Sierra Club v. EPA*, 294 F.3d 155 (D.C. Cir. 2002).

identification, adoption and implementation of reasonably available control measures for $PM_{2.5}$ nonattainment areas, including a discussion particular to wildfire and wildland prescribed fire found in Section IV.D.3.b.[46]

In light of the court's decision in *NRDC v. EPA*, the EPA considers it necessary to describe how states must address regulation of $PM_{2.5}$ precursors in attainment plans and NNSR programs for the $PM_{2.5}$ NAAQS. The court's decision made clear that appropriate regulation of all precursors in designated nonattainment areas is presumptively required under the CAA, and the regulation of precursors in general is a critical issue for attainment of the $PM_{2.5}$ NAAQS because secondarily formed particles are a substantial component of $PM_{2.5}$ concentrations in most nonattainment areas of the United States.

For the purposes of this rule, the EPA considers that for all $PM_{2.5}$ nonattainment areas, the $PM_{2.5}$ precursors for regulatory purposes are the four scientific precursors that the EPA has previously identified: SO_2, NO_x, VOC and ammonia. This rule does not include any national presumption that would allow a state to exclude, without a demonstration, sources of emissions of a particular precursor from further analysis for attainment plan or NNSR control requirements in a $PM_{2.5}$ nonattainment area. However, the EPA's interpretation of subpart 4 requirements with respect to precursors in attainment plans for PM_{10}, as set out in the General Preamble, contemplates that the state may develop an attainment plan that regulates only those precursors

[46] *See* Section IV of this preamble for a thorough discussion of past policy and guidance on reasonably available control measures (RACM) and reasonably available control technology (RACT). Section IV of this preamble discusses the EPA's final policy that under subpart 4, for Moderate areas that demonstrate that attainment by the statutory attainment date is impracticable, RACM and RACT would constitute all those technologically and economically feasible measures available for sources in the area that can be implemented within 4 years of designation, but they would not constitute the complete set of measures required to demonstrate attainment as expeditiously as practicable.

that are necessary to control for purposes of timely attainment in the nonattainment area, *i.e.*, states may determine that only certain precursors need to be regulated in a particular $PM_{2.5}$ nonattainment area for attainment purposes.[47] Courts have upheld this approach to the requirements of subpart 4 for PM_{10}.[48] The EPA believes that application of a similar approach to $PM_{2.5}$ precursors under subpart 4 is appropriate and reasonable.

The EPA interprets the CAA to require states to inventory emissions and adopt control measures as appropriate for direct $PM_{2.5}$ and all $PM_{2.5}$ precursors. This interpretation is based on CAA section 302(g), which defines an air pollutant as including precursors contributing to the formation of that pollutant; the EPA's identification of the four main scientific $PM_{2.5}$ precursors; and the CAA provisions requiring adoption of all control measures (i.e., RACM and RACT) needed in order to attain the standard as expeditiously as practicable. CAA section 189(e) explicitly requires that the control requirements applicable for major stationary sources of direct $PM_{2.5}$ emissions must also apply to major stationary sources of $PM_{2.5}$ precursors, unless the state provides a showing that emissions of a particular precursor from major stationary sources do not contribute significantly to levels that exceed the standard in the nonattainment area of concern. Thus, the statute generally requires control of all $PM_{2.5}$ precursors in a nonattainment area, but it provides an express exception applicable to major stationary sources in such areas if an appropriate demonstration is made.

The EPA also notes that CAA section 189(e) contains certain ambiguities that require interpretation. For example, CAA section 189(e) does not specify the precise method by which a state or the EPA should determine whether precursor emissions from major stationary sources do

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[47] *See* the *Federal Register* published on April 16, 1992 (57 FR 13498, 13540 and 13541).
[48] *See, e.g., Assoc. of Irritated Residents v. EPA, et al*., 423 F.3d 989 (9th Cir. 2005).

not "contribute significantly" to levels which exceed the standard in a given nonattainment area. Subpart 4 also does not explicitly address whether it would be appropriate to include a potential exemption from precursor controls for all source categories under certain circumstances, because a specific exemption from precursor controls is expressly made available in the statute only for major stationary sources. These issues are addressed in this final rule.

B. Summary of Proposal

In the proposal, the EPA sought comment on how states could focus regulatory efforts on the appropriate $PM_{2.5}$ precursors in each area. Rather than simply requiring each state to regulate direct $PM_{2.5}$ and all $PM_{2.5}$ precursors without regard to whether that would be appropriate and necessary for expeditious attainment of the NAAQS, EPA took comment on different approaches for states to focus regulatory efforts on the appropriate pollutants. Thus, in the proposal, the EPA sought comment on three options by which a state could demonstrate that emission control requirements for a particular $PM_{2.5}$ precursor or precursors would not be required for sources in a particular nonattainment area.[49] The proposed "precursor demonstration" options outlined procedures and technical analyses a state could elect to perform to demonstrate that control requirements for sources of a particular precursor are not needed for expeditious attainment, or that a particular $PM_{2.5}$ precursor does not significantly contribute to $PM_{2.5}$ concentrations in the

[49] The three proposed options were: (1) Option 1 – two independent analyses consisting of an attainment planning analysis showing that control measures for a particular precursor are not needed for expeditious attainment and an optional NNSR analysis showing that major stationary sources of a particular precursor do not contribute significantly to levels that exceed the $PM_{2.5}$ standard, (2) Option 2 – a single analysis (for purposes of attainment planning and NNSR) showing that all emissions of a particular precursor do not contribute significantly to levels that exceed the $PM_{2.5}$ standard, and (3) Option 3 – a single analysis (for purposes of attainment planning and NNSR) showing that control measures for all sources for a particular precursor are not needed for expeditious attainment.

area. The proposal indicated that if the EPA were to approve such a precursor demonstration, then it would not be necessary for the state to adopt control requirements for sources of the precursor or precursors in the $PM_{2.5}$ attainment planning process generally and/or in the NNSR permitting process for that particular area. The EPA requested comment on whether the final rule should include one or more precursor demonstration approaches, and whether it would be appropriate to combine specific elements from different options.

The EPA also described three technical issues associated with any such precursor demonstration and sought comment on the following: 1) the appropriate geographic scope of the analysis; 2) whether specific types of technical analyses (such as evaluating the contribution of the precursor to total $PM_{2.5}$ concentrations, or evaluating the sensitivity of the area to decreases or increases of the precursor) should be required for a precursor demonstration; and 3) whether the EPA should establish a bright-line ambient air quality threshold (e.g., 3 percent of the level of the relevant NAAQS in the area) to define an air quality change below which a precursor contribution should not be considered to be significant, thereby establishing that control of sources of the precursor is unnecessary in the area.

Lastly, the EPA indicated in the proposal that if a state had an approved precursor demonstration for a particular precursor in a Moderate area and the EPA later reclassifies the area to Serious, then the state would be required to develop an updated precursor demonstration if the state were again interested in having the precursor treated as insignificant for purposes of the Serious area plan. An updated precursor demonstration is necessary because many factors

(e.g., emissions, air quality and fine particle concentrations) could have changed substantially since the original demonstration for the Moderate area attainment plan.[50]

C. Final Rule

The EPA received many comments on the three proposed precursor demonstration approaches. Most commenters supported the inclusion of some kind of optional precursor demonstration in the final rule. Some commenters suggested that states should have the flexibility to develop any of the types of demonstrations that the EPA described in the three proposed options. One group of commenters opposed any option that would exempt a particular precursor from control measures even if the state could demonstrate it could expeditiously attain the standard by the attainment date without controls on sources of the precursor. Another group of commenters suggested that if only one option is finalized, it should allow a state to rely on a sensitivity analysis to show that changes in emissions of a particular precursor would not have a substantial contribution to $PM_{2.5}$ concentrations in the area.

The EPA agrees with commenters who suggested that states should have the flexibility to conduct different types of precursor demonstrations appropriate to the area in question. Regardless of the type of precursor demonstration, the state will still need to provide adequate technical support and that demonstration will be subject to EPA approval. Thus, the EPA concludes that the specific form of the demonstration is not as crucial as its content and adequacy, in light of the facts and circumstances in the area. The EPA disagrees with commenters who argued that a state should not be able to determine insignificance for a precursor based on an attainment planning analysis showing expeditious attainment in the area

[50] For more information on the proposed precursor demonstration options, *see* 80 FR 15340, at 15350-15362.

without adopting new emissions reduction measures for the precursor in question. This approach has been upheld under subpart 4 with respect to implementation of the PM_{10} NAAQS, and the EPA finds that it is reasonable to allow for a similar policy when implementing the $PM_{2.5}$ NAAQS.[51]

After consideration of the numerous comments received on this issue, the EPA has decided to adopt a final approach that allows exclusion of certain precursor sources from certain SIP requirements, provided that states make the appropriate demonstrations. However, the EPA has revised the details of the specific types of demonstrations based on further evaluation of the comments received. Section III.C.1 of this preamble describes the expeditious attainment demonstration, in which a state shows that control requirements for a particular precursor are not needed for expeditious attainment by the Moderate area attainment date. Section III.C.2 of this preamble describes the three types of optional precursor demonstrations a state may submit to the EPA to establish that emissions of a precursor do not contribute significantly to $PM_{2.5}$ levels in a particular nonattainment area: a) comprehensive precursor demonstration; b) major stationary source precursor demonstration; and c) NNSR precursor demonstration. Each option is described in detail in the following subsections.

Section III.C.3 of this preamble highlights various technical issues associated with precursor demonstrations, including the appropriate geographic scope of the analyses, thresholds for characterizing an insignificant air quality change, and different analytical methods for assessing precursor contributions. Section III.C.4 of this preamble discusses certain procedural

[51] *See, e.g., Assoc. of Irritated Residents v. EPA, et al*., 423 F.3d 989 (9th Cir. 2005).

issues associated with precursor demonstrations. Section III.C.5 of this preamble addresses other relevant comments and responses.

1. Expeditious Attainment Demonstration

As noted earlier, the EPA's interpretation of subpart 1 and 4 requirements with respect to precursors in attainment plans for PM_{10} has been that a state may develop an attainment plan that regulates only those precursors that are necessary to control for purposes of timely attainment in the area. The EPA believes that a similar policy approach for $PM_{2.5}$ precursors is also appropriate.

Under the expeditious attainment demonstration, a state may be able to determine through its identification of RACM/RACT for existing sources in an area whether expeditious attainment could be achieved without new control measures for a particular $PM_{2.5}$ precursor. It is important to note that this approach is available to a state only if the demonstration for the area 1) ensures attainment by the Moderate area attainment date (*i.e.*, the end of the sixth calendar year after designation), and 2) ensures that the area could not advance the attainment date by at least 1 year if it were to adopt reasonable control measures for the precursor in question. If the state determines that the area cannot practicably attain by the relevant Moderate area attainment date, then the state still would have the option of developing one of the precursor demonstrations described in Sections III.C.2.a-c of this preamble for showing that the precursor contribution is not significant. The expeditious attainment option is not available for Serious nonattainment areas because BACM/BACT measures for Serious areas are not solely limited to those measures needed for expeditious attainment under this final rule. (*See* further discussion of this issue in Section VI.D of this preamble, Serious Area Attainment Plan Control Strategies.)

For the expeditious attainment demonstration, the required analysis is what is already needed for a Moderate area attainment demonstration: the identification of reasonably available control measures that provide for expeditious attainment by the attainment date, and a determination that attainment cannot be advanced through the imposition of other reasonable measures (i.e. RACM/RACT and other reasonable measures that are identified for the area but not necessary for the area to attain within 6 years). *See* 40 CFR 51.1006(a). After a comprehensive emissions inventory has been developed, the state should then identify potential control measures and assess factors related to technological feasibility, economic feasibility, and time needed for implementation for all types of sources in the area (*i.e.*, stationary, area, mobile) and all precursors emitted by such sources as included in the emissions inventory.

After identifying the set of control measures that are economically and technologically feasible for all precursors, the state may be able to show (using best available information on emissions, control options, technologies, and costs, along with appropriate air quality modeling) that those measures that could be identified as RACM/RACT and additional reasonable measures would not need to include new control measures for sources of a given precursor.[52] The state could show this by demonstrating that one set of control measures to be adopted into the plan would provide for attainment by the statutory attainment date; and that an additional set of potential control measures (including measures for the precursor in question, and remaining measures for all other contributing pollutants) *collectively* would not advance the attainment date by at least 1 year (i.e., enable the area to attain 1 year earlier). Under these circumstances, the

[52] *See* Section IV.D.1 of this preamble, Background for Attainment Plan Control Strategy, for further discussion of "additional reasonable measures."

state would not need to adopt the second set of measures (including measures for the particular precursor) because they would not expedite attainment of the NAAQS in the area.

If the attainment planning demonstration shows that the area can attain the NAAQS expeditiously without new emission reduction measures for a particular precursor, the state would be required to adopt control measures for only a subset of the four $PM_{2.5}$ precursors as part of the attainment plan for the area, and existing sources in the nonattainment area would not be required to adopt new control measures for the particular precursor. Accordingly, the state would not need to address the precursor in the reasonable further progress plan, in quantitative milestones and associated reports, or be required to adopt contingency measures to reduce the precursor. *See* 40 CFR 51.1009(a)(4)(i). (Note that for purposes of meeting the contingency measure requirement, however, the state would still have the discretion to adopt control measures as contingency measures for a precursor that would otherwise not be subject to RACM/RACT requirements.)

It also should be noted that development of an approvable attainment plan that does not include new control measures for a particular precursor would not exempt the state from the requirements to address the same precursor with respect to the NNSR program, nor would it excuse the state from reconsidering the significance of the precursor to the PM nonattainment problem in any subsequent Serious area SIPs that could be required for the nonattainment area.

2. Optional Precursor Demonstrations

a. Comprehensive Precursor Demonstration. In line with the EPA's proposal for precursor insignificance demonstrations, the EPA is finalizing an option whereby a state may submit a comprehensive precursor demonstration as part of any Moderate or Serious area attainment plan. The use of the term "comprehensive" here refers to the fact that the

demonstration covers all existing stationary, area, and mobile sources, rather than major sources alone. Note, however, that the comprehensive precursor demonstration does not affect precursor requirements for future new sources. Under this comprehensive precursor demonstration, the state would need to show that emissions of a particular precursor from all existing stationary, area, and mobile sources located in the nonattainment area do not contribute significantly to $PM_{2.5}$ levels that exceed the standard in the area. The state would first need to evaluate the contribution of all existing source emissions of the particular precursor to $PM_{2.5}$ concentrations that exceed the $PM_{2.5}$ standard (described in Section III.C.2 of this preamble). If the state cannot demonstrate via the concentration-based precursor demonstration that sources of a particular precursor have an insignificant contribution to $PM_{2.5}$ levels in an area, , then the state could still demonstrate that the precursor's contribution is insignificant by conducting a sensitivity analysis to evaluate the sensitivity of ambient $PM_{2.5}$ concentrations in the nonattainment area to decreases in the precursor emissions in the area (*e.g.*, whether a given decrease is insignificant) as discussed further in Section III.C.2.c of this preamble.

If a comprehensive precursor demonstration for a precursor is approved, the state would not establish a motor vehicle emissions budget for the relevant precursor, and regional emissions analyses for the precursor would not be required to be included in transportation conformity determinations. This is consistent with the transportation conformity rule's provisions concerning $PM_{2.5}$ precursors. (*See* 40 CFR 93.102(b)(2)(iv) and (v)). Separately, states may continue to determine that on-road emissions of $PM_{2.5}$ precursors are insignificant even if emissions of a given precursor from other sources are significant. (*See* 40 CFR 93.102(b)(2)(iv) and (v) and 93.109(f)). With regard to general conformity, if a state precursor demonstration is

approved for one or more precursors, federal agencies would not be required to address the affected precursor(s) in general conformity determinations.

If a comprehensive precursor demonstration is approved by the EPA, then in developing the attainment plan for the area, the state would not be required to adopt control measures (e.g., RACM/RACT) for the precursor for any existing stationary, area, or mobile sources in the nonattainment area. The attainment plan also would not be required to address the relevant precursor in meeting the RFP or quantitative milestone requirements, or in adopting contingency measures because these requirements commonly apply to pollutants that are the subject of emission reduction measures in the attainment plan. (Note that for purposes of meeting the contingency measure requirement, however, the state would still have the discretion to adopt emission reduction requirements on the precursor in question, in conjunction with emission reduction requirements on other pollutants.) The state would still need to include the precursor in all nonattainment area emission inventory submissions.

It also should be noted that development of an approvable attainment plan that does not include new control measures for a particular precursor would not exempt the state from the requirements to address that precursor with respect to the NNSR program, nor would it excuse the state from reevaluating the significance of the precursor to the PM nonattainment problem in any subsequent Serious area SIPs that could be required for the nonattainment area.

b. Major Stationary Source Precursor Demonstration. The state has the option of submitting a major stationary source precursor demonstration as part of any Moderate or Serious area plan, consistent with CAA section 189(e). This demonstration differs from the comprehensive demonstration in that it only evaluates existing major sources, and therefore may only be used to justify the exclusion of existing major sources from the control requirements for

the applicable precursor. Although the EPA expects that most states making precursor demonstrations will opt for comprehensive demonstrations, this option is provided to offer additional flexibility. The requirements for a stationary source precursor demonstration are nearly identical to those of the comprehensive precursor demonstration, except the state would only need to show that a particular precursor from all existing *major stationary sources* located in the nonattainment area do not contribute significantly to $PM_{2.5}$ levels that exceed the standard in the area. Similar to the comprehensive demonstration, the state must first evaluate the contribution of major stationary source emissions of the particular precursor to $PM_{2.5}$ levels that exceed the $PM_{2.5}$ standard (pursuant to section III.C.3.c of this preamble). If the state cannot demonstrate via the concentration-based precursor demonstration that sources of a particular precursor have an insignificant contribution to $PM_{2.5}$ levels in an area, then the state could still try to demonstrate that the precursor is insignificant by conducting a sensitivity analysis to evaluate the sensitivity of $PM_{2.5}$ levels in the nonattainment area to a reduction in major stationary source emissions in the area (pursuant to Section III.C.3.d of this preamble).

If such a demonstration is approved by the EPA, then in developing the attainment plan for the area, the state would not be required to adopt control measures for the precursor for existing major stationary sources in the nonattainment area. The attainment plan also would not be required to address the emissions of the relevant precursor from major stationary sources in meeting the RFP or quantitative milestone requirements, or in adopting contingency measures. (Note that for purposes of meeting the contingency measure requirement, however, the state would still have the discretion to adopt emission reduction requirements on the precursor in question, in conjunction with emission reduction requirements on other pollutants.) The state

would still need to include stationary source emissions of the precursor in all nonattainment area emission inventory submissions.

Note that a state might consider developing a major stationary source demonstration to avoid the requirement to adopt nonattainment planning control measures for a particular precursor emitted from existing major stationary sources in the area if the state does not believe that it could comprehensively demonstrate that the precursor does not have a significant contribution, and if major stationary source emissions of the precursor do not make up a very large percentage of the emissions inventory in the area. For example, it might be possible that in a particular area the overwhelming amount of emissions of a certain precursor could originate from mobile or area sources, or both, but not from existing major stationary sources. If the EPA approves a major stationary source precursor demonstration, the attainment plan would still need to evaluate and potentially impose control requirements for the relevant precursor for existing non-major stationary sources, area sources and mobile sources in order to demonstrate expeditious attainment.

It also should be noted that development of an approvable attainment plan that does not include new control measures for a particular precursor would not exempt the state from the requirements to address that precursor with respect to the NNSR program, nor would it excuse the state from the requirement to evaluate and adopt control measures for the precursor in any subsequent Serious area SIPs that could be required for the nonattainment area.

c. NNSR Precursor Demonstration. The state also has the option of submitting a NNSR precursor demonstration as part of any Moderate or Serious area plan. This specific type of precursor demonstration is the only one of the three demonstrations described in this section that

if approved would exempt new and modified major stationary sources of a precursor from regulation under the NNSR permitting program.

Under the NNSR precursor demonstration, the state would need to conduct an analysis to evaluate the sensitivity of $PM_{2.5}$ levels in the nonattainment area to an increase in emissions of a particular precursor in the area, simulating the response of the atmosphere (and associated $PM_{2.5}$ concentrations) to the addition of one or more new or modified stationary sources in the nonattainment area (*see S*ection III.C.3.d of this preamble). Section III.C.3 of this preamble addresses additional issues related to technical analyses for precursor demonstrations.

The EPA believes that this approach to interpreting CAA section 189(e) of the statute as it applies to control requirements for the NNSR program is appropriate because 1) an analysis that evaluates the sensitivity of the atmosphere in an area to increases in emissions would most closely replicate the scenario of concern, where precursor emissions from new major stationary sources or major modifications are *added* to the existing inventory for the area; and 2) this approach would take into consideration the specific atmospheric chemistry and emissions profile that varies from area to area. For example, one nonattainment area may have low emissions of a particular precursor from all existing sources (and corresponding low current ambient contributions from the precursor), but the introduction of a new major stationary source of emissions of that particular precursor could in some cases significantly contribute to the ambient $PM_{2.5}$ levels in the area because other pollutants with which the precursor reacts in the atmosphere could be relatively abundant.

For purposes of the NNSR precursor demonstration, the state is not required to first evaluate the contribution of existing major sources to $PM_{2.5}$ levels that exceed the standard in the area, as would be required by the comprehensive and major stationary source demonstrations.

Since NNSR permitting requirements do not apply to existing sources (unless such sources engage in a major modification), the EPA does not believe it is necessary or reasonable to require evaluation of current emissions from existing major stationary sources as it would not inform the question of whether increases in emissions would significantly contribute to $PM_{2.5}$ levels in the area. Note, however, that the NNSR precursor demonstration is used only to justify an exclusion of sources of the precursor from the NNSR control requirements in the area. A state would need to pair the NNSR precursor demonstration with another type of precursor demonstration to address control requirements beyond NNSR, as described previously for each type of demonstration.

3. Technical Issues Associated with Precursor Demonstrations.

a. Geographic Area. The proposal indicated that the emissions inventory to be used as the starting point for the comprehensive, major stationary source, and NNSR precursor demonstrations should represent emissions from sources located in the nonattainment area, and the final rule remains unchanged. The EPA believes that limiting the emissions inventory for these analyses to sources in the nonattainment area is appropriate based on the statutory construction of CAA section 189(e), in which the relevant test is whether "such sources contribute significantly to [$PM_{2.5}$] levels which exceed the standard in the area." The EPA believes that a reasonable interpretation is that this provision applies to sources in the nonattainment area.

b. Significance Threshold. The proposal described the concept of including a bright-line threshold of 3 percent of the relevant NAAQS in the rule for precursor demonstrations other than the expeditious attainment approach, such that if an air quality contribution was found not to exceed the threshold amount, then it would not be considered significant. The proposal also

included an option for no bright-line threshold in the final rule, based on the recognition that all nonattainment area situations are different.

Some commenters supported the bright-line threshold concept, but they suggested thresholds across a broad range, from less than 1 percent of the relevant NAAQS, to up to 5 percent. Some commenters stated that inclusion of a bright-line threshold of 3 percent of the relevant NAAQS was preferred because without such a threshold, states would be unsure about whether their proposed precursor assessment would be acceptable. Other commenters supported having no bright line threshold because the circumstances of each area are unique, and for that reason each area should be considered on a case-by-case basis.

The EPA found merit in comments supporting both proposed options. The EPA agrees that an insignificance threshold can help avoid situations where lack of clarity may lead to delays in the EPA assessment of precursor demonstrations. At the same time, the EPA understands that $PM_{2.5}$ nonattainment problems are complex and vary greatly based on the facts and circumstances of each area.

After considering the range of comments on this issue and the complexity of the types of analyses that may be conducted for precursor demonstrations, the EPA has decided that the best approach is for the final rule to codify the availability and basic requirements for precursor demonstrations, but to provide technical details (such as a recommended approach for assessing whether a particular air quality concentration threshold can be considered to be insignificant in a given area) in guidance supporting this final rule.

c. Concentration-based Contribution Analysis. The first type of analysis required for the comprehensive precursor demonstration (or, less commonly, the major stationary source precursor demonstration) is an existing source contribution analysis that would demonstrate

whether emissions of a particular precursor from all existing sources (or, for a major source precursor demonstration, emissions from existing major sources) in the nonattainment area do not significantly contribute to $PM_{2.5}$ concentrations that exceed the standard in the area. The state should use technically credible approaches for estimating the ambient contribution of emissions of a particular precursor to total $PM_{2.5}$ concentration in the nonattainment area. The EPA anticipates that the forthcoming technical guidance will discuss the possible use of advanced air quality modeling tools to estimate precursor contributions to total $PM_{2.5}$ concentrations in an area. For example, several photochemical air quality models (*e.g.*, Community Multi-Scale Air Quality Model (CMAQ) and the Comprehensive Air Quality Model with Extensions (CAMx)) can be used to quantify the contributions of precursor emissions to $PM_{2.5}$ concentrations in the area.[53]

Other techniques such as the analysis of chemical speciation data and emissions inventories also may be appropriate for determining the contribution of a particular precursor to $PM_{2.5}$ concentrations. For example, SO_2 emissions and measured sulfate concentrations (in the form of ammonium sulfate or other forms) may be small in a particular nonattainment area. A simple analysis of measured species concentrations (attributable to a particular precursor) combined with nonattainment area emissions and other relevant data analyses may be sufficient to show that a precursor does not contribute significantly to $PM_{2.5}$ concentrations in the area.

d. Sensitivity-based Contribution Analysis. A second type of analysis may also be used in developing comprehensive precursor demonstrations (or, less commonly, major source precursor

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[53] For more information on CMAQ, *see http://www.epa.gov/air-research/community-multi-scale-air-quality-cmaq-modeling-system-air-quality-management*. For more information on CAMx, *see http://www.camx.com/*.

demonstrations). This type of analysis is a sensitivity-based contribution analysis that would demonstrate the degree to which concentrations in the nonattainment area are sensitive to decreases of a precursor. Changes in $PM_{2.5}$ concentrations at a particular location often will not be linear with respect to changes in $PM_{2.5}$ precursor emissions; therefore, sensitivity analyses are useful for better understanding the complexity and variability of the atmospheric chemistry affecting $PM_{2.5}$ concentrations in different areas across the country. A sensitivity-based contribution analysis evaluating the effect of precursor emissions reductions could be used in the event the state cannot demonstrate via the concentration-based analysis that sources of a particular precursor have an insignificant contribution to $PM_{2.5}$ levels in an area.

The EPA also requires a sensitivity-based analysis as the means for conducting the NNSR precursor demonstration. In this case, in contrast to the assessment of decreases described for the comprehensive (or major source) precursor demonstration for existing sources, the appropriate sensitivity analysis is one that evaluates the impact of precursor emissions *increases* – without the need for a separate evaluation of existing source contribution to $PM_{2.5}$ concentrations. This analysis is clearly most appropriate for NNSR, which is a program that governs emissions increases. Thus, the final rule requires that such an analysis must be used if a state chooses to submit a NNSR precursor demonstration.

The EPA states in the final rule that a sensitivity-based analysis is an appropriate approach for understanding whether emissions of a precursor make an insignificant contribution to $PM_{2.5}$ levels in an area. Several main components of $PM_{2.5}$ are secondarily formed in the atmosphere and are the result of chemical reactions between various $PM_{2.5}$ precursors. In some areas, one precursor may be abundant while a second precursor, with which it primarily reacts, may be less abundant. In such cases, a sensitivity analysis may find that reducing emissions of

the second, less abundant precursor (the "limiting" precursor) may be generally more effective for reducing $PM_{2.5}$ concentrations. It may also find that increasing emissions of the less abundant precursor may be more effective at increasing $PM_{2.5}$ concentrations than a comparable tonnage increase of a more abundant precursor.

In another type of area, the $PM_{2.5}$ concentrations that exceed the standard may be commonly dominated by primary $PM_{2.5}$ emissions rather than by secondarily formed $PM_{2.5}$. In such an area, a sensitivity analysis may be able to demonstrate that sources of a particular precursor in the nonattainment area do not contribute significantly to $PM_{2.5}$ levels that exceed the standard, and that the potential air quality improvement from reducing emissions of the precursor in the area may be limited.

Thus, the most effective precursor strategies for reducing $PM_{2.5}$ concentrations as part of attainment planning will vary from area to area, depending upon which specific precursors play a role in forming or limiting $PM_{2.5}$ formation in the particular area. The EPA therefore believes that it is a reasonable interpretation of the statute to allow a precursor to be excluded from control requirements if the $PM_{2.5}$ concentration in the area is insensitive to decreases of that precursor.

For states that choose to develop an optional precursor demonstration, the final rule provides that in addition to the basic requirement to do a concentration-based contribution analysis, the state may choose to develop a sensitivity-based contribution analysis evaluating potential emissions reductions for either a comprehensive precursor demonstration or a major stationary source demonstration intended to show that emissions reductions of the particular precursor are not effective in reducing $PM_{2.5}$ levels that exceed the standard in the area. As noted previously, the EPA expects to recommend approaches for assessing whether a particular air

quality concentration threshold can be considered to be insignificant in a given area. If a concentration-based contribution analysis conducted for either a comprehensive precursor demonstration or a major stationary source precursor demonstration shows that the contribution from a precursor is less than a particular threshold which may be considered insignificant at each $PM_{2.5}$ monitor in the area, then the EPA could approve the concentration-based contribution analysis. However, if a concentration-based contribution analysis cannot be approved (e.g., shows that the contribution of a precursor to $PM_{2.5}$ levels in the area is not less than such a threshold at one or more monitors), then the overall precursor demonstration still could be approved, but only if the state also provides an appropriate sensitivity-based contribution analysis. If the sensitivity-based contribution analysis shows that the reduction in $PM_{2.5}$ concentration at each $PM_{2.5}$ monitor resulting from an emission reduction level that would not exceed such a threshold, then the EPA could approve the overall precursor demonstration, and the state would not be required to adopt control requirements for the precursor or address the precursor for attainment planning purposes.

In evaluating whether it would be appropriate to exclude sources of any precursors from NNSR regulation in a nonattainment area, it is important to understand the sensitivity of the atmosphere to potential increases in precursor emissions that could result from major source growth (from both new sources and major modifications at existing major sources) in the nonattainment area. For example, in some circumstances, adding a few hundred tons of a "less abundant" precursor to an area could result in a significant increase in $PM_{2.5}$ concentrations even if there are currently very few existing major sources of the precursor in the area. In contrast to the emissions reduction analyses described for attainment planning purposes, sensitivity analyses that consider the effect of potential emissions increases of a particular precursor in the

nonattainment area will help the state and the EPA to understand the potential response of $PM_{2.5}$ concentrations to increased emissions in the area in order to assess whether the contribution from such increases is not significant under CAA section 189(e). In assessing whether a state precursor demonstration (*i.e.,* for attainment planning or for NNSR) can be approved, the EPA will consider the air quality changes estimated in the state's technical sensitivity analyses, their relationship to thresholds developed under any EPA-recommended approaches (including any thresholds that EPA may recommend), and any other information presented by the state.

4. Procedural Considerations.

a. Consultation and Public Review. The EPA anticipates that a state's development of an approvable $PM_{2.5}$ precursor demonstration will require a substantial level of effort and consultation with the EPA. Such a demonstration by the state would likely involve technically rigorous and complex analyses, such as air quality modeling and ambient data analyses. Accordingly, the EPA strongly recommends that any state that is considering limiting the applicability and associated control strategy decisions only to specific precursors, either for the attainment plan, for the NNSR permitting program, or for both, should develop a precursor demonstration early in the attainment plan development process. The EPA is committed to consulting with states on designing technically appropriate precursor demonstrations consistent with EPA technical guidance. If a state chooses to develop a precursor demonstration, it must be submitted to the appropriate EPA regional office no later than the date of submission of the relevant attainment plan or NNSR program revision; an earlier submission is preferable. For example, if a state submits the Moderate area plan elements no later than 18 months from the date of designation (as discussed in Section IV.A of the preamble), it should submit any

precursor demonstration no later than this same date. In its review of any precursor demonstration provided by a state, the EPA will consider all relevant information.

The critical first step in any precursor analysis is the development of a comprehensive inventory of all precursor emissions in the nonattainment area. A state will not be able to reasonably determine whether reductions of a given $PM_{2.5}$ precursor are needed for expeditious attainment, or whether sources of such precursor are insignificant contributors to $PM_{2.5}$ levels above the standard in an area, unless the state has adequately accounted for all nonattainment area emissions in its emissions inventory. (*See* section IV.B of this preamble for more details on emission inventory requirements.)

In the preamble to proposed rule, we indicated that if a state developed a precursor demonstration as part of its draft attainment plan or NNSR program submission, then in accordance with the state rulemaking process, the demonstration would be subject to public review at the state level. We also stated that, as required under any rulemaking process, the state had to consider and provide a response in the rulemaking record to any information or evidence brought forward by commenters during the state's SIP planning, development and review process. By ensuring that this important issue was explicitly addressed and supported in any attainment plan or NNSR program revision submitted to the EPA, the EPA could better evaluate the precursor demonstration in accordance with its obligations under the CAA. The EPA believes these are sound procedural steps for a state rulemaking process, and the final rule includes similar language requiring public review of any proposed precursor demonstration.

If a state chooses to develop a comprehensive precursor demonstration or major stationary source precursor demonstration for a nonattainment area, it must submit a concentration-based contribution analysis and, if applicable, a sensitivity-based contribution

analysis conducted for the area. In cases where a sensitivity-based analysis was developed the concentration-based analysis must also still be submitted. Although the rule clearly provides that the precursor demonstration requirement may still be satisfied in such cases, the information in the concentration-based analysis will help inform review of the overall demonstration by the EPA. Similarly, the data from the concentration-based analysis should be available in the public record because it will help inform the review of the overall precursor demonstration by the public. *See* 40 CFR 51.1006(b).

b. Precursor Demonstration to be Reevaluated for Each New State Implementation Plan. There may be situations where the EPA approved a Moderate area plan that excluded a precursor from regulation from one or more requirements based on an approvable precursor demonstration, and then the area is reclassified as a Serious area, triggering an additional plan submission requirement. (Section V of this preamble provides additional detail on reclassification of areas from Moderate to Serious under subpart 4.) In addition, an area that had been reclassified as Serious later may be required to submit one or more additional SIPs if it obtains an extension of the Serious area attainment date, or if it fails to attain the standard by the end of the tenth year after designation. For a state seeking to continue a precursor exclusion in a subsequent attainment plan or NNSR program submission, the final rule requires the state to assess the appropriateness of continuing the exclusion by providing a new precursor demonstration updated to reflect the type of plan and the conditions in effect when the new plan is submitted.

When an area is reclassified to Serious, existing sources of all $PM_{2.5}$ precursors in the area are again presumptively subject to evaluation for BACM/BACT control measures and potential future control requirements, unless a new precursor demonstration is developed and approved as part of the Serious area plan. As noted in the discussion of the provisions for

excluding sources of precursors from certain Moderate area requirements based on an expeditious attainment demonstration, this option is not available for Serious areas. Accordingly, if the state seeks to submit an updated precursor demonstration for a Serious area, at this stage it must submit a comprehensive, major stationary source, or NNSR precursor demonstration. Regardless of the type of demonstration(s) provided in the Moderate area plan, the final rule requires that the state must submit a reevaluated and updated precursor demonstration for the Serious area plan. The reason for this is that the Serious area plan would be due several years after the submission of a state's original precursor demonstration, and over that period, substantial emissions changes could have occurred that might call into question the basis of the previous precursor demonstration. In addition, because the area failed to attain by the Moderate area attainment date, it is reasonable and appropriate to require the state to reconsider and update its prior precursor demonstration. The final rule also requires similar updates for each successive plan beyond the initial Serious area plan (such as a revised Serious area plan for an area that fails to attain by the end of the tenth calendar year after designation). The EPA recommends that in developing a revised precursor demonstration, the state should consider changes in a number of factors, including: changes in emissions inventory levels due to implementation of control programs, growth in emissions, and changes in emission estimation methodologies; recent ambient air quality concentrations; fine particle composition and the sensitivity of the atmosphere to increases and decreases of different precursors; advances in technical tools and modeling techniques to assess the effectiveness of precursor reductions; and advances in control technologies and emission reduction programs.

5. Comments and Responses.

Comment: With regard to whether the existing source contribution analysis or the sensitivity-based contribution analyses should be required if a state opts to submit a precursor demonstration, a number of commenters supported only the sensitivity analysis because they believed the analysis would help identify the control measures that are most effective at reducing $PM_{2.5}$ concentrations. Some commenters noted that conducting a "zero-out" analysis (i.e., simulating the change in atmospheric chemistry and $PM_{2.5}$ concentrations due to a hypothetical removal of 100 percent of the emissions of a precursor from the inventory) is not appropriate for a sensitivity analysis because the response of the photochemical grid model is highly non-linear under such circumstances.

Another group of commenters supported requiring only the concentration-based existing source contribution analysis because only that analysis would address the question alluded to in the statute, which is whether sources of the precursor contribute significantly to levels which exceed the standard in the area. These commenters stated that sensitivity-based analyses reflect localized conditions and do not represent a consistent effect across an air basin. The commenters suggested that sensitivity analyses might be considered to inform what pollutants are most cost-effective to control, but believed that this is dubious because the fact that certain pollutants are very abundant is likely the result of a history of under-regulation. They suggested that it actually may be cheaper to control the more abundant pollutant than the less abundant pollutant in order to achieve an equal amount of air quality improvement.

Response: The EPA agrees with commenters who suggested that the rule should closely align with the statutory language in CAA section 189(e) of subpart 4 and include provisions for evaluating the contribution of existing sources to $PM_{2.5}$ levels which exceed the standard in the

area. For this reason, the final rule states that the existing source contribution analysis should be required for any comprehensive precursor demonstration or major stationary source precursor demonstration seeking to exempt a precursor from attainment planning requirements.

The EPA also believes that a sensitivity-based contribution analysis is consistent with the language and intent of CAA section 189(e). As applied to attainment plans, CAA section 189(e) allows states to evaluate whether $PM_{2.5}$ precursors significantly contribute to levels which exceed the standard in the area. The intent of CAA section 189(e) in applying control requirements to $PM_{2.5}$ precursors is to ensure expeditious attainment of the standard. However, if conditions in a particular area are such that control of sources of one or more precursors does not reduce $PM_{2.5}$ concentrations in the area, then those controls will not help the area attain (expeditiously or otherwise). Therefore, the EPA disagrees with commenters who argue that sensitivity-based contribution analyses are not appropriate for determining if precursors do not significantly contribute to $PM_{2.5}$ levels in the area. The EPA believes that sensitivity-based contribution analyses can be useful for determining whether adoption of control requirements for sources of a particular precursor would be effective in reducing $PM_{2.5}$ concentrations, and can be useful for determining whether potential emissions increases under the NNSR program would lead to insignificant air quality changes. For this reason, the final rule allows states to conduct sensitivity-based contribution analyses for the comprehensive, major stationary source, and NNSR precursor demonstrations.

Comment: Some commenters expressed support for the precursor option from the proposal (*i.e.*, Option 3) that would have allowed for an expeditious attainment precursor demonstration to be deemed to demonstrate under CAA section 189(e) that emissions of the

precursor do not need to be addressed for all major stationary source requirements, such as the NNSR program.

Response: Upon further consideration of this potential approach, the EPA decided that it would not be appropriate to include such an approach in the final rule. The reason for this is that an expeditious attainment planning analysis on its own would determine that the area could attain the standard by the Moderate area attainment date without new control requirements for sources of a particular precursor, but it would not address the potential impact of increased emissions of the precursor in the area due to new or modified sources, as is reasonably needed under the NNSR precursor demonstration. The evaluation of controls required for expeditious attainment does not consider what happens if new sources move into an area. Thus, while a state might be able to show that controlling existing sources of a precursor does not advance attainment, the analysis would not determine whether a new major source of that precursor might have a significant contribution to air quality. The EPA believes it is important for purposes of CAA section 189(e) and our overall environmental goal under the NNSR program to evaluate emissions increases. Consequently, the EPA has revised the details of the specific types of demonstrations to include a specific stand-alone demonstration for purposes of exempting new major stationary sources and major modifications of a precursor from regulation under the NNSR permitting program.

IV. Requirements for $PM_{2.5}$ Moderate Nonattainment Area Plans

Sections 189(a), (c), and (e) of the CAA require that Moderate area attainment plans contain the following: (i) an approved permit program for construction of new and modified major stationary sources (CAA section 189(a)(1)(A)); (ii) a demonstration that the plan provides for attainment by no later than the applicable Moderate area attainment date or a demonstration

that attainment by that date is impracticable CAA (section 189(a)(1)(B)); (iii) provisions for the implementation of RACM and RACT no later than 4 years after designation (CAA section 189(a)(1)(C)); (iv) quantitative milestones that will be used to evaluate compliance with the requirement to demonstrate reasonable further progress (RFP) (CAA section 189(c)); and, (v) evaluation and regulation of $PM_{2.5}$ precursors (in general to meet RACM and RACT and other attainment planning requirements, and as specifically provided for major stationary sources under CAA section 189(e)). In addition, subpart 1 requirements for attainment plans continue to apply to $PM_{2.5}$ nonattainment areas unless they are superseded by subpart 4 provisions and include the following: (i) a description of the expected annual incremental reductions in emissions that will demonstrate RFP (CAA section 172(c)(2)); (ii) emissions inventories, as necessary (CAA section 172(c)(3)); (iii) other control measures (besides RACM and RACT) needed for attainment (CAA section 172(c)(6)); and, (iv) contingency measures (CAA section 172(c)(9)). The EPA notes that its longstanding guidance on interpreting these statutory requirements is embodied in the General Preamble and the Addendum.[54] The preamble for the proposed rule presented several interpretations of these provisions, and further explained where its proposal varies from past EPA guidance and the reasons for the variance. The following sections of this preamble explain the EPA's final approach and, where different from the proposal, also explain EPA's reasons for finalizing an amended approach. This final rule reflects our careful consideration of the numerous thoughtful comments we received from air agencies, who are responsible under the CAA for these implementation activities, and a variety of other stakeholders.

[54] *See* 57 FR 13498, 13536, 13537, 13538, 13539, 13540, 13541, 13542, 13543, 13544 and 13545 (April 16, 1992); and 59 FR 41988 (August 16, 1994).

A. Plan Due Dates

1. Summary of Proposal

The EPA proposed to require that all Moderate area plan elements for a nonattainment area be submitted by the state no later than 18 months from the effective date of designation. The attainment plan submission would thus include all necessary plan elements required under CAA subparts 1 and 4.

2. Final Rule

The final regulations at 51.1003(a) require all Moderate nonattainment area elements to be submitted by no later than 18 months from the date of designation, as proposed. Section 189 of the CAA specifies the schedule by which states must submit attainment plans for the $PM_{2.5}$ NAAQS. Specifically, CAA section 189(a)(2)(B) requires states to submit an attainment plan that meets Moderate area attainment plan requirements no later than 18 months from the date of nonattainment designation.[55] While subpart 1 of the CAA could potentially be interpreted to authorize the EPA to provide up to 3 years after designation for states to submit certain attainment plan elements, the EPA believes that such an interpretation would be inconsistent with the specific deadlines that Congress imposed in subpart 4. The EPA concludes that all

[55] The EPA notes that Congress provided different statutory deadlines for submission of attainment plans under subpart 1 and subpart 4. Under section 172(b) of the CAA, the EPA is directed to establish the date for the attainment plan submission, but it can extend no later than 3 years from the date of a nonattainment designation. By contrast, under CAA section 189(a)(2)(B), the statute provides that states must make the attainment plan submissions within 18 months after designation. Due to the December 2013 court decision in *NRDC v. EPA*, however, the EPA promulgated an alternative submission date of December 31, 2014, for attainment plans for the 1997 $PM_{2.5}$ and 2006 $PM_{2.5}$ NAAQS in order to provide a reasonable, prospective due date for attainment plans that must comply with subpart 4 requirements and to clarify the requirements that a state must meet prior to redesignation of a $PM_{2.5}$ nonattainment area. *See* 79 FR 31566 (June 2, 2014).

subpart 1 and subpart 4 nonattainment area requirements should be considered together in order to facilitate state development, and EPA review, of a comprehensive plan to attain the $PM_{2.5}$ NAAQS in a given nonattainment area. In fact, the EPA finds that meeting key subpart 1 requirements within the 18-month timeframe of subpart 4 is fundamentally necessary for the state to develop an approvable plan. For example, the state must develop an emissions inventory (or inventories) either before or at the same time as the other attainment plan elements due under subpart 4 because the information contained in the emissions inventory is critical for development of other elements of the Moderate area attainment plan, such as its precursor analysis, analysis of RACM and RACT and additional reasonable measures, and attainment demonstration modeling. The EPA's ability to evaluate the submitted attainment plan therefore will be impaired if the state does not submit all the required plan elements at the same time.

3. Comments and Responses

Comment: Commenters suggested that the EPA should interpret the statute to allow more time for states to develop and submit contingency measures.

Response: As discussed earlier in this section, the EPA believes that it would be inconsistent with the specific deadlines that Congress imposed in subpart 4 to allow contingency measures to be submitted later than the other elements of the attainment plan. Contingency measures need to be adopted and ready for rapid and timely implementation in the event a nonattainment area fails to meet RFP requirements or fails to attain the $PM_{2.5}$ NAAQS by the applicable attainment date. The state's evaluation of what emissions controls are appropriate to meet the contingency measure requirement is closely related to other aspects of the attainment plan, such as the pollutants and sources to be addressed in meeting the RACM/RACT requirements, and the amount of emissions reductions that the contingency measures should

achieve, based upon the facts and circumstances of the attainment plan for the area. The same types of facts and analyses that are necessary for the other elements of an attainment plan are directly relevant to the development of contingency measures.

Although nothing in the CAA prohibits states from making separate attainment plan submissions to meet the individual required elements for attainment plans in advance of the required date, the EPA presumes that development and submission of all of the attainment plan elements simultaneously will be most efficient, both for the state and for the EPA in reviewing the state's submission. A Moderate area implementation plan with a single SIP submission due date will be less administratively burdensome than a program with two SIP submission due dates. Under an approach with two submissions, the state would likely need to issue two sets of proposed regulations, hold two sets of public hearings, and respond to two sets of public comments, rather than dealing with all of these requirements in one comprehensive action. Likewise, the EPA would have two separate submissions to review and two sets of proposed and final actions to publish in the *Federal Register* for every Moderate nonattainment area. Thus, for the reasons outlined earlier, the final rule includes a single Moderate area attainment plan submission deadline of 18 months after designation. Accordingly, the areas designated as nonattainment for the 2012 $PM_{2.5}$ NAAQS (with an effective date of April 15, 2015) are required to submit Moderate area attainment plans to the EPA no later than October 15, 2016. *See* 40 CFR 51.1003(a).

B. Emissions Inventory Requirements

1. Summary of Proposal

In the proposal, the EPA proposed for both Moderate and Serious areas to require both a "base year inventory for the nonattainment area" and an "attainment projected inventory for the

nonattainment area." The proposal spelled out a list of requirements for each of these inventories. The proposal also specified, based on the timing requirements of CAA section 172(b), that the emissions inventories required for a Moderate area must be submitted within 18 months after the effective date of the designation of the nonattainment area.

The EPA proposed that the base year inventory for the nonattainment area: (a) be required to represent one of the 3 years used for designations or another technically appropriate year; (b) include actual emissions of all sources within the nonattainment area; (c) be annual total or average-season-day emissions in accordance with the NAAQS violation(s) (annual and/or 24-hour); (d) include direct $PM_{2.5}$ (filterable and condensable) as well as all scientific $PM_{2.5}$ precursors; (e) follow the Air Emissions Reporting Requirements (AERR), 40 CFR part 51, subpart A for the emissions thresholds for point sources; (f) use the level of detail as prescribed by the AERR; and (g) still meet the public review requirements even if submitted as a separate plan.

The EPA further proposed that the attainment projected inventory for the nonattainment area (a) be required to represent projected emissions in the first year for which attainment is demonstrated by the modeled attainment demonstration; (b) include projected emissions of the same sources included in the base year inventory for the nonattainment area; (c) use the same temporal period as the base year inventory (annual or average-season-day); (d) include the same pollutants as the base year inventory; (e) report as point sources the same sources treated as point sources in the base year inventory; (f) be consistent in inventory detail with the base year inventory; and (g) still meet the public review requirements even if submitted as a separate plan.

2. Final Rule

The final regulations at 51.1008 provide the inventory requirements for Moderate areas. The EPA received a number of comments on the emissions inventory requirements for Moderate areas. Commenters both supported the provisions of the proposed rule and objected to some aspects of the inventory requirements. The EPA is finalizing all of the proposed Moderate area requirements with some modifications based on comments. Specifically, the definition of what can constitute a seasonal inventory has been made more flexible to accommodate certain cases, as explained in Section IV.B.2.c of this preamble.

Pursuant to its authority under section 110 of title I of the CAA, the EPA has long required states to submit inventories of the emissions of criteria pollutants and their precursors. The EPA codified these requirements in 40 CFR part 51, subpart Q in 1979 and amended them in 1987. Additionally, the 1990 CAA Amendments revised many of the provisions of the CAA related to attainment of the NAAQS and the protection of visibility in mandatory Class I federal areas (certain national parks and wilderness areas). These revisions established new emissions inventory requirements applicable to areas that were designated nonattainment for certain pollutants. In the case of PM, Congress did not create a specific emissions inventory requirement in subpart 4 that would supersede the emissions inventory requirement under subpart 1. Thus, the CAA section 172 (c)(3) emissions inventory requirements continue to apply, and that provision explicitly requires "a comprehensive, accurate, and current inventory of actual emissions of the relevant pollutants" in the nonattainment area. In addition, the specific attainment plan requirements for the $PM_{2.5}$ NAAQS set forth in CAA section 189(a) and associated modeling requirements make an accurate and up-to-date emissions inventory a critical element of any viable attainment plan. Because of the nature of $PM_{2.5}$, the EPA concludes that the statutory

requirements for emissions inventories need further elaboration through additional regulatory requirements as described later.

Emissions inventory data serve as the foundation for various types of analyses performed by states and by the EPA. For example, these data enable states to evaluate the degree to which different emissions sources contribute to the nonattainment problem in a given nonattainment area and enable states to estimate the air quality improvement that can be achieved through different control measures. States should use the best available, current emissions inventory information for attainment plan development, because high quality emissions inventory data are essential for the development of an effective control strategy. To assist states in preparing complete, high quality inventories, the EPA provides guidance for developing emissions inventories called "Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze," which is available from *https://www.epa.gov/air-emissions-inventories/emissions-inventory-guidance-documents*. This guidance is commonly called the "SIP Emissions Inventory Guidance." The EPA recommends that states consult this guidance while developing the emissions inventories to meet statutory and regulatory requirements.

a. Inventory Requirements. As explained in the proposed rule, CAA section 172(c)(3) requires states to submit an emissions inventory and periodic revisions thereof with an attainment plan. 80 FR at 15363. In addition, pursuant to CAA section 301, the EPA has authority to promulgate regulations as necessary for the implementation of the $PM_{2.5}$ NAAQS, including requirements pertaining to emissions inventories. In this final action, the EPA is establishing several different inventory requirements that the agency has determined are necessary for the proper implementation of the $PM_{2.5}$ NAAQS in attainment plans.

There are three key facets of the emissions inventory requirements, as described later: (i) the type of inventories required; (ii) the timing of submission of these inventories; and (iii) the content of these inventories. These content requirements are described in this section; however, the EPA's rationale for these content requirements is in some cases further described in subsequent sections of this document.

First, states must submit at least two separate and distinct nonattainment area emissions inventories as elements of an attainment plan. The first emissions inventory is relevant for assessing the current or base year emissions from sources located in the nonattainment area; the second emissions inventory is a projected inventory relevant for assessing emissions in the target attainment year in the nonattainment area. The first type of inventory is called the "base year inventory for the nonattainment area," and the second type of inventory is called the "attainment projected inventory for the nonattainment area." *See* 40 CFR 51.1000. The base year inventory for the nonattainment area is necessary for development and evaluation of various elements of the attainment plan, such as the determination of appropriate pollutants, sources, and emission controls addressed in other elements of the attainment plan for the nonattainment area. The attainment projected inventory is necessary to implement the attainment demonstration requirement of CAA section 189(a)(1)(B), and it also may be used as part of meeting the RFP requirement (*see* Section IV.F of this preamble). The need for the attainment projected inventory also stems from the need for both the EPA and the public to be able to compare, during their reviews of the attainment plan, the base year inventory against the attainment projected inventory for the nonattainment area. For these reasons, this rule establishes a regulatory requirement at 51.1008 that Moderate area attainment plans must include a base year inventory for the nonattainment area and an attainment projected inventory for the nonattainment area.

Second, as noted in Section IV.A of this preamble, to meet the statutory requirements for submission of certain attainment plan elements required under subpart 4, the EPA believes that states must meet the same submission schedule for emissions inventories as for the other elements of an attainment plan, *i.e.*, within 18 months after the effective date of the designation of the nonattainment area. This schedule must apply to both of these emissions inventories because they are necessary for effective evaluation of the attainment plan as a whole. Consequently, under the authority of CAA section 172(b), this rule establishes a regulatory requirement for Moderate areas that states must submit the required base and projected emissions inventories by 18 months after designation.

Third, the EPA is establishing specific requirements for both the base year inventory for the nonattainment area and for the attainment projected inventory for the nonattainment area in order to implement the $PM_{2.5}$ NAAQS most effectively. Accordingly, this final rule requires that the base year inventory for Moderate nonattainment areas must meet the following minimum criteria 1 through 7:

1) The inventory year must be one of the 3 years used for designations for the relevant $PM_{2.5}$ NAAQS or another technically appropriate inventory year. Another inventory year may be chosen under specific circumstances (*e.g.*, to account for a change in sources in the nonattainment area, changes in nonattainment area boundaries, to allow the base year to be consistent with the base year needed for the conformity rule, or significant time lag between designations and preparation of the inventory) with consultation from the appropriate EPA Regional Office. This requirement is intended to ensure that the inventory will adequately represent the emissions sources that

contributed to the nonattainment designation for the area. *See* 40 CFR 51.1008(a)(1)(i).

2) The inventory must include actual emissions of all sources within the nonattainment area. This requirement stems directly from the language in CAA section 172(c)(3). Sources outside of the nonattainment area are explicitly not included in the section 172(c)(3) requirement with the words "in such area." Furthermore, the EPA interprets the Act requirement for "actual emissions from all sources" in CAA section 172(c)(3) as intending to include all emissions that may contribute to the formation of $PM_{2.5}$ within the nonattainment area. This means that the inventory must include point sources, stationary nonpoint sources[56], mobile sources, prescribed fires and wildfires. The EPA encourages states and tribes to work together to ensure that the information used in developing the base year inventory for the nonattainment area is inclusive of all emissions from the designated nonattainment area, including emissions from sources in tribal areas located therein. *See* 40 CFR 51.1008(a)(1)(ii).

3) The emissions must be reported as annual total emissions, average-season-day emissions, or both, as appropriate for the relevant $PM_{2.5}$ NAAQS. The rationale for the type(s) of emissions provided must be included as part of the attainment plan. When seasonal emissions are included, the rationale for the seasonal period must also

[56] Point sources are the same as major stationary sources, and the term indicates sources that must be reported at an individual facility with process-level details. Nonpoint sources are all other stationary sources, and the term indicates sources that are reported as a county total. The definitions for this rule (*see* 51.1000) refer to the definitions in the AERR (40 CFR part 51, subpart A). Nonpoint sources include minor sources, synthetic minor sources, and area sources such as residential heating and other sources where it is not realistic to estimate emissions from each emissions point.

be included as part of the attainment plan. A discussion of the EPA's rationale for including the option of seasonal or annual inventories is provided in Section IV.B.2.c of this preamble. *See* 40 CFR 51.1008(a)(1)(iii).

4) As discussed earlier and consistent with past implementation rule requirements, the inventory must include emissions of direct $PM_{2.5}$ (both filterable $PM_{2.5}$ and condensable $PM_{2.5,}$ provided as separate components), as well as all scientific $PM_{2.5}$ precursors (SO_2, NO_x, VOC and ammonia). A discussion of the EPA's rationale for including this requirement is provided in Section IV.B.2.d of this preamble. *See* 40 CFR 51.1008(a)(1)(iv).

5) States must follow the Air Emissions Reporting Requirements (AERR), 40 CFR part 51, subpart A criteria for emissions thresholds for states to use to determine which emissions sources must be reported as point sources. This requirement is consistent with past implementation rules and is needed to specify whether emissions must be submitted as specific major source stationary facilities with detailed emissions processes or whether emissions can be provided as county totals (i.e., area sources, also called nonpoint sources). A discussion of the use of 40 CFR part 51, subpart A for the emissions thresholds is provided in Section IV.B.2.e of this preamble. *See* 40 CFR 51.1008(a)(1)(v).

6) The level of detail of the emissions included in the inventory must be consistent with the detail required by 40 CFR part 51, subpart A. For example, all emissions must be subdivided to individual emissions processes within a facility or county. While these details should underlie the emissions inventory, this information can be summarized for other elements of the attainment plan. This requirement is consistent with the

remanded 2007 $PM_{2.5}$ Implementation Rule and is needed to define the data reporting elements (i.e., how they are reported) as opposed to the emissions values (i.e., how much emissions derive from each source or source category) of the emissions inventories submitted to the EPA. *See* 40 CFR 51.1008(a)(1)(vi).

7) If the base year inventory for the nonattainment area is submitted to the EPA as a separate plan submission (*i.e.*, severed from the overall attainment plan and provided separately), the inventory must still meet the notice and public hearing requirements of CAA sections 110(a)(1) and 110(a)(2).

For the attainment projected inventory for Moderate nonattainment areas, this final rule also establishes specific requirements necessary to implement the $PM_{2.5}$ NAAQS effectively. Accordingly, the attainment projected inventory must meet the following minimum criteria 1 through 7:

1) The year of the projected inventory must be the most expeditious year for which projected emissions show modeled $PM_{2.5}$ concentrations below the level of the NAAQS, consistent with the requirement for expeditious attainment by no later than the applicable deadlines provided in the statute. *See* 40 CFR 51.1008(a)(2)(i).

2) The emissions must be projected emissions from the same sources included in the base year inventory for the nonattainment area and any new sources projected to locate within the boundaries of the nonattainment area. The projected emissions should be the best available representation of expected emissions, and thus should take into account emissions growth and contraction, facility closures, new facilities, new controls and other changes in emissions forecast to occur between the base year and the attainment year. In deciding what factors are relevant, states should consider

factors affecting projected emissions that could significantly alter the conclusions of the modeled attainment demonstration. *See* 40 CFR 51.1008(a)(2)(ii). For prescribed and wildfire emissions, Section IV.D.3.b of this preamble describes in more detail the appropriate way to handle these sources in the attainment projected inventory.

3) The temporal period of emissions must be the same temporal period (annual, average-season-day, or both) as the base year inventory for the nonattainment area. *See* 40 CFR 51.1008(a)(2)(iii).

4) Consistent with the base year inventory for the nonattainment area, the inventory must include all emissions of direct $PM_{2.5}$ (both filterable and condensable $PM_{2.5}$ provided as separate components), as well as all emissions of the scientific precursors (SO_2, NO_x, VOC and ammonia). *See* 40 CFR 51.1008(a)(2)(iv).

5) The same sources reported as point sources in the base year inventory for the nonattainment area must also be provided as point sources in the attainment projected inventory for the nonattainment area. Likewise, nonpoint and mobile source projected emissions must also be provided using the same delineations as the base year inventory. *See* 40 CFR 51.1008(a)(2)(v).

6) The detail of the emissions included must be consistent with the level of detail in the base year inventory (*i.e.*, as required by 40 CFR part 41, subpart A). *See* 40 CFR 51.1008(a)(2)(vi).

7) If the attainment projected inventory for the nonattainment area is submitted to the EPA as a separate plan submission (*e.g.*, severed from the overall attainment plan and provided separately), then the inventory must still meet all the notice and public hearing requirements of CAA sections 110(a)(1) and 110(a)(2).

b. Comparison to Inventory Requirements from Earlier $PM_{2.5}$ Implementation Rules. The 2007 $PM_{2.5}$ Implementation Rule required states to submit specific emissions inventories in connection with the RFP requirements of CAA section 172(c)(2) under subpart 1. In this rule, no specific RFP related inventory is required, but the attainment projected inventory for the nonattainment area also may serve a purpose for evaluation of RFP. Past EPA guidance with respect to RFP requirements under subpart 4 has not explicitly required a separate emissions inventory for this purpose for PM_{10} NAAQS. Through evaluation of the RFP requirement in connection with this rulemaking, however, EPA has determined that there may be circumstances in which such an approach may be appropriate. For this reason, the EPA describes this issue more fully in Section IV.F of this preamble.

The 2007 $PM_{2.5}$ Implementation Rule also required states to submit a statewide base year emissions inventory as part of the attainment plan. The EPA included the statewide emissions inventory requirement because it was relevant to evaluation of emissions reductions from sources outside of the designated nonattainment area for purposes of RFP. The EPA no longer interprets the CAA to allow such reductions for purposes of RFP, so this particular form of emissions inventory is not needed for attainment plan for the $PM_{2.5}$ NAAQS. Furthermore, statewide inventories are already required as part of the AERR (40 CFR part 51, subpart A) on a triennial basis. While these inventories do not receive the same level of scrutiny as inventories associated with attainment plans, the EPA believes that this existing statewide inventory requirement is sufficient for understanding the $PM_{2.5}$ nonattainment contributions from areas outside of the nonattainment area, which is a necessary component of modeled attainment demonstrations described in Section IV.E of this preamble.

c. Seasonal Inventories. The statute does not explicitly address whether the emissions inventory required under CAA section 172(c)(3) should include emissions throughout an entire calendar year or emissions during some shorter portion of the year that may be appropriate for implementation of a particular NAAQS. In the case of the $PM_{2.5}$ NAAQS, the standards currently include both annual NAAQS and 24-hour NAAQS. With respect to the annual NAAQS, the form of the NAAQS includes monitored ambient $PM_{2.5}$ values at all times throughout the course of the year, and thus an annual emissions inventory is necessarily required for development of an appropriate attainment plan for a given area. In the case of the 24-hour NAAQS, however, the form of the NAAQS is based upon monitored values on particular days with high levels of ambient $PM_{2.5}$, and in some nonattainment areas those days may occur only during a distinct and definable season of the year. The EPA considers it appropriate to interpret the emissions inventory requirements of the CAA in light of the specific inventory needs that are relevant for the NAAQS in question. For the $PM_{2.5}$ NAAQS, states can meet the inventory requirement with different combinations of temporal resolutions for the emissions. For the annual standard, annual emissions must be submitted. For the 24-hour standard, states must submit either an annual or an average-season-day inventory and optionally may submit both. For a nonattainment area for both the annual and 24-hour standard, states can meet the inventory requirement with only an annual inventory or with both an annual and average-season-day inventory.

In contrast with the annual $PM_{2.5}$ NAAQS, the 24-hour $PM_{2.5}$ NAAQS are designed to protect against peak exposures. Thus, for the 24-hour $PM_{2.5}$ NAAQS, there are circumstances in which the EPA believes that only seasonal emissions inventories may be useful for attainment planning purposes. This rule at 40 CFR 51.1008(a)(1)(iii) allows states to use seasonal inventories for attainment plan development for attaining the 24-hour $PM_{2.5}$ standard in areas

that are designated nonattainment for only the 24-hour standard. Use of a seasonal emissions inventory will also be appropriate only if the monitored violations of the 24-hour $PM_{2.5}$ NAAQS in the area occur during an identifiable season. In the event that it is appropriate to rely on a seasonal emissions inventory, the state should confer with the EPA concerning the exact length of the season and the start and stop dates of the season. The duration and start and stop dates of the season will be an important component of the attainment plan and must be approved by the EPA along with other elements of the attainment plan for a given nonattainment area. Further, this rule requires that seasonal inventories must use average-season-day emissions values for this purpose, defined by 40 CFR 51.1000. The nature of some seasonal $PM_{2.5}$ emissions sources (*e.g.*, residential wood combustion) does not allow for only weekday emissions to be included in the inventory, therefore all days must be included. The state would need to explain the rationale for the duration of the season used for the inventory as part of the attainment plan submission. To justify the use of a seasonal emissions inventory, the state must demonstrate why a seasonal emissions inventory is appropriate for the particular $PM_{2.5}$ nonattainment area in question.

Commenters recommended that the EPA should allow episode-specific inventories, in lieu of seasonal inventories. As a result, the EPA acknowledges in this final rule that, for some source categories, it may be advisable to limit the "season" considered in calculating emissions to an episodic period to reflect periods of higher emissions during periods of high ambient $PM_{2.5}$. Such an approach could help to ensure the nonattainment area inventory reflects the emissions conditions that led to an initial nonattainment area designation. For example, if nonattainment conditions are associated only with periods of peak emissions from residential wood combustion, then an episodic average for residential wood combustion may be more appropriate than a seasonal average. The resulting seasonal emissions inventory would then have a mix of the

seasonal averages as defined by 40 CFR 51.1000 for most categories, but using a shorter period for the emissions categories that can be justified and an improvement. In such cases, in addition to the requirement to justify the seasonal period, the state must additionally justify the factual basis for the period used to calculate emissions from such categories, and this would be subject to EPA approval. While the EPA encourages using the same averaging period for all sectors for purposes of simplicity, an episodic averaging period may only be needed for a select group of sources or even for a single category of sources. Those special cases must be explained in the emissions inventory part of the state implementation plan [*see* 40 CFR 51.1008(a)(1)(iii)]. For the purposes of the definitions included in this final rule, all non-annual emissions (whether seasonal or episodic) will be referred to as "seasonal" in this rule.

d. Pollutant Requirements. This rule requires that states must submit emissions inventories that include all emissions of direct $PM_{2.5}$ and all emissions of scientific $PM_{2.5}$ precursors: SO_2, NO_x, VOC and ammonia. Furthermore, the inventories must differentiate between the condensable and filterable portions of direct $PM_{2.5}$ emissions, and states must provide this information in the emissions inventories as separate components. As described in Section IV.B.3 of this preamble, commenters disagreed with the EPA's proposal to require inclusion of ammonia emissions and to require separate reporting of condensable and filterable emissions. The approach being finalized in this rule does not differ from the EPA's proposal despite these adverse comments.

Section II.B of this preamble describes the background needed to understand the importance of including these precursors in emissions inventories for attainment plan purposes for the $PM_{2.5}$ NAAQS. Emissions information about $PM_{2.5}$ and its precursors is a necessary precondition to meeting other core attainment plan requirements, such as effective evaluation of

control measures and adequate demonstration of projected future attainment of the NAAQS through modeling. The EPA notes that, with respect to requiring states to include emissions of direct $PM_{2.5}$ and $PM_{2.5}$ precursors in emissions inventories, the agency is following the requirements it established for the 2007 $PM_{2.5}$ NAAQS Implementation Rule in the past.[57] Section 172(c)(3) of the CAA explicitly requires states to submit a "comprehensive, accurate, current inventory of actual emissions of the relevant pollutants" and the EPA continues to believe that to meet these basic statutory requirements for the $PM_{2.5}$ NAAQS, states must address $PM_{2.5}$ and all $PM_{2.5}$ precursors in their emissions inventories.

The EPA requires states to use the best available methodologies for estimating emissions of $PM_{2.5}$ and its precursors.

e. The AERR Defines the Thresholds, Data Elements and Data Methods. Because the provisions of the CAA do not specify the form of the emissions information to be reported to the EPA for meeting the attainment plan inventory requirement under CAA section 172(c)(3), it is necessary for the EPA to prescribe specifically the data elements of that emissions inventory and the attainment projected inventory. The EPA uses the AERR to define basic requirements/parameters of reporting emissions for all pollutants. This approach creates consistency and eases the burden for the states, because states have one basic set of rules that apply to all emissions they have to report to the EPA.

Distinct from the emissions *values* (*i.e.*, how much emissions derive from each source or source category), the emissions *elements* (*i.e.*, how they are reported) refer to the reporting definitions, data codes and required data fields. Under this final rule, states must use the

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[57] 72 FR 20647 (April 25, 2007).

emissions elements from 40 CFR part 51, subpart A in preparing their inventories to be submitted to the EPA for implementing the $PM_{2.5}$ NAAQS. It also requires that states use point source thresholds from Appendix A of the same subpart. This is consistent with past requirements for the form of emissions inventories.

In addition to defining the point source thresholds and data elements, 40 CFR part 51, subpart A also requires states to submit emissions information to the EPA. The EPA is not referring to those emissions submission requirements here, but rather to the emissions elements – the definitions, data codes and required data fields. Later, the EPA addresses the issue of whether the emissions values submitted through the AERR are relevant to the inventory requirements of this final rule (*see* Section IV.B.2.g of this preamble).

As noted earlier, the EPA recommends that states consult the SIP Emissions Inventory Guidance in preparing the inventories required by this rule. In addition to the AERR, this guidance includes definitions for data fields that are not required by the AERR, such as seasonal emissions values and other fields that are optional in the AERR data collection system. The EPA is updating the SIP Emissions Inventory Guidance in coordination with this final rule. It provides specific guidance to states on how to develop base year inventories for the nonattainment area and attainment projected inventories for 8-hour ozone, $PM_{2.5}$, and regional haze SIPs. While the AERR sets forth requirements for data elements and definitions, the guidance complements these requirements, defines all data elements (even those that are voluntary AERR elements), and indicates how states should prepare and document the data for attainment plan submissions.

In the case of prescribed fires and wildfires, the AERR no longer requires those categories to be submitted, but rather the emissions data can be optionally provided as an "Event" source, which is a day-specific source at a point location. For this rule as described

earlier, states are required to include prescribed fires and wildfires for the base year inventory for the nonattainment area and the attainment projected inventory for the nonattainment area. For this rule, states are not expected to use the "Event" detail to meet their inventory reporting requirements. Instead, states can report these fire emissions by county as nonpoint sources are reported.

f. Emissions Inventories for Support of Modeled Attainment Demonstrations. This section clarifies the difference between the inventories required to be a part of a state's Moderate area attainment plan submission (as described earlier) and other modeling inventories that are also relevant for attainment planning. While the EPA is not establishing additional modeling inventory requirements in this rule (*i.e.,* for which a state must submit an emissions inventory to the EPA), to meet the attainment demonstration requirements of CAA sections 189(a)(1) and 189(b)(1), states are required to submit either an attainment demonstration (which includes air quality modeling) to show how the area will attain the NAAQS by the applicable attainment date or a demonstration that the area cannot attain by the attainment date. The modeled attainment demonstration requirements for Moderate areas are described fully in Section IV.E of this preamble.

As part of the modeled attainment demonstration, the EPA presumes that states will need to prepare attainment demonstration modeling inventories for both a modeled base year and projected attainment year. Respectively, these are called the "base year (baseline) inventory for modeling" and the "attainment projected inventory for modeling." These inventories contain emissions for all regions (*i.e.,* not just from sources in the nonattainment area) within the modeling domain being used for the attainment plan modeling demonstration, which typically includes counties and even states outside of the nonattainment area. They include detailed spatial

and temporal elements needed to support air quality modeling. States should follow the requirements laid out in Section IV.E of this preamble and the procedures described in the SIP Emissions Inventory Guidance and the Air Quality Modeling Guidance to meet the minimum requirements for documentation and emissions summaries supporting modeling demonstrations.

The base year inventory and projected attainment year inventory include emissions from only within the nonattainment area. The EPA expects that modeling inventories will be consistent with those nonattainment area inventories; however, some exceptions may exist. Where possible, the nonattainment area base year and projected attainment year inventories can be a sum (for annual data) or average (for $PM_{2.5}$ season-day data) of day-specific or hour-specific data used for modeling. In some cases, however, annual or season-day data may not be sufficient for modeling purposes. For example, greater spatial detail (gridded rather than county total) and temporal detail (hourly rather than annual) are needed for on-road mobile modeling inventories as compared to the base year inventory for the nonattainment area. Rather, for the nonattainment area base year inventory, one goal is to allow for the repeatability of the approach in order to create average-season-day or annual inventories to help meet other attainment plan requirements, such as RFP or motor vehicle emissions budgets established for transportation conformity purposes. That goal is not necessarily compatible with the modeling need for greater spatial and temporal detail, which requires much greater effort and expense than is practical for RFP or establishing motor vehicle emissions budgets. In cases where some differences are unavoidable, states should attempt to promote consistency where feasible.

g. Using AERR (40 CFR part 51, subpart A) Inventory Submission to Meet the Requirement for the Base Year Inventory for the Nonattainment Area. The AERR includes both triennial and annual statewide reporting requirements, with more extensive reporting

requirements for triennial inventory years. All AERR submissions are required to be made electronically. For the interim annual inventories, reporting is limited to emissions data from only the larger point sources (Type "A" sources), as defined by Appendix A of 40 CFR part 51, subpart A. For the triennial inventories, lower point source thresholds are given in Appendix A, consistent with the definition of major sources in 40 CFR part 70, and data from all other sources of emissions must be reported as from either nonpoint or mobile sources on a county basis.

In the past, some states have incorrectly asserted that their AERR submission meets the requirements for base year inventories required by other implementation rules. To avoid confusion, the EPA explains here the limited circumstances under which the AERR emissions inventories will be considered to meet the base year inventory requirement for Moderate nonattainment areas. The following conditions must be met to use AERR inventories for attainment planning:

(1) The AERR emissions inventory must have gone through the notice and public hearing requirements of CAA sections 110(a)(1) and 110(a)(2).

(2) The AERR emissions inventory includes all sources of emissions and all pollutants required for the base year inventory for the nonattainment area. This is only possible if the year for the base year inventory for the nonattainment area aligns with a triennial AERR year, because the data system implementing the AERR only accepts emissions from point sources and not other source categories in non-triennial years.

(3) The EPA's inventory data system must be accepting data for the inventory year being submitted. Inventories are allowed to be submitted to the AERR for a given year for only a limited time during the development cycle of the National Emissions Inventory.

(4) The AERR submission must include emissions from all sources required for the base year inventory for the nonattainment area consistent with 40 CFR 51.1008(a)(1), and must include mobile source emissions in nonattainment areas (instead of simply providing inputs or other data that is allowed under the AERR). In some cases, the AERR requirement can be met without actually "submitting" emissions; for example, states may elect to accept the EPA estimates for some nonpoint emissions sectors. Accepting EPA emissions does not meet the requirements of CAA section 172(c)(3) or this rule. In addition, the AERR revision finalized in February 2015 (80 FR 8787) replaces the prior requirement of reporting onroad mobile and nonroad mobile source emissions with a requirement for reporting the input parameters that can be used to run the EPA models to generate the emissions. If choosing to use an AERR submission to meet the base year inventory for the nonattainment area requirement, the state should submit the nonattainment area emissions, irrespective of the options provided to meet the AERR requirements. Because the "statewide" emissions are actually provided for individual point sources and counties, the EPA believes that the AERR submission can be sufficient for most $PM_{2.5}$ nonattainment areas.

h. Mobile Source Emissions Models. A key part of emissions inventory development includes estimating mobile source emissions. For all of the mobile source inventories used for $PM_{2.5}$ NAAQS implementation, states should use the latest emissions models available at the time that the attainment plan inventory is developed.[58] In general, for states other than California

[58] Section 172(c)(3) of the CAA requires that emission inventories be based on the most comprehensive, accurate and current information available. To do so, air agencies should use the most up to date method for estimating emissions.

that choose to fulfill various modeling requirements by using the latest EPA emissions model, the latest approved version of the MOVES model should be used to estimate emissions from onroad transportation sources. States should use the latest available planning emission inputs including, but not limited to, vehicle miles traveled (VMT), speeds, fleet mix, SIP control measures and fuels. The current version of MOVES is available at *http://www.epa.gov/otaq/models/moves/index.htm*. The appropriate EPA-approved model(s) should similarly be used for California onroad source emissions.[59]

When using MOVES, states should follow the most current version of the MOVES Technical Guidance, available at *http://www.epa.gov/otaq/models/moves/index.htm.* MOVES includes multiple options for estimating and processing emissions that could result in different emissions inventories. The EPA recommends that states use the same approach in any analysis that compares two or more emissions cases (*e.g.*, different control scenarios, different years). If different approaches are taken for inventories that serve different purposes (for example, between inventories developed for air quality modeling, which may require greater temporal and spatial detail, and inventories used as the motor vehicle emissions budget), states should seek to understand and minimize any differences in results. For example, an approach may be used for the modeled attainment demonstration that uses gridded temperatures and other meteorological data, but this approach could be too burdensome for use in the base year inventory for the nonattainment area. If a state chooses to use MOVES to create emissions inventories for purposes of RFP and establishing motor vehicle emissions budgets for transportation conformity purposes, it must use the same MOVES approach in the base year inventory for the

[59] At this time, the California onroad mobile model is called EMFAC2014.

nonattainment area, and using a straightforward MOVES approach without gridded meteorology is more reasonable for that purpose.

Likewise, if states choose to fulfill various inventory requirements by using the latest EPA emissions model, the most current version of the NONROAD model or its successor must be used for estimates of nonroad mobile source emissions, preferably with state-supplied model input data. States can alternatively develop technologically equivalent or superior state-specific nonroad emissions estimates, but should explain why their approach gives a better estimate than the EPA model. For nonroad sources not estimated by the NONROAD model, the best available methods should be used, and the EPA recommends that states refer to the SIP Emissions Inventory Guidance for more information on emissions from these sources. Links to *Federal Register* documents and policy guidance memos on the latest approved versions of MOVES and NONROAD can be found at *http://www3.epa.gov/otaq/models.htm*.

3. Comments and Responses.

Comment: Several commenters pointed out the uncertainties associated with ammonia emissions and organic matter emissions from livestock and fertilizer application sources, including in data developed by the EPA such as the National Emissions Inventory. Commenters pointed to the data available through the National Air Emissions Monitoring Study (NAEMS) for use in developing improved ammonia estimation approaches from livestock activities, and asserted that the EPA cannot move forward with SIP implementation requirements that implicate livestock and poultry farmers without using the NAEMS data. The commenters stated that not only is this technically unsound, but that the idea of moving forward on regulating livestock

operations without the most critical tool for establishing requirements is a violation of the spirit of the consent agreements[60] and the NAEMS.

Response: The EPA acknowledges that there is some uncertainty in quantifying ammonia emissions and other $PM_{2.5}$ precursors from source categories such as livestock and fertilizer application. This uncertainty extends to the emissions and chemical composition of VOC and $PM_{2.5}$, which also have an impact on ambient $PM_{2.5}$. These uncertainties have an impact on attainment demonstrations because they cause uncertainty in the modeling done to demonstrate future attainment of the $PM_{2.5}$ standard. However, the EPA disagrees with the assertion that these uncertainties should eliminate certain pollutants from consideration for control measures or should slow progress on attainment planning.

Emissions uncertainty is a fact of air quality planning and cannot be avoided. Despite uncertainties in inventories of all kinds throughout the NAAQS program, great progress in improving air quality has been made through the attainment planning process and the implementation of control measures selected in part based on modeled attainment demonstrations. While emissions uncertainties remain, enough information is available for $PM_{2.5}$ implementation planning purposes. The requirements contained in this final rule may drive further improvements in our understanding of emissions, and while the EPA strives to provide approaches for estimating emissions from a variety of source categories, the CAA places the burden for developing accurate emissions inventories on the states. The CAA does not allow for

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[60] In 2005, the EPA offered animal feeding operations (AFOs) an opportunity to participate in a voluntary consent agreement referred to as the Air Compliance Agreement. Under the Agreement, participating AFOs provided the funding for the National Air Emissions Monitoring Study (NAEMS) – a 2 year, nationwide emissions monitoring study of the animal confinement structures and manure storage and treatment units in the broiler, egg-layer, swine, and dairy industries (*see* 70 FR 4958).

implementation of the NAAQS to be put on hold until all emissions uncertainties are eliminated. In fact, in spite of numerous uncertainties, states have developed emissions inventories for $PM_{2.5}$ and $PM_{2.5}$ precursors and performed modeling for $PM_{2.5}$ attainment demonstrations for the previous 1997 and 2006 NAAQS over the last 10 or more years.

Updated emissions estimating methodologies for animal feeding operations are under development using data collected during the period 2007-2009 from representative operations pursuant to the National Air Emissions Monitoring Study.[61] For the 2008 and 2011 national emission inventories, the EPA compiled state and county-level ammonia emissions estimates using information from state and local governments, the USDA Census of Agriculture and National Agriculture Statistical Service, and from existing ammonia emissions models. A new approach in development for use in the 2014 NEI uses the NAEMS data to improve the EPA's approach for estimating county-total emissions. The EPA expects that this update and other uses of the NAEMS data will help to reduce uncertainties in current ammonia inventories and will improve the quality of future emissions inventories needed for implementing the $PM_{2.5}$ NAAQS. The EPA disagrees that implementation planning should wait until NAEMS results are fully available. The EPA continues to make progress in using these data; however, the full use and implementation of new methods based on these data is not a prerequisite for progress on considering ammonia as a $PM_{2.5}$ precursor for the NAAQS implementation purposes. Moreover, in order for a state to demonstrate a precursor's insignificance (as necessary under this rule before excluding it from certain control or planning requirements), in some cases it may need to move forward without waiting until the NAEMS results are fully available. The EPA and USDA

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[61] For more information on the NAEMS study, *see: http://www3.epa.gov/airquality/agmonitoring/*.

are continuing to work collaboratively to better understand agricultural ammonia related emissions in order to more accurately represent the emissions and impacts of ammonia in relation to $PM_{2.5}$.

Comment: Commenters supported the EPA's proposed approach to require distinct emissions for filterable and condensable $PM_{2.5}$. Commenters asserted that this proposed requirement created an additional inventory requirement beyond what is already required in the AERR. Commenters also asserted that this requirement places an unnecessary burden on states and industry.

Response: The EPA disagrees with the assertion that an additional inventory requirement has been imposed by this rule. Within the AERR, 40 CFR 51.15(a)(1)(vi) states (with regard to what must be reported): "*Primary $PM_{2.5}$. As applicable, also report filterable and condensable components."* The term "also" implies "in addition to total primary $PM_{2.5}$," and the phrase "as applicable" is intended to mean when such emissions are emitted from the source. This requirement has been in place since 2008, providing ample time for states to ensure compliance with this reporting requirement in advance of this final rule. Furthermore, the EPA points out that it would be much more difficult for the EPA to assess (as part of evaluating an attainment plan) whether states have met the requirement to include condensable emissions, and thus a complete $PM_{2.5}$ inventory, without the states providing condensable emissions as something separate and distinct from filterable and total $PM_{2.5}$. In addition, having a complete emission inventory of filterable and condensable $PM_{2.5}$ emissions will enable a state to better identify contributing sources and develop a more effective plan.

The EPA also notes that new electric generating units that are subject to (40 CFR part 60, Subpart Da) without PM continuous emissions monitors (CEMs) have to conduct annual testing for condensable PM using Method 202 of appendix M of part 51.

Comment: Some commenters supported the EPA's proposed approach to require an attainment projected inventory for the nonattainment area. Other commenters asserted that such an inventory should not be required because it has not been required before and because the attainment demonstration is sufficient.

Response: The EPA disagrees with the latter commenters, noting that the rationale that such inventories have not been required before is not in and of itself a reasonable basis on which to exclude such a requirement now. The purpose of these inventories is well justified by the need for both the EPA and the public to be able to compare, during their reviews of the attainment plan, the base year inventory to the attainment projected inventory. Without such information, it is extremely difficult for the EPA to assess the projected emissions changes in the nonattainment area that the state asserts contribute to attainment. The attainment projected inventory may also play a role in meeting the RFP requirements of this rule. Furthermore, while the EPA has not explicitly required submittal of an attainment projected inventory in regulation, many states have developed such future year inventories as part of attainment demonstrations and have submitted them as part of $PM_{2.5}$ attainment plans in the past, thus demonstrating their viability and utility.

Comment: Commenters supported the EPA's proposed approach to allow seasonal inventories. Some commenters requested the use of clear language stating an allowance for episode-specific inventories in lieu of seasonal inventories.

Response: The EPA agrees with the commenters that for some source categories, seasonally averaged winter conditions would not be sufficient to represent the conditions leading

to violations of the 24-hour $PM_{2.5}$ standard. As described in Section IV.B.2.c of this preamble, some modifications have been made to the explanation of seasonal inventories to clarify that it would be reasonable to use an episodic average from the modeled attainment demonstration in some cases.

C. Pollutants to be Addressed in the Plan

Under subpart 4 of the CAA, states are presumptively required to analyze and evaluate emissions reduction measures for all sources of direct $PM_{2.5}$ and $PM_{2.5}$ precursors (*i.e.*, SO_2, NO_x, VOC and ammonia) in developing $PM_{2.5}$ attainment plans. Direct $PM_{2.5}$ emissions include both filterable and condensable $PM_{2.5}$ emissions. *See* further discussion of filterable and condensable $PM_{2.5}$ emissions in the background section (Section II of this preamble) and in the emissions inventory requirements for Moderate area attainment plans (Section IV.B of this preamble). Thus, a state must evaluate control measures for sources of filterable and condensable $PM_{2.5}$ emissions as part of an approvable control strategy for a Moderate $PM_{2.5}$ nonattainment area.

With regard to $PM_{2.5}$ precursors, Section III of the preamble describes that the rule provides for the possibility that the state may demonstrate that nonattainment area emissions of a particular precursor may not make a significant contribution to $PM_{2.5}$ levels that exceed the standard in the area, or that emissions reductions of the precursor may not be needed for expeditious attainment. Thus, the rule presumptively requires the state to evaluate potential control measures for all four precursors, but the state may not need to address one or more requirements for a particular precursor with an approvable precursor demonstration.

D. Attainment Plan Control Strategy

1. Background on Attainment Planning and the Evaluation of Control Measures

a. Summary of Proposal. The proposal included an overview of the statutory requirements and general guidance associated with attainment planning and evaluation of control measures.

b. Final Rule. The following overview of statutory requirements and general guidance remains unchanged except as discussed in this final rule.

The attainment planning requirements of subparts 1 and 4 were established to ensure that two important CAA goals are met: (i) that states implement measures that provide for attainment of the $PM_{2.5}$ NAAQS as expeditiously as practicable, but not later than the statutory attainment date; and (ii) that states adopt effective emissions reduction strategies in nonattainment areas. The Moderate nonattainment area attainment date is as expeditiously as practicable, but not later than the end of the sixth calendar year after designation.

CAA section 172(c) of subpart 1 of the CAA describes the general attainment plan requirement for RACM and RACT, requiring that attainment plan submissions "provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology) and shall provide for attainment" of the NAAQS.[62] The attainment planning requirements in subpart 4 that are specific to PM_{10} (including $PM_{2.5}$) likewise impose upon states an obligation to develop

[62] Because in CAA section 172(c) the term "reasonably available control measures," or RACM, also includes "reasonably available control technology," or RACT, this document uses the abbreviation "RACM/RACT" to represent these requirements collectively, where appropriate.

attainment plans that require RACM and RACT for sources of direct $PM_{2.5}$ and $PM_{2.5}$ precursors within a Moderate nonattainment area. CAA section 189(a)(1)(C) requires that states with areas classified as Moderate have attainment plan provisions to assure that RACM/RACT are implemented by no later than 4 years after designation of the area.[63] The EPA reads CAA sections 172(c)(1) and 189(a)(1)(C) together to require that attainment plans for Moderate nonattainment areas must provide for the implementation of RACM and RACT for existing sources of $PM_{2.5}$ and $PM_{2.5}$ precursors in the nonattainment area as expeditiously as practicable but no later than 4 years after designation.[64] The terms RACM and RACT are not defined within subpart 4, nor do the provisions of subpart 4 specify how states are to meet the RACM and RACT requirements. However, the EPA's longstanding guidance in the 1992 General Preamble helps inform our interpretation of RACM and RACT for the purpose of implementing the $PM_{2.5}$ NAAQS.

The EPA's guidance on RACM for sources of PM_{10} and PM_{10} precursors under subpart 4 in the General Preamble and Serious area Addendum includes the following: (i) a recommended list of potential measures to reduce PM_{10} for states to consider;[65] (ii) an emphasis on state evaluation of the technological and economic feasibility of potential control measures to determine whether such measures are reasonably available for implementation; (iii) an expectation that the state will provide a reasoned explanation for a decision not to adopt a

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[63] States with areas later reclassified as "Serious" nonattainment areas under subpart 4 must also develop and submit later plans to meet additional requirements for Serious areas. *See* 40 CFR 51.1003(b).

[64] This interpretation is consistent with guidance described in the General Preamble. *See* 57 FR 13498 (April 16, 1992), at page 13540.

[65] The appendices to the General Preamble, 57 FR 18070 (April 28, 1992), included sections on available fugitive dust control measures, available residential wood combustion measures, and available prescribed burning control measures.

particular control measure, including those measures recommended to the state in public comments or at a public hearing; and (iv) a discussion that in some cases partial implementation of an emissions reduction program may be considered RACM when full implementation would be infeasible within the given Moderate area timeframe.[66] Thus, the RACM requirement under subpart 4 applies to all types of sources and is not focused only on forms of control that are technology-based.

With respect to RACT requirements, the EPA's guidance in the General Preamble includes the following: (i) RACT has historically been defined as "the lowest emission limit that a source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility"; (ii) RACT generally applies to stationary sources, both stack and fugitive emissions; (iii) major stationary sources (*i.e.,* sources with potential to emit 100 tons per year or more of direct $PM_{2.5}$ or any $PM_{2.5}$ precursor) should be the minimum starting point for a state's RACT analysis, but states are recommended to evaluate RACT for smaller stationary sources as needed for attainment and considering the feasibility of controls;[67] and (iv) it is possible that a State could demonstrate that an existing source in an area should not be subject to a control technology especially where such technology is unreasonable in light of the area's attainment needs, or such technology is infeasible. In such a case, it could be concluded that no control technology is "reasonably available," and RACT for the source could be considered to be no additional control.[68] Thus, the RACT requirement under

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[66] *See* 57 FR 13498 (April 16, 1992), at pages 13540-41. *See also* the Addendum.
[67] *Ibid.*
[68] *Ibid.*

subpart 4 is primarily focused on stationary sources and forms of emissions control that are technology-based.

The appendices to the General Preamble noted that reducing air emissions may not justify adversely affecting other resources, for example, by increasing pollution in bodies of water, creating additional solid waste disposal problems or creating excessive energy demands. An otherwise available control technology may not be reasonable if these other environmental impacts are sufficiently adverse and cannot reasonably be mitigated. A state may consider a control measure for direct $PM_{2.5}$ or a $PM_{2.5}$ precursor not reasonable if, considering the availability of mitigating adverse impacts of that control on pollution of other media, the control would not, in the state's reasoned judgment, provide a net benefit to public health and the environment. It should be noted that, in many past situations, states and owners of existing sources have adopted control technologies for direct $PM_{2.5}$ and/or $PM_{2.5}$ precursors with known energy penalties and some adverse effects on other media, based on the reasoned judgment that installation of such technology would result in a net benefit to public health and the environment. States should consider this before determining that a control technology is not reasonable because it may have other, negative environmental impacts that are on balance marginal.

This final rule specifies the basic requirements that states must meet in identifying and selecting the complete suite of measures needed for an attainment plan submission for a Moderate $PM_{2.5}$ nonattainment area. This preamble, together with the General Preamble, provides further description of the recommended process for states to follow in meeting these requirements. Under this process, the specific determination of RACM and RACT is to be made within the broader context of assessing control measures for all stationary, area and mobile

sources of direct $PM_{2.5}$ and $PM_{2.5}$ precursors that would collectively contribute to meeting the Moderate area attainment date as expeditiously as practicable.[69]

The final rule requires that all moderate area plans contain RACM, which is defined as any technologically and economically feasible measure that can be implemented in whole or in part within 4 years after the effective date of designation of a $PM_{2.5}$ nonattainment area and that achieves permanent and enforceable reductions in direct $PM_{2.5}$ emissions and/or $PM_{2.5}$ precursor emissions from sources in the area. RACM includes reasonably available control technology (RACT). The EPA recommends that to meet this definition, the state should follow a process by which it first identifies all sources of emissions of direct $PM_{2.5}$ (including filterable and condensable $PM_{2.5}$) and all $PM_{2.5}$ precursors in the nonattainment area, and all potential control measures to reduce emissions from those source categories.[70] The state next determines if any of the identified potential control measures are not technologically feasible and whether any of the

[69] In *Sierra Club v. EPA*, 294 F.3d 155 (D.C. Cir. 2002), the court stated, in upholding the EPA's statutory interpretation of RACM, that the CAA does not compel a state to consider a measure without regard to whether it would expedite attainment**.**

[70] The proposal described situations where some control measures could be exempted from consideration at the beginning of the analytical process. For example, control measures for a particular precursor would not need to be evaluated if the air agency submits an acceptable precursor demonstration as described in Section III of the preamble.

identified technologically feasible control measures are not economically feasible. Measures that are not necessary for attainment need not be considered as RACM/RACT.[71]

Measures that can only be implemented after the 4-year deadline for RACM and RACT, but before the end of the sixth calendar year following designation, are defined in the final rule as "additional reasonable measures."[72] The EPA has created this new definition based on the recognition that in some areas there could be emission reduction strategies that still could be implemented beginning 4 years after designation through the attainment date that could help to

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[71] This has been the EPA's longstanding interpretation of RACM/RACT in CAA sections 172(c)(1) and 189(a)(1)(C), which were enacted as part of the amendments to the Act in 1990. Even prior to the 1990 amendments, the EPA interpreted the statutory term RACM to encompass only those measures "necessary to assure reasonable further progress and attainment by the required date." 44 FR 20375 (Apr. 4, 1979); *see* 40 CFR 51.1(o) (1972) (defining RACT in similar terms); 42 U.S.C. 7502(b)(2) (1988) (requiring RACM in the precursor to current CAA section 172(c)(1)). In the 1990 amendments to the Act, Congress enacted a "[g]eneral savings clause" stating that "[e]ach regulation, standard, rule, notice, order and guidance promulgated or issued by [EPA] under this chapter, as in effect [before the 1990 Amendments], shall remain in effect according to its terms." 42 U.S.C. 7415. Since the passage of the 1990 amendments, the EPA's interpretation of RACM and RACT as encompassing only those measures necessary to advance attainment has been upheld in multiple U.S. Circuit Courts of Appeals. *See NRDC v. EPA*, 571 F.3d 1245, 1251-1253 (D.C. Cir. 2009); *Sierra Club v. EPA*, 314 F.3d 735, 743-744 (5th Cir. 2002); *Sierra Club v. EPA*, 294 F.3d 155, 162 (D.C. Cir. 2002). *But cf. Sierra Club v. EPA*, 793 F.3d 656 (6th Cir. 2015) (holding that an area must have subpart 1 RACM/RACT approved into its SIP prior to redesignation, regardless of whether the area is attaining the NAAQS).

[72] In addition to the statutory requirements under CAA sections 172(c)(1) and 189(a)(1)(C) for RACM and RACT, CAA section 172(c)(6) requires that a state's attainment plan for a nonattainment area "include enforceable emission limitations, and such other control measures, means or techniques (including economic incentives such as fees, marketable permits, and auctions of emission rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to provide for attainment of such standard in such area by the applicable attainment date specified in this part." The EPA interprets this statutory provision to require a state to identify, select and implement additional measures to those identified as RACM and RACT for the area if needed to provide for timely attainment of the area. In the EPA's proposed approach, the EPA describes criteria for identifying and selecting "additional reasonable measures" for sources of direct $PM_{2.5}$ and $PM_{2.5}$ precursors in a Moderate nonattainment area which may be necessary in order to bring the area into expeditious attainment.

improve air quality and attain the standard expeditiously in the area. Note also that the state has discretion to require reductions from any source inside or outside of a $PM_{2.5}$ nonattainment area (but within the state's boundaries) in order to fulfill its obligation to demonstrate attainment in a $PM_{2.5}$ nonattainment area as expeditiously as practicable, and it may need to require emissions reductions on sources located outside of a $PM_{2.5}$ nonattainment area if such reductions are needed in order to provide for expeditious attainment of the $PM_{2.5}$ NAAQS.

Lastly, the final rule requires the state to perform an analysis (typically an air quality modeling analysis) to determine the earliest practicable attainment date for the area. This analysis should take into account projected emissions reductions associated with existing federal and state regulations, plus any additional reductions that would be achieved due to new control measures that would be needed for expeditious attainment.

In the case of a Moderate area that can demonstrate it can attain by the statutory attainment date without implementing all reasonably available control measures (i.e. RACM/RACT and additional reasonable measures), the state would not be required to adopt certain otherwise reasonable measures if the state demonstrates that collectively such measures would not enable the area to attain the standard at least 1 year earlier (i.e., "advance the attainment date" by 1 year). The EPA has long applied this particular test to satisfy the statutory provision related to an area demonstrating attainment "as expeditiously as practicable."[73] The EPA continues to believe that this approach provides an appropriate degree of flexibility to a state to tailor its attainment plan control strategy to the actual attainment needs of a particular $PM_{2.5}$ nonattainment area. In the case of a Moderate area that cannot demonstrate that it will

[73] The term "expeditious attainment" is used throughout this proposal to describe the ability of a nonattainment area to attain "as expeditiously as practicable" based on the test described here.

practicably attain by the statutory attainment date, the state would be required to evaluate potential control measures for sources in the nonattainment area and adopt all reasonable measures (i.e., RACM and RACT, and any "additional reasonable measures").

The following sections of the preamble describe the steps of the control measure evaluation process in more detail, and include discussion of the consideration of public comments as appropriate.

2. Step 1: Identify Sources of Emissions

a. Summary of Proposal.

The proposal stated that the identification of all sources of emissions of direct $PM_{2.5}$ (including filterable and condensable $PM_{2.5}$) and all four $PM_{2.5}$ precursors in the nonattainment area is the starting point for the state's analysis of potential control measures. It was noted that an exception to this comprehensive review requirement might be possible if the final rule includes a policy that would allow a state to demonstrate that one or more precursors in a nonattainment area do not significantly contribute to $PM_{2.5}$ levels that exceed the standard. If such a demonstration were approved by EPA, then the state would not be required to adopt control measures for the precursor.

The proposal also included discussion of a possible *de minimis* source category exemption concept for Moderate areas. Under the approach, the analysis and identification of "*de minimis* source categories" for Moderate areas would occur early in the planning process, before potential control measures are identified or attainment modeling is conducted. The proposal recognized the challenges associated with defining "source categories." The proposal also included potential options on how source categories could be defined, and requested comment on using the North American Industry Classification System (NAICS) (which provides a detailed

hierarchy of numeric codes for different industries and process types) at the two, four, or six digit levels.

The proposal also presented the concept of a possible bright line ambient impact threshold for determining whether a source category should be considered *de minimis* (in the event a *de minimis* concept is adopted). Comments were requested on two options: 1) no bright line threshold; and 2) a threshold in the range of 1-3 percent of the relevant $PM_{2.5}$ NAAQS. This range was selected because it was similar to the *de minimis* source category threshold range (2.0 – 3.3 percent of the PM_{10} NAAQS) included in the 1994 Serious Area Addendum.

b. Final Rule.

Section 172(c)(3) of the CAA requires that attainment plans for $PM_{2.5}$ nonattainment areas include a "comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants." Consistent with the proposal, the final rule maintains the policy that the state must begin the control consideration process by identifying potential control measures for all the sources included in the most recently available emissions inventory for the nonattainment area. The inventory must include emissions information for all existing major stationary sources as point sources, nonpoint sources (as defined by 40 CFR 51.50) including non-major point sources, and mobile sources of direct $PM_{2.5}$ (including filterable and condensable $PM_{2.5}$) and $PM_{2.5}$ precursors in the nonattainment area. Section IV.B of this preamble provides a detailed discussion of emission inventory requirements.

The rule requires that a state must identify all of the sources reflected in the nonattainment area's base year inventory as the initial step in developing reasonable control measures for the area, as each of these sources may play a role in the area's $PM_{2.5}$ problem. A state would need to consider all inventoried sources of direct $PM_{2.5}$ emissions (including

filterable and condensable $PM_{2.5}$) and sources of all four scientific $PM_{2.5}$ precursors as it conducts its determination of reasonable control measures for an area.

Some commenters suggested that subpart 4 only provides authority to regulate precursors from major stationary sources and not from other types of sources, such as area or mobile sources. However, EPA disagrees with these commenters, given that the CAA provides an overarching requirement to attain the standard as expeditiously as practicable, $PM_{2.5}$ precursor emissions play a very significant role in fine particle concentrations nationally, non-major sources are important sources of precursor emissions, and nothing in the statutory requirements for RACM and BACM limits these requirements only to major stationary sources.

As discussed in the previous section, the final rule provides that states may develop a precursor demonstration showing that a particular $PM_{2.5}$ precursor does not contribute significantly to $PM_{2.5}$ levels that exceed the standard. If such a demonstration is approved by the EPA, then the state would not be required to adopt control measures for the precursor. Note that the state would still be obligated to evaluate and adopt control measures from a source if the source has emissions of direct $PM_{2.5}$ and/or the remaining $PM_{2.5}$ precursors that must be controlled in the plan.

The EPA received a diverse set of comments on whether to include a *de minimis* source category exemption policy. Some commenters questioned why an up-front (*i.e.*, before analysis of potential control measures) source category by source category exemption should be included in the final rule in the first place, when the traditional RACT/RACM policy approach for the NAAQS implementation has enabled states not to adopt otherwise reasonable control measures if after analyzing potential control measures it is determined that such measures are not needed for expeditious attainment. These commenters also suggested that a *de minimis* source category

approach would undermine any RACM/RACT analysis to evaluate whether a collection of measures could advance the attainment date by a year, because a *de minimis* exemption policy would potentially allow for an area to exempt many categories which together could have a substantial ambient impact. Other commenters noted that providing a source category exemption in one nonattainment area would give those companies a competitive advantage over the same types of sources in other areas.

A number of commenters supported the *de minimis* source category concept because they believed it could result in a reduced burden in the control measure evaluation stage and help avoid regulating sources with limited impact on $PM_{2.5}$ levels. However, a number of commenters also expressed concern about the analytical resources that might be needed to conduct air quality modeling for a *de minimis* source category analysis. To address this analytical concern, some commenters suggested that the EPA include an emissions-based threshold (*e.g.*, tons per day) rather than an air quality based threshold, and allow for its use only if controls on the source are not needed for expeditious attainment. However, the commenters did not address the fact that the air quality impact of a specific tons per day rate could vary widely from one pollutant to another within a particular nonattainment area. Other commenters noted that the NAICS system does not provide categories for nonpoint sources, and that this issue would need to be addressed if the NAICS approach were to be included in the final rule. Other commenters suggested that the rule not have a *de minimis* threshold at all but include the ability for the state to propose *de minimis* source categories to the EPA on a case-by-case basis.

After taking the range of comments on the *de minimis* source category concept into consideration, the EPA has decided to not finalize a *de minimis* source category approach for Moderate areas. The EPA is persuaded by commenters who argued it is not necessary, and

believes that without this concept, the final rule will nevertheless provide sufficient flexibility in the Moderate area control measure analysis and attainment demonstration process due to the availability of precursor demonstrations, considerations of case-specific factors in determining technical and economic feasibility, and the longstanding ability for the state not to adopt certain otherwise reasonable measures if they are not needed for expeditious attainment. The EPA also finds that from a technical perspective, it would be very challenging to implement a *de minimis* source category process in a consistent manner nationally without clear guidelines describing how narrowly or how broadly a *de minimis* exemption could apply, or how the technical analysis would need to be performed. The EPA agrees with commenters that NAICS codes do not provide an appropriately comprehensive approach for defining source categories for this purpose. We note that a *de minimis* source category exemption process has been available in PM_{10} NAAQS implementation guidance (the Addendum) since 1994, and remains available. In many PM_{10} areas, it is relatively straightforward to identify the predominant source categories contributing to the NAAQS violations (such as direct PM emissions from dust or wood smoke), and therefore to be able to identify what categories might be considered *de minimis*. However, implementation of the $PM_{2.5}$ NAAQS presents more complex challenges. Precursors and their contribution to secondarily formed PM play a much greater role in $PM_{2.5}$ nonattainment areas than in PM_{10} nonattainment areas. In addition, the relative impact of each precursor to local $PM_{2.5}$ concentrations varies from area to area. For these reasons, a *de minimis* source category concept for $PM_{2.5}$ is not included in this final rule.

c. Comments and Responses.

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

3. Step 2: Identify Existing and Potential Control Measures.

a. General Guidance.

i. Summary of Proposal.

The proposal preamble described general guidance for identifying existing and potential control measures.

ii. Final Rule.

The guidance remains largely unchanged from the proposal. The state's compilation of existing and potential control measures[74] should be sufficiently broad to provide a basis for identifying all technologically and economically feasible controls that may be RACM or RACT for sources of direct $PM_{2.5}$ (including filterable and condensable $PM_{2.5}$) and $PM_{2.5}$ precursor emissions in the nonattainment area at issue. Because RACM applies to area and mobile sources as well as stationary sources, states should identify and consider control measures for all types of sources.[75]

It is important to note that the emission inventory provisions of this rule require states with sources of direct $PM_{2.5}$ to include emissions data for both filterable $PM_{2.5}$ and condensable $PM_{2.5}$ in the base year inventory for the nonattainment area. For some types of sources, condensable emissions can be much larger than filterable emissions, in some cases by ten times or more. Because the availability of condensable $PM_{2.5}$ emissions data has been limited to date

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[74] Note that the term "control measures" as used in this preamble broadly represents a range of enforceable approaches for reducing emissions. These enforceable approaches include, but are not limited to, installation of control technology, process changes, a change in fuel use, limitations on use or operation of a particular pollutant-emitting device, equipment replacement, dust minimization practices, and road paving.

[75] Additional guidance on evaluating potential control measures is provided in the previous Section III.D.1 of this preamble, Background.

but more data will become available through nonattainment planning efforts, the EPA recommends that states pay particular attention to identifying potential control measures for source categories with substantial condensable emissions. If measures are found to be technically and economically feasible for reducing condensable $PM_{2.5}$ emissions as well as filterable $PM_{2.5}$ emissions from a source, the state will need to adopt a new emissions limit for the source that accounts for both the filterable and condensable portions, and includes requirements for ensuring compliance using source test methods updated in 2011.[76]

The control measure evaluation process described in this section generally allows states to apply reasoned judgment as they identify potential control measures for sources of direct $PM_{2.5}$ and $PM_{2.5}$ precursors in their respective nonattainment areas. In section 51.1009(a)(3)(iii) of the final rule, the state is required to include a complete and reasoned explanation to support its selection and rejection of control measures as part of the attainment plan submission for any Moderate nonattainment area.

Existing control measures. As a starting point when identifying candidate control measures, a state should include an initial list of control measures that are being implemented or will be implemented due to promulgated and/or adopted (*i.e.*, "on the books") regulations for sources of direct $PM_{2.5}$ and $PM_{2.5}$ precursors in its Moderate $PM_{2.5}$ nonattainment area. The EPA expects that the state will incorporate anticipated emissions reductions from these "existing" control measures (such as expected SO_2 reductions from the MATS; reductions of NO_x and direct $PM_{2.5}$ from engine and fuel standards to reduce emissions from on-road and nonroad mobile sources) into its attainment demonstration modeling for the nonattainment area, and

[76] *See* 75 FR 80118 (December 21, 2010), revisions to test methods for measuring condensable PM emissions from stationary sources (Method 202).

therefore the EPA believes it is appropriate for the state to clearly indicate the existence of such measures in the attainment plan for the area.

The EPA recognizes that for some sources located in a Moderate $PM_{2.5}$ nonattainment area, a state may have previously conducted control technology analyses to address emissions for previous RACM/RACT analyses or for other statutory purposes. Some of these determinations may have been done relatively recently, while other determinations may be several years old. A state may not simply rely on a previous RACM or RACT determination or other control technology analysis for a particular source or source category, regardless of how recently it was performed, when developing the attainment plan for a $PM_{2.5}$ NAAQS. Past experience has shown that due to ongoing innovation, cost-effective control technologies and process alternatives for many sectors continue to be developed, and new reasonable opportunities to reduce emissions in the future are expected to be available for existing sources, particularly those with technology determinations made several years ago. For this reason, the state must determine whether the existing controls or emissions reduction approach at the source can be updated or improved with reasonably available controls or strategies to achieve increased levels of emission reduction. In cases where a stationary source has installed new state-of-the-art emissions controls fairly recently (*e.g.*, within the last 3 years), the state technically would still need to provide a RACT analysis for the source, but in such cases it may be appropriate to find that existing controls satisfy the RACT requirement. Based on this policy, the state's updated RACM and RACT analyses will represent the most thorough, up-to-date review of control measures for its $PM_{2.5}$ nonattainment area. The collection of existing control measures, any updated RACT/RACM determinations, and potential new control measures can then be considered together by the state as part of a comprehensive analysis to ensure the area will attain expeditiously. The EPA notes,

however, that the more recently this analysis has been done, the less effort is expected to be needed to verify that it is up to date.

Potential control measures. In addition to identifying and reviewing existing control measures for sources in a Moderate $PM_{2.5}$ nonattainment area, a state must develop a comprehensive list of potential new control measures. This process should involve close coordination between the state, source owners, municipalities, and other interested stakeholders. The potential measures should also have a strong technical basis. Analysis of emission inventory data summaries, fine particle speciation monitoring data and source apportionment air quality modeling data can help identify key sectors contributing to the $PM_{2.5}$ problem in an area. Other analyses to characterize the seasonal variation of $PM_{2.5}$ concentrations and associated meteorology may help inform the state in identifying contributing sources and potential control measures.

Information about potential control measures and control technologies is available from a number of sources. One important source of information is the combined regulatory experience of other states. A compilation of existing control regulations that are on the books in other states can be a useful starting point for identifying potential control measures. Another source of information is the EPA's Office of Air Quality Planning and Standards (OAQPS) "Menu of Control Measures" document, available online at *http://www3.epa.gov/ttn/naaqs/pdfs/MenuOfControlMeasures.pdf*. This document was developed to provide information useful in the development of local emissions reduction and the NAAQS SIP scenarios, and identifying and evaluating potential control measures. It provides a broad, though not comprehensive, listing of potential emissions reduction measures for direct $PM_{2.5}$ and precursors of ozone and $PM_{2.5}$ from stationary, area and mobile sources. More complete

information on mobile source control measures can be found on the EPA's Office of Transportation and Air Quality Web site at *http://www.epa.gov/otaq*.

The RACT/BACT/LAER Clearinghouse (RBLC) provides a central database of air pollution technology information (including past RACT, BACT and LAER decisions contained in NSR permits) to promote the sharing of information among permitting agencies and to aid in future case-by-case control measure determinations. The RBLC permit database contains over 5,000 determinations that can help a state identify appropriate technologies to mitigate most air pollutant emission streams. The RBLC includes data submitted by several U.S. territories and all 50 states on over 200 different air pollutants and 1,000 industrial processes, and can be searched for control approaches that address specific pollutants. The RBLC can be found at: *http://cfpub.epa.gov/rblc/.*

Additionally, the EPA maintains a Web site with links to other online sources of information on control measures for states to consider.[77] Again, the EPA recognizes that control technology guidance for certain source categories has not been updated for many years, and, for this reason, the agency expects states to identify and consider new and updated information in their RACM and RACT determinations as it becomes available.

iii. Comments and Responses.

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

[77] Links are provided to a number of national, state and local air quality agency sites from the EPA's $PM_{2.5}$ Web site: *http://www3.epa.gov/pm/measures.html.*

b. Managing Emissions From Wildfire and Wildland Prescribed Fire.

i. Proposed Rule.

The EPA proposed to recommend as guidance but not as a requirement of the final rule that, if wildfire impacts are significant, contributing to exceedances of the standard, then states should consider RACM for wildfires (which RACM could include a required program of prescribed fires). The EPA also proposed to recommend that states should consider RACM for managing emissions from prescribed fires (including those prescribed fires conducted to reduce future wildfire emissions). The proposal noted that information is available from the DOI and the USDA Forest Service on smoke management programs and basic smoke management practices (BSMP). The EPA requested comment on the concept of, and practical considerations associated with RACM for wildfire and RACM for prescribed fire, including such issues as how such measures can be characterized in the emissions inventory and attainment demonstration and made federally enforceable for adoption in a SIP.

ii. Final Rule.

Wildfire can make a large contribution to air pollution (including $PM_{2.5}$), and wildfire events can threaten public safety. These effects can be mitigated through management of wildland vegetation, including through prescribed fire. Such mitigation can help manage the contribution of fires to $PM_{2.5}$ levels in nonattainment areas. Prescribed fire (and some wildfires) can mimic the natural processes necessary to maintain fire dependent ecosystems, minimizing catastrophic wildfires and the risks they pose to safety, property and air quality.

Upon consideration of public comments and further consultation with other federal agencies, the EPA recommends, as guidance for states as they implement the final rule, that states follow a different approach to addressing RACM for wildland fire than the approach that

the EPA proposed to recommend. Before explaining this recommendation further, the EPA wishes to clarify that the recommendation is focused on wildland fire management. There are other uses of prescribed fire and other types of burning that occur in nonattainment areas, or that affect downwind nonattainment areas, such as burning of land clearing debris, agricultural burning, and burning of logging slash on land where the primary purpose of the logging is for commercial timber sale.[78] The challenges with applying the traditional nonattainment planning framework that are raised in this discussion are particular to wildland fire, and the EPA believes that addressing these other uses of prescribed fire does not present nearly the same level of challenge, and thereby can still be accommodated within the nonattainment planning framework. For example, where these other types of burning currently contribute to $PM_{2.5}$ levels in a nonattainment area, states may, with an adequate technical demonstration, be able to take credit for reductions resulting from improvement in smoke management techniques for these types of prescribed fire where the improvement results in a demonstrated reduction in impacts in the nonattainment area. The remainder of this discussion is not meant to address these categories, and is instead focused on prescribed fire on wildlands.

The EPA also wants to clarify that it is not the intention to in any way discourage federal, state, local or tribal agencies or private land owners from taking situation-appropriate steps to minimize impacts from prescribed fire emissions on wildland. The EPA encourages all land owners and managers to apply appropriate basic smoke management practices to reduce emissions from prescribed fires, especially where a state has determined that prescribed fires are

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[78] The EPA notes that some wildland logging operations are conducted for the same purposes as prescribed fire (e.g., reducing fuel load, ecosystem benefits, etc.). The fact that some of the removed trees may be sold as timber does not make commercial timber sale the primary purpose of such operations.

a significant source affecting air quality. The EPA understands that the federal land managers (FLMs) apply these measures routinely and will be available to consult with other agencies and private parties interested in doing the same.

However, for several reasons, the EPA does not believe it would be effective policy or technically appropriate to recommend that control measures for wildland fire be adopted into the SIP as enforceable measures and credited for emissions reductions (of $PM_{2.5}$ and precursors) that would help the area attain the standard.[79] Instead, EPA recommends that $PM_{2.5}$ nonattainment plans (and in particular the attainment demonstrations) not expressly account for expected air quality changes over the planning period resulting from changes in the use of wildland prescribed fire to reduce future wildfires, or air quality changes over the planning period resulting from changes in wildland fire emissions due to a program of prescribed fire or due to any other cause including climate change. In most cases, state attainment demonstration modeling should assume that wildland prescribed fire and wildfire emissions in the attainment year will be equal to, and have the same temporal and geographic pattern as, those assumed in the baseline inventory year.

The EPA acknowledges that some temporal and spatial patterns of fire emissions must still be assumed in the attainment demonstration in order to ensure that the required air quality modeling results in a realistic physical and chemical environment and a correspondingly realistic

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[79] These reasons include concerns raised by commenters about the difficulties associated with requiring or even encouraging states to incorporate wildland fire emissions into existing nonattainment planning procedures and practices under the CAA; high year-to-year variability and unpredictability with emissions from wildland fires; uncertainty in the amount of credit to give for reduced wildfire within the planning period and in the amount of benefit that exists after accounting for increases in prescribed fires within the planning period; and finally, the fact that air quality data actually influenced by fire events may ultimately be excluded under the provisions of the Exceptional Events Rule.

model response against which to analyze the changes from categories where express accounting of changes is still being done. This rule is not intended to constrain the options for states regarding the appropriate assumptions to make for fire emissions. Rather, it simply recommends that once this base level is established, $PM_{2.5}$ plans should not attempt to expressly project changes over the planning period in emissions from wildfires or prescribed fires on wildland within the nonattainment area, or in upwind areas included in the modeling domain, that are due to variability in wildfire occurrence or changes in the use of prescribed fire or other wildland fire management practices. Moreover, the EPA anticipates that changes in spatial and temporal patterns of wildfire will likewise be too uncertain for them to be allowed to have the effect of reducing or increasing the control requirement on conventional anthropogenic sources. The EPA therefore recommends that baseline wildland fire emissions should generally be held constant over the planning period, regardless of whether wildland fire management practices by land managers are expected, and possibly encouraged, to change.

States still have flexibility in determining how best to represent baseline wildland fire emissions. As noted earlier, base year emission inventories for the nonattainment areas should represent the conditions leading to nonattainment and be consistent with inventories used for modeling. For fires, the EPA additionally encourages states to use a representative mix of prescribed fire and wildfire in their inventories. In the past, some plans under previous $PM_{2.5}$ NAAQS have estimated the actual fire emissions and temporal and spatial patterns from a given year and used this estimate as the assumed future baseline for planning, while others have used average emissions over multiple years. Other approaches may be appropriate as well. Moreover, regardless of the approach used, the EPA still encourages states to submit actual wildfire and

prescribed fire activity data that are critical to developing emissions estimates to the NEI as suggested in the AERR.

A consequence of the recommendation of not expressly accounting for changes in wildland fires in attainment demonstrations is that measures to reduce emissions from wildland fires, such as prescribed fire for wildland wildfire prevention and mitigation purposes or smoke management programs and BSMP for prescribed fires in wildland, need not be included as RACM for the respective fire types. This is because the changes in emissions due to such measures would not be accounted for in determining what is necessary for attainment and/or what would advance the attainment date, which is how the EPA is recommending that RACM be determined. So, for example, in an area that can attain in 6 years with measures that do not address wildland fire, the EPA does not recommend that states attempt to quantify whether increased prescribed fire could advance the attainment date by 1 year, due to aforementioned difficulties associated with such quantification.

To be clear, nothing about this policy regarding RACM is intended to suggest that fires should be ignited in wildland (or elsewhere) without regard to the air quality or public health consequences. As noted earlier, the EPA believes these consequences are important to address, and intends to engage in dialogue with the FLMs, air agencies, tribes, state and private land owners and other stakeholders at appropriate times, such as during the process for the development of land management plans, about how land managers determine when and where prescribed fire is appropriate for particular wildlands and how to identify and implement appropriate mitigation measures. The policy simply makes clear the EPA's view regarding its recommendation for RACM for wildland fires.

The EPA notes that this recommendation regarding RACM differs somewhat from the recommendation that was offered in the preamble as guidance to states as they implement the EPA's recent SIP Requirements Rule for the 1997 and 2008 ozone NAAQS. The reasons for the strategy outlined earlier apply equally well to attainment demonstrations for the ozone NAAQS, and so EPA hereby makes the same recommendation for implementation of these ozone NAAQS as well. This recommendation, offered here in the same manner as the prior recommendation, supersedes the prior recommendation on RACM for wildfire in the preamble to the final SIP Requirements Rule for the 1997 and 2008 ozone NAAQS. The EPA will convey this revised recommendation to the air agencies that are working to prepare these ozone SIPs. The EPA also anticipates making this recommendation as part of our planned rulemaking on implementation of the 2015 ozone NAAQS. Note that this discussion pertains only to the RACM policy, and that other aspects of the fire discussions in the ozone SIP Requirements Rule remain applicable.

Finally, the EPA notes that, because a significant element of the rationale for this policy is the uncertainty in the timing of wildfires, we may reconsider this recommendation in the future, if adequate tools emerge that allow for predicting fire emissions with sufficient specificity. However, even if such tools emerge, due to inherent uncertainties it may be impossible to satisfactorily incorporate the use of such information into an attainment demonstration framework.

iii. Comments and Responses.

The EPA received many comments expressing agreement with EPA's recognition of the importance of wildland prescribed fire, and welcoming continued dialogue among states, the EPA, and other federal agencies on how best to ensure that land managers have adequate

management tools available, including prescribed fire and some wildfire, but also to ensure that use of these tools does not result in unhealthy air. The EPA intends to engage in such dialogue.

Some commenters also took positions on how specifically to define RACM for wildfires, ranging from required smoke management plans to simply stating that fires themselves are RACM with no further measures required. In light of the fact that EPA did not propose specific guidance on defining RACM for wildfires and typically does not define RACM for specific categories, and the fact that EPA is not recommending that states include RACM as proposed, we are not providing further guidance in response to those comments. Similarly, regarding baseline fire emissions, some commenters provided detailed suggestions regarding approaches to calculating baselines based not on actual fires (which may include periods when fires were suppressed) but on science-based fire regimes, fire return intervals and ecosystem types, including characteristics of wildland vegetation. The EPA notes that this guidance is not establishing or recommending any particular approach to calculating baseline fire emissions.

c. RACT for EGUs.

i. Summary of Proposal.

Through guidance in the preamble to the 2007 $PM_{2.5}$ Implementation Rule, the EPA established a rebuttable presumption that compliance with the CAIR would satisfy RACM and RACT requirements for SO_2 and NO_x emissions from EGUs in states participating in the CAIR cap-and-trade program for such emissions.[80] The EPA indicated that states could presume that EGUs located within a given nonattainment area were meeting the RACM and RACT

[80] *See* the *Federal Register* published on April 25, 2007 (72 FR 20586, 20623, 20624 and 20625).

requirements, based solely upon a regional program that imposed controls for SO_2 and NO_x emissions from sources both within and outside designated nonattainment areas.

In June 2007, the EPA received a petition for reconsideration questioning the legality of this presumption, which the D.C. Circuit later found to be unlawful in the context of a similar presumption in the Phase 2 Ozone (NAAQS) Implementation Rule.[81] The agency granted the petition for reconsideration in 2011 and proposed to withdraw from the 2007 $PM_{2.5}$ Implementation Rule any presumption that compliance with the CAIR automatically satisfies RACM and RACT requirements for SO_2 and NO_x emissions from EGUs located in nonattainment areas for the 1997 $PM_{2.5}$ NAAQS.[82, 83] In that proposal, the EPA explained that given the explicit wording of CAA section 172(c)(1) that sources "in the area" (*i.e.*, in the nonattainment area) must at a minimum adopt RACT controls for that area, the agency believes that it is no longer appropriate to presume that this requirement is satisfied merely based upon the participation of a source in a regional cap-and-trade program. Indeed, implicit in a regional cap-and-trade program is that some sources, including those located within nonattainment areas,

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[81] *See* "Petition for Reconsideration," filed by Paul Cort, Earthjustice, on behalf of the American Lung Association, Medical Advocates for Healthy Air, Natural Resources Defense Council, and the Sierra Club (June 25, 2007). A copy of the petition is in the docket for this action. The EPA's decision to grant the petition for reconsideration on the issue of the CAIR being presumptively equal to RACT for EGUs was in part based on a D.C. Circuit decision related to a similar issue. Specifically, the Court decided that the provisions in the Phase 2 Ozone Implementation Rule indicating that a state need not perform (or submit) a NO_x RACM/RACT analysis for EGU sources subject to a cap-and-trade program that meets the requirements of the NO_x SIP Call are inconsistent with the statutory requirements of CAA section 172(c)(1). The Court concluded that the phrase "in the area" means that reductions must occur from sources within the area and "reductions from outside the nonattainment area do not satisfy the requirement." *See NRDC v. EPA*, 571 F.3d 1245 (D.C. Cir. 2009).

[82] Letter dated April 25, 2011, from former Administrator Lisa Jackson to Paul Cort, Earthjustice. A copy of this letter is located in the docket for this action.

[83] 79 FR 32892 (June 9, 2013).

may elect to buy allowances in lieu of controlling emissions in order to meet the regional emissions reductions requirements.

Accordingly, in the proposal the EPA stated that it did not intend to include any rebuttable presumption that the CAIR or any other regional control strategy constitutes RACM or RACT for EGUs or any other source category. Instead, the EPA stated that it is clarifying that in order to meet the RACM and RACT requirements for the $PM_{2.5}$ NAAQS, states should evaluate EGU sources for RACM and RACT level controls just like any other source category, and not merely presume for EGUs located in a nonattainment area that compliance with a cap-and-trade program, including the CAIR or any other program, would satisfy their obligation to implement RACM and RACT. As required by the CAA, states are required to analyze what constitutes RACM and RACT for EGUs in each nonattainment area.

ii. Final rule.

The final rule maintains the proposed policy approach as described earlier. As required by the CAA, states are required to analyze what constitutes RACM and RACT for EGUs in each nonattainment area, just as they are required to do for all other types of sources.

iii. Comments and Responses.

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

4. Step 3: Determine whether an available control measure or technology is technologically feasible

a. Summary of Proposal.

The proposal cited longstanding guidance from the General Preamble regarding factors to consider when determining the technological feasibility of a potential control measure or control

technology, and it requested comment on the factors. These factors included a source's processes and operating procedures, raw materials, physical plant layout, and potential environmental impacts such as increased water pollution, waste disposal, and energy requirements. One sentence in the proposal stated: "With respect to determining whether a given control measure might not be technologically feasible for an area or mobile source, the EPA also proposes to retain its longstanding practice that a state may consider relevant factors in conducting its analysis, such as the social acceptability of the measure…"[84]

b. Final Rule.

Several comments addressed the EPA's inclusion of the social acceptability factor in the proposal. In reviewing this issue, the EPA determined that this factor actually has not been identified as a factor in the EPA's longstanding guidance, and thus was mischaracterized in the proposal. Nevertheless, some commenters supported inclusion of the factor because no other factor is presented to help limit or eliminate a potential measure with strong public opposition. Other commenters that opposed use of such a factor suggested that including it in the final rule could allow a state to reject almost any control measures that is otherwise found to be technically and economically feasible.

When the EPA issued a proposed $PM_{2.5}$ NAAQS implementation rule in 2005, it requested comment on the same social acceptability factor, and ultimately did not include social acceptability as a factor for determining RACM in the final 2007 $PM_{2.5}$ implementation rule. In the 2007 final rule, however, the EPA stated: "Therefore, given the concerns raised by commenters that establishment of 'social acceptability' as a factor in the RACM analysis is

[84] *See* the proposed $PM_{2.5}$ SIP requirements rule (80 FR 15340, 15373)

without basis in the CAA and might result in inappropriate skewing of control strategies, we have removed this term from the final rule. We reiterate, however, that capability of effective implementation and enforcement are relevant considerations in the RACM analysis, even though public 'unpopularity' is not. Moreover, in assessing the efficacy of measures and the credit they should be given in the context of attainment demonstrations or RFP calculations, EPA believes that such considerations are important." For the same reason it was not included in the previous implementation rule, the EPA has decided to not include the social acceptability factor in this final rule as well. *See* 40 CFR 51.1009(a)(3)(i).

The following guidance is similar to what was presented in the proposal but has been updated to exclude the social acceptability factor:

Once a state has identified existing and potential control measures and technologies for sources of direct $PM_{2.5}$ and $PM_{2.5}$ precursors in the nonattainment area(s), it must evaluate these controls to determine if any of those controls would be technologically infeasible in the particular nonattainment area.

With respect to the technological feasibility of control technologies for stationary sources, the EPA has a longstanding approach to evaluating facts relevant to this criterion under subpart 4.[85] The EPA interprets the term technological feasibility to include consideration of factors such as a source's processes and operating procedures, raw materials, physical plant layout, and potential environmental impacts such as increased water pollution, waste disposal and energy requirements. For example, the EPA recognizes that the process, operating procedures and raw materials used by a source can affect the feasibility of implementing process

[85] *See* the *Federal Register* published on April 16, 1992 (57 FR 13498, 13540 and 13541).

changes that reduce emissions and can also affect the selection of add-on emissions control equipment. The feasibility of modifying processes or applying control equipment also can be influenced by the physical layout of the particular plant, if the physical space available in which to implement such changes limits the choices. A state may consider such factors in determining whether a control measure is or is not technologically feasible to implement.[86]

In addition, with respect to determining whether a given control measure might not be technologically feasible for an area or mobile source, the EPA also retains its longstanding practice that a state may consider relevant factors in conducting its analysis, such as the condition and extent of needed infrastructure, population size, or workforce type and habits, which may prohibit certain potential control measures from being implementable.

c. Comments and Responses.

Comment: Some commenters stated that the EPA should make clearer in its rule and guidance that some categories of sources, particularly those such as animal and crop production, do not lend themselves to national determinations of best control practices; instead, these types of sources should be evaluated on nonattainment area specific conditions in determining the appropriate level of control measures.

Response: The EPA agrees that nonattainment area-specific conditions are important factors when considering emission reduction options. States need to consider the feasibility of all identified options that have been demonstrated to reduce $PM_{2.5}$ and $PM_{2.5}$ precursors to

[86] Addendum to the General Preamble, 59 FR 41998 (August 16, 1994), at page 42013. Guidance is provided in the context of Serious area BACM determination, but the EPA is applying it here for Moderate area RACM determinations.

determine whether such measures are appropriate for use in a particular $PM_{2.5}$ nonattainment area.

The EPA believes the determination of best control practices for any operation, particularly for animal production or crop production operations, should be a case-specific process. The process should start with the identification of $PM_{2.5}$ and $PM_{2.5}$ precursor emissions from the operation. Then it should consider which of the measures for reducing $PM_{2.5}$ and $PM_{2.5}$ precursors in a particular $PM_{2.5}$ nonattainment area are technically and economically feasible for a particular operation. The EPA recognizes that there are a number of factors specific to each operation that could determine whether a potential emission reduction measure is technically and economically feasible for implementation.

Although the EPA is not making any national determinations of best control practices for animal production and crop production operations, we do note that there are many relevant references on potential emissions reduction options, including the Agricultural Air Quality Conservation Measures Reference Guide for Cropping Systems and Land Management.[87] The EPA and USDA jointly developed this document to identify measures that have been demonstrated to reduce emissions and describe factors related to the applicability of each measure. A companion document is under development by the EPA and USDA that will identify potential emission reduction approaches for livestock operations. Additionally, USDA's Natural Resources Conservation Service (NRCS) provides a list of approved practices in managing air emissions of concern for particulate matter, ozone, greenhouse gas, and odor-related issues.[88] A

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[87] *See* the EPA Web site at *https://www3.epa.gov/airquality/agriculture/.*
[88] *See* the USDA NRCS Air Quality Technical Resources at *http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/air/quality/.*

number of regulatory and non-regulatory programs are already being implemented (in nonattainment and attainment areas alike) to reduce emissions of $PM_{2.5}$ and $PM_{2.5}$ precursors from agricultural operations. Finally, a large body of information is available on topics such as feed management, livestock housing, conservation tillage, road use and other topics from federal agencies, states, industry groups, academic institutions, and international organizations.

5. Step 4: Determine Whether an Available Control Measure or Technology is Economically Feasible

a. Summary of Proposal.

The proposal described that in the 1992 General Preamble, EPA's longstanding interpretation of the term "economic feasibility" in the context of evaluating potential RACM and RACT has included a presumption that it is reasonable for similar sources to bear similar costs of emissions reductions, even if they are in different nonattainment areas or different states. The proposal indicated that this presumption was not included in the 2007 implementation rule for the $PM_{2.5}$ NAAQS that the EPA had received a petition for reconsideration with respect to this issue, and that EPA had granted this petition in 2011. [89, 90] The March 2015 proposed $PM_{2.5}$ SIP requirements rule indicated the EPA's intention to not adopt the economic feasibility factors as described in the 2007 rule, but to return to the original interpretation from the 1992 General Preamble, including the presumption that it is reasonable for similar sources to bear similar costs of emissions reductions.

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[89] "Petition for Reconsideration," filed by Paul Cort, Earthjustice, on behalf of the American Lung Association, Medical Advocates for Healthy Air, Natural Resources Defense Council, and the Sierra Club (June 25, 2007). A copy of the petition is in the docket for this action.

[90] Letter dated April 25, 2011, from former Administrator Lisa Jackson to Paul Cort, Earthjustice. A copy of this letter is located in the docket for this action.

The proposal also characterized past guidance from the 1992 General Preamble as stating that if a state contends that a source-specific control level should not be established because the source(s) cannot afford the control measure that is demonstrated to be economically feasible for other sources in its source category, then the state must support the claim with information regarding the impact of imposing the identified control measure or technology on the several financial indicators. The proposal also recommended that cost effectiveness should generally be evaluated by assessing the cost per ton of emissions reduced associated with a control measure, but the proposal also requested comment on an alternative metric to assess cost effectiveness in terms of the cost per unit of air quality improvement (i.e., "cost per microgram").

b. Final Rule.

Based on a consideration of the comments received, the EPA has determined that economic feasibility considerations should generally align with the interpretation in the 1992 General Preamble. Note that the proposal indicated that if it is claimed that a control approach is not economically feasible for a specific source, the state needs to provide information related to several financial indicators to support the claim. We note that the original policy in the 1992 General Preamble suggests that if a source desires to make such a claim, it should provide such information to the state for its consideration. This final rule characterizes the policy in a similar manner, where the source would have the option of providing this financial information to the state for its review. This approach should address the concerns of some commenters that such financial information may not be readily available to the state. Thus, the final policy for considering economic feasibility of control measures is described in the following paragraphs.

The EPA has a longstanding interpretation of the term "economic feasibility" in the context of evaluating potential RACM and RACT which involves considering the cost of

reducing emissions and the difference between the cost of an emissions reduction measure at a particular source and the cost of emissions reduction measures that have been implemented at other similar sources in the same or other areas.[91] Absent other indications, the EPA presumes that it is reasonable for similar sources to bear similar costs of emissions reductions. Economic feasibility of RACM and RACT is thus largely informed by evidence that other similar sources have implemented the control technology, process change or measure in question.

For each technologically feasible control measure, a state should evaluate the economic feasibility of the measure or control, through consideration of factors such as the capital costs, operating and maintenance costs, and cost effectiveness (*i.e.*, cost per ton of pollutant reduced by that measure or technology) associated with such measure or control. A state should not reject a technologically feasible control measure or technology as being economically infeasible if such a measure or technology has been implemented at other similar sources (*i.e.*, at sources that would be included in the same source category in the emissions inventory data collection process), unless the state provides an adequate justification that clearly explains the specific circumstances of the source or sources in the nonattainment area that make such a measure or technology economically infeasible for sources in the nonattainment area. *See* 40 CFR 51.1009(a)(3).

The EPA believes that it is appropriate for states to give substantial weight to cost effectiveness in evaluating the economic feasibility of an emission reduction measure or technology. The cost effectiveness of a measure is its annualized cost ($/year) divided by the emissions reduced (tons/year) which yields a cost per amount of emission reduction ($/ton). Cost effectiveness provides a relative value for each emissions reduction option that is comparable

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[91] *See* the *Federal Register* published on April 16, 1992 (57 FR 13498, 13540 and 13541).

with other options and, in the case of control technologies, other facilities. In considering what level of control is reasonable, the EPA does not recommend a specific fixed dollar per ton cost threshold for economic feasibility of controls identified as potential RACM and RACT.

If a source contends that a source-specific control-level should not be established because the source cannot afford the control measure or technology that is demonstrated to be economically feasible for other sources in its source category, the source should make its claim known to the state and support the claim with information regarding the impact of imposing the identified control measure or technology on the following financial indicators, to the extent applicable:

(1) Fixed and variable production costs ($/unit)

(2) Product supply and demand elasticity

(3) Product prices (cost absorption vs. cost pass-through)

(4) Expected costs incurred by competitors

(5) Company profits

(6) Employment costs

(7) Other costs (*e.g.*, for RACM implemented by public sector entities).[92]

c. Comments and Responses.

Comment: With regard to the presumption that it is reasonable for similar sources to bear similar costs of emissions reductions, some commenters supported returning to the approach described in the General Preamble as EPA proposed, while other commenters suggested that

[92] These longstanding factors were established in the EPA guidance in 1992 and are applicable to implementation programs for all the NAAQS pollutants. *See* the appendices to the General Preamble, 57 FR 18070 (April 28, 1992).

based on its experience with industry the EPA knows that just because a technology will work at one source does not mean that it will necessarily work at a similar source due to source configuration and non-RACT reasons (e.g., enforcement proceedings) for the installation of different technology at "similar" sources.

Response: The latter commenters appear concerned that the rule would require the imposition of all controls on similar sources without allowing for consideration of whether such controls are technologically and economically feasible. This is not what EPA proposed. Instead, the EPA proposed, and is now finalizing, a requirement that the state first identify potential control measures for sources in a nonattainment area. The state should then identify which control measures are economically and technologically feasible based on its review of various factors. If the state determines that certain controls are not reasonably available based on its review of these factors, it must provide a written justification to the EPA explaining its rationale. This review should at least evaluate the feasibility of all the identified controls on similar sources to determine whether implementation of such controls in the nonattainment area at issue is reasonable. The EPA recognizes that there are a number of source-specific factors that the state can take into account in making these determinations. Factors such as the physical onsite configuration of a facility may determine whether a particular control device or operation can be feasibly implemented. Likewise, a state should take into account information provided by the source on particular economic factors such as those described earlier in making a case-by-case determination of the economic feasibility of a control measure.

Comment: Two commenters supported the EPA's proposal that cost-effectiveness should consider capital costs, operating costs and maintenance costs at the particular source in question.

Some commenters supported using an alternative cost effectiveness metric such as cost per microgram of air quality improvement where appropriate air quality modeling has been developed for the area and can reasonably characterize the relative importance of various precursors. Some commenters opposed the proposal's alternative cost-effectiveness metric because the approach is overly complex and the impacts are rarely uniform across an area.

Response: The EPA has decided to maintain its traditional recommendation to use a cost per ton approach for evaluating the cost effectiveness of particular control options. The EPA does not recommend the cost per microgram alternative approach because there are a number of technical and resource challenges associated with implementing it in a technically rigorous manner based on detailed air quality modeling information. The EPA believes that this policy approach would unnecessarily add complication and extra burden to the state's process for determining economic feasibility for subject sources in a nonattainment area. Moreover, the EPA believes that the flexibility described here to consider cost-effectiveness in assessing economic feasibility, when coupled with the upcoming discussion of Step 6, and with the major stationary source and comprehensive precursor demonstrations previously described will ensure that unreasonable application of measures (*e.g.*, those that are not effective in reducing $PM_{2.5}$ concentrations) will not occur.

6. Step 5: Determine the Earliest Date by Which a Control Measure or Technology Can be Implemented in Whole or in Part

a. Summary of Proposal.

In this section, the proposal discussed two main issues related to the date by which control measures can be implemented. First, it proposed that when a state is determining RACM/RACT, it must consider whether a control measure can be implemented in part when full

implementation of the measure within 4 years of designation is not feasible. The proposal also introduced the concept of "additional reasonable measures," meaning those measures that can only be implemented after the fourth year but prior to the Moderate area 6-year attainment date. It was proposed that a state must identify additional reasonable measures and adopt those measures as needed for expeditious attainment.

b. Final Rule.

This section remains relatively unchanged from the proposal. CAA section 189(a)(1)(C) requires that the attainment plan for a Moderate $PM_{2.5}$ nonattainment area provide for the implementation of RACM and RACT no later than 4 years after designation. The agency has long interpreted the term "implemented" to mean that a control measure or technology has not only been submitted to the EPA for approval as part of a SIP but has also been built, installed and/or otherwise physically manifested, and is achieving the intended emissions reductions, and the EPA retains this definition in this rule. *See* 40 CFR 51.1000.

The EPA recognizes that a state may be able to implement a given control measure only partially within 4 years after designation. The EPA addressed this situation in the General Preamble, stating: "It is important to note that a State should consider the feasibility of implementing measures in part when full implementation would be infeasible."[93] The EPA continues to interpret the RACM/RACT definition to mean that a state should not reject an otherwise technologically and economically feasible control measure or technology as RACM or RACT even if it can be only partially implemented within the statutory 4-year timeframe following designation of the area. Instead, a state must adopt as RACM and RACT that portion

[93] 57 FR 13498 (April 16, 1992), at page 13541.

of a control measure or technology that can feasibly be implemented within 4 years of the effective date of designation. *See* 40 CFR 51.1009(a)(4)(i)(A). For instance, if paving unpaved roads is a control measure that is technologically and economically feasible in a nonattainment area but a state cannot pave all candidate roads within 4 years of designation, the state must adopt as RACM a measure that requires paving of that portion of roads that the state could feasibly accomplish within 4 years if such a measure is needed for timely attainment of the $PM_{2.5}$ NAAQS in the area.

Therefore, for the purposes of meeting the RACM/RACT requirement, a state must identify those technologically and economically feasible control measures and technologies that it can implement fully or partially within 4 years of designation of its Moderate $PM_{2.5}$ nonattainment area. Depending on the severity of the $PM_{2.5}$ nonattainment problem in the area, some or all of these measures identified as implementable within 4 years may be needed in order to bring the area into attainment as expeditiously as practicable. These candidate measures may constitute RACM and RACT if the state determines, through its attainment demonstration that it needs to implement them to achieve timely attainment for the area.

In addition, a state must separately identify those technologically and economically feasible control measures that can only be implemented after the statutory window for implementing RACM and RACT, but before the attainment date. The statutory 4-year timing requirement for implementing RACM and RACT under CAA section 189(a)(1)(C) limits the control measures and technologies that can qualify as RACM and RACT for a Moderate $PM_{2.5}$ nonattainment area. However, the statutory requirement of CAA 172(c)(6) also requires states to implement "other measures" necessary to provide for timely attainment in an area. The EPA interprets this provision to include "additional reasonable measures," which are those measures

and technologies that can be applied at sources in the nonattainment area that are otherwise technologically and economically feasible but can only be implemented in whole or in part later than 4 years after designation.[94]

7. Step 6: Evaluate the Collective Impact of Potential Control Measures to Determine Whether the Area Can Attain Expeditiously or Whether it is Impracticable to Attain by the Attainment Date, and Adopt the Appropriate Set of Control Measures

a. Summary of Proposal.

The proposal described the control measure requirements for two situations: the case where the state can demonstrate attainment by the attainment date; and the case where the state demonstrates the area cannot practicably attain by the attainment date. If a state determines that a Moderate nonattainment area can attain the $PM_{2.5}$ NAAQS by the statutory attainment date, the state must adopt and implement any technologically and economically feasible control measures that are necessary to ensure that the area will attain the NAAQS as expeditiously as practicable. Those technologically and economically feasible measures needed for attainment that can be implemented within 4 years of the date of designation would be considered to be RACM/RACT. Those measures needed for attainment that cannot be implemented within 4 years but can be implemented no later than the attainment date would be considered to be "additional reasonable measures." The proposal stated that, consistent with longstanding policy, this means that the state

[94] With respect to "partial measures" under this proposed approach, the EPA would require that a state implement as RACM that portion of any control measure determined to be technologically and economically feasible and implementable within 4 years after designation of a nonattainment area. The state would then be required to implement as an additional reasonable measure that portion of the same control measure that can be implemented starting 4 years from designation through the sixth calendar year following designation.

may choose to not adopt certain measures if collectively they would not advance the attainment date by 1 year.[95]

For the situation where a state determines that it is impracticable to attain by the Moderate area attainment date, the proposal included two policy options for describing what control measures must be adopted and implemented. One option would have required the state to adopt all technologically and economically feasible control measures, as stated in past guidance in the General Preamble. The other option would have required adoption of technologically and economically feasible control measures with an explicit exception for those measures that collectively are determined to be "ineffective in reducing ambient $PM_{2.5}$ levels." The proposal also reviewed the proposed options for demonstrating that a precursor does not make a significant contribution to $PM_{2.5}$ levels that exceed the standard, and discussed how the final precursor policy may be an important consideration in deciding upon a control measure policy approach for Moderate areas that demonstrate they cannot practicably attain.

b. Final Rule (General).

For an area that can demonstrate that it will attain by the attainment date, the final rule maintains the same approach as described in the proposal regarding the collective evaluation of potential control measures to determine whether the area can advance the attainment date by 1 year. For an area that demonstrates that it would be impracticable to attain by the attainment date, the final rule does not include an explicit exception for those measures that collectively are

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[95] In the context of the PM_{10} NAAQS, the EPA has concluded that "advancement of the attainment date" should mean an advancement of at least 1 calendar year. *See* "State Implementation Plans; General Preamble for the Implementation of Title I of the CAA Amendments of 1990," 57 FR 13498 (April 16, 1992). *See also Sierra Club v. EPA*, 294 F.3d 155 (D.C. Cir. 2002).

determined to be "ineffective in reducing ambient $PM_{2.5}$ levels." More details are provided in sections (c) and (d) that follow.

Section 189(a)(1) of the CAA establishes a requirement that the attainment plan for a Moderate $PM_{2.5}$ nonattainment area must demonstrate either that an area can attain the relevant NAAQS by the applicable attainment date, or that it is impracticable for the area to do so. As noted previously, for Moderate $PM_{2.5}$ nonattainment areas, the "applicable attainment date" is as expeditious as practicable, but no later than the end of the sixth calendar year after designation as nonattainment. A complete discussion of the requirements for attainment demonstration modeling is presented in Section IV.E of this preamble. However, one of the key features of attainment demonstration modeling and related analysis is that they provide a means of synthesizing the effects of emissions reductions from all existing and potential new control measures identified for sources in a given nonattainment area on overall air quality in that area. States will use the results of their analyses to identify the appropriate combination of reasonable control measures for sources in their Moderate $PM_{2.5}$ nonattainment area and any other control measures needed on sources outside the nonattainment area to ensure expeditious attainment of the relevant NAAQS in the area and to meet the statutory requirements of CAA sections 189(a)(1)(B) and 172(c)(6) as explained later.[96]

Section 188 establishes the attainment dates for Moderate and Serious PM_{10} nonattainment areas, and this rule also applies such dates to Moderate and Serious $PM_{2.5}$

[96] Note that under section 110(l) of the CAA, after a state has adopted a control measure into the SIP for an attainment demonstration, it may remove or modify a measure if the state demonstrates to the satisfaction of the EPA that such removal or modification will not interfere with any applicable requirement of the CAA, such as attainment of the $PM_{2.5}$ NAAQS or meeting RFP requirements.

nonattainment areas. As described in Sections IV.D and IV.E of this preamble, in the case of a Moderate $PM_{2.5}$ nonattainment area for which a state can demonstrate attainment by the end of the sixth calendar year following designation, the state must follow a two-step process for determining the appropriate attainment date for the area. First, the state must demonstrate through air quality modeling that the area can attain the relevant NAAQS by the latest statutory attainment date and determine which control measures and technologies are needed for the area to attain by that date. Second, the state must determine whether implementing other reasonable controls (*i.e.*, those not needed for attainment by the latest possible date but that are technologically and economically feasible) can cumulatively advance the attainment date for the area by at least 1 year. In the event that a state determines that the area can attain the relevant NAAQS earlier through the application of other measures, the state must propose the earlier date as part of the attainment plan submission for the area. When the EPA takes action to approve the different elements of the attainment plan for the area, one of the elements that the agency will take action on will be the state's proposed attainment date for the area. If the EPA approves an attainment date for the area that is earlier than the latest date allowed by statute, then the applicable attainment date for the area will be the approved date. *See* 40 CFR 51.1004(a)(1)(i). If the area ultimately needs additional time to attain the relevant NAAQS, the state may request an attainment date extension for the Moderate nonattainment area under section 188 as long as certain conditions are met, as described in Section IV.J of this preamble.

c. Final Rule - Step 6 (Attainment Case): If the State Can Demonstrate Attainment in the Area by the Statutory Attainment Date for a Moderate Area, Then the State Must Implement Those Control Measures Needed for Expeditious Attainment of the NAAQS in the Area.

If a state determines that a Moderate nonattainment area can attain the $PM_{2.5}$ NAAQS by the statutory attainment date, the state must adopt and implement any technologically and economically feasible control measures that are necessary to ensure that the area will attain the NAAQS as expeditiously as practicable. The EPA will consider any such measures that can be implemented within 4 years of designation of the area to fulfill the RACM and RACT requirements for the area. In addition, the EPA will consider any such measures that can only be implemented between 4 years and the sixth calendar year after designation to meet the requirements of CAA section 172(c)(6) as "additional reasonable measures" for the area and necessary to demonstrate timely attainment under CAA section 189(a)(1)(B).

For this type of situation, the state may reject any otherwise technologically or economically feasible measures that are not needed to demonstrate attainment or that will not advance the attainment date by at least 1 year. That is, for a Moderate area that can demonstrate attainment by the statutory Moderate area attainment date, the EPA defines as "reasonable" only those technologically and economically feasible measures that are necessary for expeditious attainment of the NAAQS, as the CAA does not require a state to adopt measures that are not needed for expeditious attainment in a Moderate $PM_{2.5}$ nonattainment area. Thus, a state may exclude those otherwise reasonably available measures that, if adopted and considered collectively, would not advance the attainment date for the area by at least 1 year, so long as the state can demonstrate attainment as expeditiously as practicable and no later than the statutory Moderate area attainment date. The EPA maintains that identifying a complete set of measures

that qualify as RACM/RACT and additional reasonable measures but that are not necessary for attainment within 6 years is imperative to adequately demonstrate that such measures will not collectively advance the attainment date for a Moderate area by at least 1 year. The EPA will require a robust analysis and explanation by the state when such determinations are made. *See* 40 CFR 51.1009(a)(4)(i).

d. Final Rule - Step 6 (Impracticability Case): If the State Cannot Demonstrate Attainment by the Statutory Attainment Date for a Moderate Area, Then the State Must Adopt All Reasonably Available Control Measures.

Section 189(a)(1)(B) of the CAA anticipates that not all Moderate nonattainment areas will be able to demonstrate attainment by the attainment date, and it incorporates the concept of an "impracticability demonstration" for such areas.[97] Commenters on this issue stated that nowhere in the statute is there an explicit exception for those measures that collectively are determined to be "ineffective in reducing ambient $PM_{2.5}$ levels." Further, they suggested that such an approach would enable the most polluted areas to exempt sources that individually are small by some arbitrary test when in other cleaner areas such sources would be required to reduce emissions because they collectively would advance attainment. Other commenters emphasized that sources located in such Moderate areas should still be subject to the regular

[97] The concept of an "impracticability demonstration" is established in CAA section 188(b), which addresses reclassifying Moderate $PM_{2.5}$ areas to Serious. Section 188(b)(1) of the CAA describes the EPA's discretionary authority to reclassify an area upon a determination that an area cannot practicably attain by the Moderate area attainment date. More relevant to this determination, however, CAA section 189(a)(1)(B) specifically provides for submission of a demonstration addressing this concept in the case of Moderate areas that cannot attain the NAAQS by the applicable attainment date.

review process for determining whether potential control measures are not technologically or economically feasible.

After considering comments on the two options described in the proposal, the EPA has decided to keep the policy in this final rule consistent with past guidance in the General Preamble. This guidance stated that "the EPA believes it is reasonable for all available control measures that are technologically and economically feasible to be adopted for areas that do not demonstrate attainment [by the applicable attainment date]."[98] The EPA believes that this interpretation is compelled by the language of CAA section 189(a)(1)(C), which separately requires a state to submit a Moderate area attainment plan and meet the RACM and RACT requirement, even if the state submits a demonstration showing that with those measures it cannot attain the NAAQS by the applicable attainment date.

Under this approach, if the state had an approved precursor demonstration (as described in Section III of this preamble) showing that a particular precursor does not have a significant contribution on $PM_{2.5}$ levels that exceed the standard, then it would not need to adopt control measures for that particular precursor. The state then would be required to identify potential control measures for sources in the area that emit direct $PM_{2.5}$ and any remaining significant precursors. Of these potential measures, the state would determine which would be technologically feasible to implement. Then the state would identify which of the technologically feasible measures are economically feasible to implement.

Subpart 4 requires that Moderate areas that cannot or do not meet the Moderate area attainment date be reclassified as Serious nonattainment areas, in which case sources in the areas

[98] 57 FR 13498 (April 16, 1992), at page 13544.

are then subject to BACM and BACT requirements. In the General Preamble, the EPA indicated that "it may be reasonable, in some limited circumstances, for states to consider the compatibility of RACM and RACT with the BACM and BACT that will ultimately be implemented under the Serious area plans for those areas."[99] Furthermore, for such areas that do not meet the Moderate area attainment date, the EPA indicated that "in the case of RACM for area sources, EPA anticipates that any future implementation of BACM for these sources will be additive to, and hence compatible with, RACM. This is because BACM will generally consist of a more extensive implementation of the RACM measures… Since EPA anticipates that RACM and BACM for these sources will be compatible, the SIP's (*sic*) for these areas should reflect the application of available control measures to existing sources in moderate nonattainment areas as determined by the analysis described…for RACM."[100] Thus, the state should assess the remaining set of technologically and economically feasible measures with regard to the compatibility of implementing RACM/RACT in the near term in a way that supports addressing BACM/BACT for such sources when the area is reclassified to Serious.

The General Preamble also provided guidance for stationary source controls in this situation: "In many instances, the installation of pollution controls representing RACT may involve substantial capital expenditures. In the event that BACT is later required for those sources, this may require controls significantly incompatible with those recently installed as RACT, largely wasting those recent expenditures. Under such circumstances, the installation of controls in the first round of SIP planning would be unreasonable." Accordingly, SIPs for the Moderate areas that cannot practicably attain need not require major changes to the control

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[99] *Ibid. at* 13544.
[100] *Ibid.*

systems for specific stack and process sources where a State reasonably demonstrates that such changes will be significantly incompatible with the application of BACT-level control systems. A State's demonstration should include, for example, showing what the State believes are RACT and BACT for the source, and why they are significantly incompatible.

The EPA believes that in such cases, a state should consider selecting and implementing controls that may qualify as BACM or BACT in a Moderate nonattainment area as part of their RACM and RACT analysis. Early adoption of controls that would constitute BACM or BACT could be more efficient and could further the objectives of attaining the NAAQS expeditiously to protect public health and the environment.

e. Comments and Responses.

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

8. RACM and RACT and Additional Reasonable Measures Submission Requirements

a. Summary of Proposal.

The proposal described a set of submission requirements for RACM/RACT and additional reasonable measures.

b. Final Rule.

The requirements in the final rule remain very similar to those that were included in the proposal. To ensure that attainment plan submissions contain the necessary supporting information to enable the EPA to review and approve a state’s evaluation and selection of measures that constitute RACM and RACT in a given nonattainment area, the EPA requires under the authority of section 301(a) of the CAA that a state must submit the following information as part of its submission:

1) A list of all sources and activities in the nonattainment area that emit direct $PM_{2.5}$ or any $PM_{2.5}$ precursor (for multi-state nonattainment areas, this would include source categories, sources and activities from all states which make up the area). *See* 40 CFR 51.1008(a)(1).

2) For each source or activity in the nonattainment area, an inventory of direct $PM_{2.5}$ emissions and emissions of all $PM_{2.5}$ precursors, and a comprehensive list of potential control measures considered by the state for the nonattainment area. *See* 40 CFR 51.1009(a)(2). If the state submitted a precursor demonstration that was approved by the EPA, the state would not be required to submit a list of sources and potential measures to control emissions of the relevant precursor from the stationary sources addressed by the demonstration (i.e., all sources for a comprehensive precursor demonstration, or major sources for a major source precursor demonstration). *See* 40 CFR 51.1006(a)(1) and (2). Note that the emissions inventory would still need to include all sources of the relevant precursor. *See* 40 CFR 51.1008(a)(1).

3) For each potential control measure considered by the state but eliminated from further consideration due to a determination by the state that the control measure or technology was not technologically feasible, a narrative explanation and quantitative or qualitative supporting documentation to justify the state's conclusion. *See* 40 CFR 51.1009(a)(3).

4) For each technologically feasible emission control measure or technology, a determination of whether the measure is economically feasible must be included, with narrative explanation and quantitative supporting documentation to justify the state's conclusion. *See* 40 CFR 51.1009(a)(3). The following additional information relevant to economic feasibility should be included as necessary to justify the determination: (a) the

control efficiency by pollutant; (b) the possible emissions reductions by pollutant; and, (c) the estimated cost per ton of pollutant reduced.

5) For each technologically and economically feasible emission control measure or technology, the date by which the technology or measure could reasonably be implemented, in whole or in part. *See* 40 CFR 51.1009(a)(4)(i)-(ii).

Each of these elements will provide information needed by the EPA to evaluate whether the state is meeting the statutory requirements for an attainment plan, and in particular meeting the statutory requirement for states to implement RACM and RACT on sources within the nonattainment area. The EPA recognizes that the base year emissions inventory for the area that the state submits in conjunction with its attainment plan will likely contain some of the information proposed to be required under the first two items in this list. However, the EPA is finalizing a requirement for emissions inventory information specifically relevant to the RACM and RACT element of the state's attainment plan in order to ensure that the EPA or any other party can appropriately evaluate the state's RACM and RACT analysis.

c. Comments and Responses.

Comment: Some commenters supported the general submission requirements because in some cases RACM/RACT demonstrations fail to provide the information necessary for the EPA to reasonably conclude that these requirements have been met and are supported by a systematic analysis.

Response: The EPA agrees with the commenters and the final rule generally tracks the proposal.

9. Criteria for Effective Regulations to Implement RACM and RACT and Additional Reasonable Measures

a. Summary of Proposal.

The preamble to the proposed rule described the four main criteria for effective control measure regulations: such regulations must be quantifiable, enforceable, replicable and accountable.

b. Final Rule.

The guidance in this preamble to the final rule remains very similar to what was proposed. After a state has identified a particular control measure as RACM or RACT or additional reasonable measure for a particular nonattainment area, it must then implement that measure through a legally enforceable mechanism that will be included in the SIP (*e.g.*, a state rule that the EPA will approve as a part of the federally enforceable SIP for the state). The EPA is proposing that in order for the EPA to be able to approve any such measure as part of the SIP, the state would have to provide information to meet the following four criteria. These criteria are similar to the criteria finalized as part of the remanded 2007 $PM_{2.5}$ Implementation Rule.

First, the base year emissions from the source or group of sources to which the control measure applies and the future year projected emissions from those sources once controlled must be quantifiable so that the projected emissions reductions from the sources can be attributed to the specific measures being implemented. It is important that the emissions from the source category in question are accurately represented in the base year inventory so that emissions reductions are properly calculated. In particular, it is especially important to ensure that both the filterable and condensable components of direct $PM_{2.5}$ emissions are accurately represented in the base year.

Second, the control measures must be enforceable. This means that they must specify clear, unambiguous and measurable requirements. The measurable requirements for larger

emitting facilities must include periodic source testing, monitoring or other viable means to establish whether the affected source meets the applicable emission limit. Additionally, to verify the continued performance of the control measure, specific emissions monitoring programs appropriate for the type of control measure employed and the level of emissions must be included to verify the continued performance of the control measure. The control measures and monitoring program must also have been adopted according to proper legal procedures. Note that if measures are found to be technically and economically feasible for reducing condensable $PM_{2.5}$ emissions as well as filterable $PM_{2.5}$ emissions from a source, the state will need to adopt a new emission limit for the source that accounts for both the filterable and condensable portions, and includes requirements for ensuring compliance using condensable $PM_{2.5}$ source test methods updated in 2011.[101]

In response to a comment on this criterion, the EPA clarifies that an enforceable regulation for a CAA program must be enforceable by the EPA, the state, and citizens. By taking action to approve emissions limitations and related provisions into the SIP, the EPA thereby makes those emission limitations a federally enforceable component of the SIP that the state, the EPA, and citizens can enforce thereafter in the event of a violation. SIP provisions that effectively preclude enforcement of violations by the EPA or citizens, whether through impermissible exemptions or other SIP provisions that function to bar effective enforcement, are not acceptable.

Third, the results of application of the control measures must be replicable. This means that where a rule contains procedures for interpreting, changing or determining compliance with

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[101] *See* 75 FR 80118 (December 21, 2010), revisions to test methods for measuring condensable PM emissions from stationary sources (Method 202).

the rule, the procedures are sufficiently specific and objective so that two independent entities applying the procedures would obtain the same result.

Fourth, the control measures must be accountable. This means, for example, that source-specific emission limits must be permanent and must reflect the assumptions used in the attainment plan for the area, including the modeling conducted in conjunction with the attainment demonstration. It also means that the attainment plan must establish requirements to track emissions changes at sources and provide for corrective action if emissions reductions are not achieved according to the plan.

c. Comments and Responses.

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

10. Determination of RACM and RACT and additional reasonable measures in multi-state nonattainment areas

a. Summary of Proposal.

The proposal included several proposed recommendations about the development of control measures by states with multi-state nonattainment areas.

b. Final Rule.

The guidance in the final preamble remains very similar to what was proposed. States in multi-state nonattainment areas will need to consult with each other on appropriate control measures for the shared nonattainment area. The agency anticipates that states could decide upon RACM and RACT and additional reasonable measures that differ from state to state in a shared nonattainment area, based upon each state's determination of the most effective strategies given the relevant mixture of sources and potential controls in the respective states' portions of a

shared nonattainment area. As long as each state can adequately demonstrate that its chosen attainment strategy, including its selection and adoption of RACM and RACT and additional reasonable measures, will provide for meeting RFP requirements and for attainment of the NAAQS as expeditiously as practicable for the nonattainment area at issue, the EPA anticipates being able to approve individual state plans that may elect to control a different mix of sources or to implement different controls, under the proper circumstances. Nevertheless, in evaluating RACM and RACT and additional reasonable measures for a particular nonattainment area, states must consider potential reasonable control measures developed for other areas or other states, and particularly for other portions of an interstate nonattainment area. In addition, states in multi-state nonattainment areas must evaluate whether the reasonable measures each state may have identified as not being necessary for attainment could collectively advance the attainment date for the area by at least 1 year. The EPA may consider such measures in assessing the approvability of each state's individual attainment plan for a multistate nonattainment area.

c. Comments and Responses.

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

11. Environmental Justice Considerations in Developing the Attainment Plan Control Strategy for a Moderate $PM_{2.5}$ Nonattainment Area

a. Summary of Proposal.

The proposal provided guidance about environmental justice considerations in developing the attainment plan control strategy for a Moderate area.

b. Final Rule.

The guidance remains very similar to what was proposed. Current air quality data indicate that the more severe $PM_{2.5}$ nonattainment areas contain a high population of people with low socio-economic status, who are among the most at-risk for adverse health effects from exposure to $PM_{2.5}$. As part of its EJ2020 Action Agenda, the EPA is committed to making progress on improving air quality in communities with high particulate pollution. The EPA, therefore, strongly urges states to consider environmental justice concerns with respect to any control measures they have identified as potential RACM or RACT or additional reasonable measures in an area, particularly to the extent that control measures that a state may be considering are otherwise approximately equal (in terms of technological and economic feasibility) but unequal with respect to their direct or indirect impacts on overburdened populations.[102] In such cases, the EPA encourages the state to prioritize imposition of the control measures that will result in the least possible burden and greatest degree of health protection for overburdened populations in the nonattainment area. Section XI of this preamble discusses possible approaches for states to address environmental justice concerns associated with implementation of the $PM_{2.5}$ NAAQS in their SIP development process and attainment plans.

[102] The term "overburdened populations" is defined in the EPA's "Plan EJ 2014" to describe the minority, low-income, tribal, and indigenous populations or communities in the U.S. that potentially experience disproportionate environmental harms and risks as a result of greater vulnerability to environmental hazards. This increased vulnerability may be attributable to an accumulation of both negative and lack of positive environmental, health, economic or social conditions within these populations or communities. For more information on Plan EJ 2014, *see https://www.epa.gov/environmentaljustice.*

c. Comments and Responses.

Any comments received on this section are addressed in the Response to Comments document found in the docket for this action.

E. Modeling for Attainment Demonstrations

1. Demonstrations for Moderate Areas

a. *Summary of Proposal*.

Section 189(a) of the CAA generally requires a state with a designated Moderate nonattainment area to submit an attainment plan for such area. Section 189(a)(1)(B) of the CAA requires the state to submit an attainment demonstration including air quality modeling to establish either: (i) that the area will attain the relevant NAAQS by the applicable attainment date; or (ii) that it is impracticable for the area to attain the relevant NAAQS by the applicable attainment date. For Moderate nonattainment areas, the attainment date is as expeditiously as practicable, but no later than the end of the sixth calendar year after designation as nonattainment. The EPA therefore proposed to require all Moderate nonattainment areas to submit either an attainment demonstration which includes air quality modeling which establishes that the area will attain the $PM_{2.5}$ NAAQS by the applicable attainment date, or an impracticability demonstration which documents that the area will not attain the NAAQS by the applicable attainment date. The EPA proposed that the impracticability demonstration must also include air quality modeling, but also asked for comments on an alternative option that would not require air quality modeling as part of an impracticability demonstration. The EPA also proposed to allow states to fulfill the statutory modeling requirement through either locally generated photochemical and/or dispersion modeling or, with proper justification, appropriate regional or national modeling.

An attainment demonstration is a plan that provides an explanation of how a state will attain the $PM_{2.5}$ NAAQS by the applicable attainment date in a particular nonattainment area. [103] The EPA proposed that the demonstration must contain: (i) technical analyses such as base year and future year modeling of emissions which identifies sources and quantifies their emissions that are contributing to violations of the $PM_{2.5}$ NAAQS; and (ii) analyses of future year emissions reductions and air quality improvement resulting from existing (i.e., already-adopted or "on the books") national, regional and local programs, and potential new local measures needed for attainment, including RACM and RACT controls for the area.

The EPA further proposed that each state with a Moderate nonattainment area must submit an attainment plan with an attainment demonstration that includes analyses supporting the state's determination of its proposed attainment date. In all cases, the state must show that the area will attain the NAAQS as expeditiously as practicable, but not later than the sixth calendar year after designation. In order to establish that the attainment date is as expeditious as practicable, the state must explain why the control measures adopted in the attainment plan provide for the most expeditious attainment and, in particular, must explain why any cumulative group of reasonable and available control measures that the state elected not to adopt will not collectively advance the attainment date by at least 1 year.

b. Final Rule. As required by CAA section 189(a)(1)(B), the EPA is finalizing a requirement for states with Moderate nonattainment areas to submit a demonstration to establish either: (i) that the area will attain the relevant NAAQS by the applicable attainment date; or (ii)

[103] An area is designated nonattainment for either the annual $PM_{2.5}$ NAAQS or the 24-hr $PM_{2.5}$ NAAQS or both. The attainment demonstration should show that the area is attaining the form of the NAAQS for which they have been designated nonattainment.

that it is impracticable for the area to attain the relevant NAAQS by the applicable attainment date.

As proposed, attainment demonstrations must include analyses (including air quality modeling) supporting the state's determination of its proposed attainment date. In all cases, the state must show that the area will attain the NAAQS as expeditiously as practicable, but not later than the sixth calendar year after designation. The demonstration must include implementation of all measures identified as RACT/RACM plus additional reasonable measures, as necessary, for expeditious attainment. In order to establish that the attainment date is as expeditious as practicable, the state must explain why the control measures adopted in the attainment plan provide for the most expeditious attainment and, in particular, must explain why the cumulative group of reasonable and available control measures that the state elected not to adopt will not collectively advance the attainment date by at least 1 year. *See* 40 CFR 51.1009(a)(4).

The EPA is not finalizing a regulatory requirement for air quality modeling to be included as part of an impracticability demonstration. *See* 40 CFR 51.1009(a)(4). Since all nonattainment areas will have modeling requirements associated with their attainment demonstration, the EPA believes it is likely that modeling will be submitted in support of impracticability demonstrations. However, it may be possible in some cases to support an impracticability demonstration with ambient $PM_{2.5}$ data and other relevant non-modeling information. For example, the ambient data in a nonattainment area may be so far above the NAAQS, and the reasonable and available controls (i.e. RACM/RACT and additional reasonable measures) so limited, that it is clearly impossible (and thus also impracticable) for the area to

attain by the Moderate area attainment date.[104] In order to support this type of demonstration, the state must show that, even if all reasonable controls (i.e. RACM or RACT and additional reasonable measures) were implemented, the state could not attain the NAAQS within the statutory timeframe for a Moderate area.

The EPA continues to assume that in most cases photochemical grid modeling will be required to demonstrate attainment with the $PM_{2.5}$ NAAQS. However, the EPA recognizes that more simplistic modeling techniques (such as dispersion, receptor, and/or box models) may suffice to demonstrate that an area will attain the NAAQS, especially in areas that are dominated by primary $PM_{2.5}$ emissions (*e.g*. residential wood smoke).

c. Comments and Responses. Comment: Some commenters supported the EPA's proposal to require modeling to demonstrate that attainment is not practicable. The commenters stated that such an interpretation flows logically from the Act's requirement in section 189(a)(1)(B) that attainment demonstrations be supported by modeling. One commenter supported the alternative approach described in the proposal in which air quality modeling would not be required for a Moderate area impracticability demonstration.

Response: After further consideration of this issue, the EPA has determined that modeling need not be a regulatory requirement to support an impracticability demonstration. We note that CAA section 189(a)(1)(B)(i) includes the parenthetical "including air quality modeling" which clearly makes modeling a statutory requirement for moderate area attainment demonstrations. However, the same parenthetical statement is absent from CAA section

[104] Pursuant to CAA section 188(b)(1)(B), upon the EPA determination that attainment by the Moderate date is impracticable, the EPA shall reclassify the area as Serious within 18 months after the Moderate area SIP due date.

189(a)(1)(B)(ii), which addresses an impracticability demonstration. While we believe that most impracticability demonstrations will indeed be supported by air quality modeling, there are cases where a modeling demonstration may not be needed. In addition, the EPA believes the burden of proof for an impracticability demonstration is logically lower than for an attainment demonstration because submission of an impracticability demonstration also requires reclassification to a serious nonattainment area and the accompanying more stringent regulatory requirements (e.g. BACT/BACM). The area is still required to meet RACT/RACM requirements and will also be required to submit a serious area attainment demonstration, which will necessarily need to include air quality modeling.

Comment: Some commenters agreed with the EPA that states should be afforded flexibility to fulfill the statutory modeling requirement through appropriate regional or national modeling.

Response: The EPA agrees that, where appropriate, regional and/or national scale air quality modeling could be sufficient to fulfill the statutory modeling requirement for attainment demonstration modeling. However, as with any attainment demonstration, the modeling must be shown to be appropriate for the nonattainment area, including good model performance, appropriate emissions and meteorological inputs, and consideration of emissions control strategies. It should be noted, however, that it may be difficult to fulfill other CAA requirements (such as emissions inventory, RACM, RFP, establishing motor vehicle emissions budgets for transportation conformity purposes, etc.) using regional or national modeling data. In order to fulfill those requirements, states may need more detailed data for sources in their nonattainment area compared to what is available through regional or national modeling.

Comment: Some commenters stated that, as the proposal stands, if states wish to preclude RACT/RACM for any sources in the nonattainment area, they must do modeling for the year preceding the attainment year to demonstrate early attainment; this would require modeling for 3 years, rather than 2 years.

Response: Although a RACM analysis is required, and eliminating potential control measures requires an assessment of whether the measures collectively could advance the attainment date by 1 year, EPA did not propose any specific modeling requirements for the RACM analysis. There are several components to the analysis. First, potential emissions reductions need to be assessed. Then, an assessment of whether those emissions reductions can advance attainment by at least a year needs to be completed. One way to minimize the number of future modeled years is to establish (through sensitivity modeling) a relationship between $PM_{2.5}$ and $PM_{2.5}$ precursor emissions reductions and $PM_{2.5}$ concentrations in the nonattainment area. The established relationship can be used to estimate whether a particular set of emissions reductions will be able to advance the attainment date by at least a year. Also, in some cases, the emissions reductions identified through the RACM analysis may be relatively small (as a percentage of area-wide emissions) that a modeling analysis is not needed to show that the attainment date cannot be advanced.

2. Available Modeling Guidance for Demonstrating Attainment

a. *Summary of Proposal*. The EPA proposed that attainment demonstrations should be consistent with the procedures for modeling $PM_{2.5}$ as described in the EPA's "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for

Ozone, $PM_{2.5,}$ and Regional Haze"[105] as well as the Guideline on Air Quality Models (40 CFR part 51, Appendix W).

The $PM_{2.5}$ attainment demonstration modeling guidance (hereafter referenced as the "modeling guidance") describes how states can apply air quality models to generate results needed to demonstrate attainment. Models are used to test whether control measures in an attainment plan to be adopted into a SIP are likely to result in attainment of the relevant standards. The attainment demonstration modeling guidance recommends a modeled attainment test for the annual and 24-hour $PM_{2.5}$ NAAQS that uses a combination of ambient $PM_{2.5}$ and $PM_{2.5}$ species data and modeled $PM_{2.5}$ concentrations to estimate future year air quality. In the recommended attainment test the state applies the test at each $PM_{2.5}$ ambient monitor location within or near a designated nonattainment area. Models are used in a relative sense to estimate the response of measured air quality to future changes in emissions. Future air quality is estimated by multiplying recent monitored $PM_{2.5}$ values by the modeled relative response (percent change) to projected future changes in emissions. If the future design value at all monitoring locations in the nonattainment area does not exceed the concentration of $PM_{2.5}$ specified in the NAAQS, the area is projected to attain the NAAQS.

b. Final Rule. In the final rule, EPA is continuing to recommend that attainment demonstrations should be consistent with the procedures for modeling $PM_{2.5}$ as described in the $PM_{2.5}$ attainment demonstration modeling guidance and Appendix W. The modeling guidance describes how states can apply air quality models to generate results needed to demonstrate attainment. These recommendations include developing a conceptual description of the problem

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[105] The $PM_{2.5}$ attainment demonstration modeling guidance can be found at the following Web site: *http://www3.epa.gov/ttn/scram/guidance_sip.htm*.

to be addressed; developing a modeling/analysis protocol; selecting an appropriate model to support the demonstration; selecting appropriate meteorological episodes or time periods to model; choosing an appropriate area to model with appropriate horizontal/vertical resolution; generating meteorological and air quality inputs to the air quality model; generating emissions inputs to the air quality model; and evaluating performance of the air quality model. After these steps are completed, the state can apply a model to simulate effects of future year emissions and candidate control strategies.

The EPA has updated the 2007 $PM_{2.5}$ modeling guidance to include additional information related to the 2012 $PM_{2.5}$ NAAQS and associated monitoring requirements.[106] The main components of the modeling guidance and the modeled attainment test have not changed. Additional information has been added to address near-road monitoring sites and other information that was not available when the guidance was first released in 2007.

The modeling guidance continues to recommend a relative attainment test for both the annual and 24-hour $PM_{2.5}$ NAAQS. The EPA is not recommending a specific model for use in the attainment demonstration for the $PM_{2.5}$ NAAQS. At present, there is no single model that has been extensively tested and shown to be clearly superior to other available models. The current modeling guideline, 40 CFR part 51, appendix W, does not identify a preferred model for use in attainment demonstrations of the NAAQS for $PM_{2.5}$. Thus, states may choose from several alternatives.

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[106] *See* updated guidance at *https://www3.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf*: "Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, $PM_{2.5}$, and Regional Haze," December 2014.

The EPA has developed software to perform both the annual and 24-hour $PM_{2.5}$ attainment test (including interpolating PM species data where necessary). The current software is called the Software for the Modeled Attainment Test- Community Edition (SMAT-CE).[107] The software is provided as a way to make it relatively easy for states to apply the recommended modeled attainment test(s). However, states are not required to use SMAT-CE and can develop their own post-processing software as necessary.

The modeling guidance continues to describe the opportunity for states to supplement their modeling with a "weight of evidence" demonstration. States may use other information and analyses, in addition to the modeled attainment test to estimate whether future attainment of the NAAQS in an area is likely. Other analyses may include, but are not limited to, emissions trends, ambient data trends and analyses, other modeling analyses, and documentation of other non-modeled emissions control strategies, including voluntary programs.

The application of air quality models requires a substantial effort by state and local agencies. Therefore, states should work closely with their EPA regional office in executing each step of the modeling process. By doing so, it will increase the likelihood of the EPA's approval of the state demonstration submitted at the end of the modeling and overall attainment plan development process.

c. Comments and Responses. Comment: Several commenters questioned the ability of the current most common photochemical models to accurately model how the $PM_{2.5}$ precursors impact overall $PM_{2.5}$ concentrations. They raise particular concerns about ammonia emissions

[107] SMAT-CE replaced the Modeled Attainment Test Software (MATS) in January 2016. SMAT-CE performs the same functionality as MATS, but is open source, runs faster, and is more stable than its predecessor.

and the ability of models to predict $PM_{2.5}$ formation from ammonia precursor emissions. The commenters stated that emissions inventories necessary for such modeling, as well as the tools used to measure those emissions, remain uncertain and are sometimes inaccurate; e.g., emission rates are too often based on unreliable data, due to either lack of representative information or technical issues associated with test methods. Some commenters stated that these concerns are particularly salient here because the $PM_{2.5}$ SIP Requirements Proposal requires that states account for new precursors, including VOCs and ammonia.

Response: The EPA disagrees with the commenters' assertion that emissions inventory and modeling tools are insufficient to estimate $PM_{2.5}$ concentrations and the predicted change in $PM_{2.5}$ due to changes in $PM_{2.5}$ emissions and $PM_{2.5}$ precursors. While there will always be uncertainty in emissions inventories and modeling, photochemical models of $PM_{2.5}$ concentrations, including secondary formation through chemistry, have been used in the scientific and regulatory community for over 30 years. State attainment demonstration modeling has been performed by numerous states over the last 10+ years to support the 1st round of $PM_{2.5}$ SIPs that were due in 2007. In addition, the EPA has used photochemical modeling of $PM_{2.5}$ to support numerous regulatory rulemakings over the last decade.

The technical tools to perform photochemical modeling are well established and have been improved almost continuously over many years. New versions of the CMAQ and CAMx models with numerous science updates are released every 1 to 2 years. National emissions inventories that include primary $PM_{2.5}$ and all scientific precursors (SO_2, NO_x, VOC and ammonia) have existed since the NEI for 2002. The NEI is released every 3 years with methodological improvements with every release.

In addition, the commenters refer to VOC and ammonia as "new precursors," which is not accurate. VOC and ammonia have always been "scientific" $PM_{2.5}$ precursors, and as such have always been inventoried and modeled with chemistry in $PM_{2.5}$ photochemical models. The only thing "new" is that VOC and ammonia are now assumed to be presumptive $PM_{2.5}$ precursors. However, even though the previous implementation rule did not assume that VOC and ammonia were default precursors, all photochemical modeling of $PM_{2.5}$ has always included VOC and ammonia emissions and the resultant chemical formation of ammonium sulfate, ammonium nitrate, and secondary organic carbon.

The commenters were concerned that model errors in the formation of $PM_{2.5}$ from ammonia sources would impose an unreasonable regulatory burden on sources of ammonia such as animal agriculture. Even though there may be general uncertainty in ammonia inventories, it is not clear how those uncertainties would lead to an unreasonable regulatory burden on any emissions sources in particular. Every modeling application in support of an attainment demonstration must be shown to adequately represent the emissions, chemistry, and $PM_{2.5}$ concentrations in the nonattainment area. Ambient measurements of $PM_{2.5}$ and precursors are used in a model performance evaluation to demonstrate that the modeling system is appropriate to use to determine the sensitivity of $PM_{2.5}$ mass to emissions changes. In addition, all SIPs are required to undergo a public comment process where specific emissions and/or modeling concerns can be raised to the state. And then, after review of the SIP submission by EPA, all approvals or disapprovals of attainment SIPs go through a notice and comment rulemaking process. There are therefore numerous opportunities for both industry and the general public to participate in the SIP development process. States are expected to use the appropriate tools and the best information available to demonstrate how they will attain the $PM_{2.5}$ NAAQS by the

attainment date. The EPA believes that the appropriate tools are available to perform the modeling needed for an attainment demonstration.

3. Demonstrating Attainment at Near-road Monitors

a. *Summary of Proposal*. The 2012 $PM_{2.5}$ NAAQS final rule contains new requirements for operating near-road monitors in the largest metropolitan areas.[108] The first set of monitors was required to be in place by January 1, 2015. Some of the near-road monitors began operation prior to 2015. However, none of the monitors will have the requisite 3 years of monitoring data that can be used to calculate a $PM_{2.5}$ design value until 2017 at the earliest. Therefore, these data were not used for the initial designations for the 2012 $PM_{2.5}$ NAAQS (finalized in December 2014) and in most nonattainment areas, there will be less than 3 years' worth of data available when the initial attainment demonstrations for Moderate nonattainment areas are due in 2016. As a result of this timing, the EPA proposed that the initial set of Moderate area attainment demonstrations will not need to include projected design values for near-road monitors. But when 3 or more years' worth of complete ambient data are available at near-road monitors, states will need to address those monitors in their attainment demonstrations and will need to include a demonstration that those monitors will attain the NAAQS by the applicable statutory attainment date.

b. Final Rule. For the final rule, the EPA maintains the policy of not requiring the use of ambient air quality data in a modeled $PM_{2.5}$ attainment demonstration unless there is at least one complete design value of data available (generally 3 complete years of data). This applies to both near-road and other $PM_{2.5}$ ambient monitoring data. Some states may have installed their

[108] 78 FR 3283.

monitors well before the January 1, 2015 deadline and may therefore have complete data before the SIP deadline. In addition, some attainment demonstrations may be submitted after the statutory deadline. Because of the varying monitor installation dates, the use of near-road monitoring data in attainment demonstrations depends on the timing of the attainment demonstration submission relative to the installation date of the monitor(s). Ambient data with sufficient completeness to calculate a design value may not be ignored in an attainment demonstration. Such data can be addressed either in the attainment demonstration analysis of ambient monitors or as part of an unmonitored area analysis (*see* the next section), as appropriate.

The revised $PM_{2.5}$ modeling guidance document includes procedures for applying a dispersion model or a combination of photochemical grid models and dispersion modeling to demonstrate attainment at monitors with large primary $PM_{2.5}$ concentration gradients. Depending on the nature of the ambient data in a particular area, it may be appropriate to treat near-road monitors as high concentration gradient locations. However, in other cases, near-road monitors may have little or no gradient compared to other nearby monitors. Therefore, the appropriate treatment of near-road monitors in attainment demonstrations should be evaluated on a case-by-case, depending on the facts and circumstances in each nonattainment area.

c. Comments and Responses. Comment: Some commenters stated the EPA's proposal to excuse areas from having to include projected design values for near-road monitoring locations promises to undermine the likelihood of success for attainment demonstrations. The commenters stated the EPA's blanket waiver for near-road data has no rational basis and that just because such monitors were not required before January 1, 2015, does not mean that areas did not have them in place before then. The commenters stated the EPA should at least clarify that if an area

has 3 years of near-road monitoring data, it should use such data in its attainment modeling. The commenters stated this would be particularly important, for example, if an area is late in preparing its demonstration.

Response: The EPA agrees there should not be a "blanket waiver" for the use of near-road monitoring data in attainment demonstrations that are due in 2016 or thereafter. The statements in the proposal referenced the fact that the near-road monitors were not required to be in place before January 1, 2015. This makes it unlikely that sufficient data from these monitors will be available to be considered in attainment demonstrations that are due in 2016. However, if complete data are available at near-road monitors during the development of the attainment demonstration, the data should be considered as appropriate (similar to any other $PM_{2.5}$ monitoring data). Since the near-road $PM_{2.5}$ monitoring network is relatively new, there may not be 3 years of complete data in time to be considered in the upcoming attainment demonstrations. In addition, the base modeling year of the attainment demonstration may predate the startup date of the near-road monitor(s). In this case, it may be possible to consider the near-road data in the attainment demonstration, but the recommended default projection methodology may not be applicable (since the time period of the near-road data may not correspond to the 5 year time period centered about the base modeling year, as recommended in the modeling guidance). Additionally, near-road $PM_{2.5}$ monitors are only required in the 27 largest metropolitan areas of the country. Some $PM_{2.5}$ nonattainment areas may not have any near-road monitoring sites. States should consult with the appropriate EPA regional office to determine the best way to treat near-road data in their attainment demonstration.

4. Demonstrating Attainment in Unmonitored Areas

a. *Summary of Proposal*. The 2007 $PM_{2.5}$ modeling guidance describes a recommended "relative" attainment test that is based on showing attainment at ambient monitoring locations. The guidance also recommends that states conduct further analyses based on modeling results to determine whether there are unmonitored areas that merit additional analysis or investigation. In order to clarify the statutory and rule requirements of a modeled attainment demonstration, the EPA proposed four options for demonstrating attainment in unmonitored areas in an attainment demonstration.

Option 1 would require the attainment demonstration modeling to demonstrate attainment at ambient monitoring locations. There would be no requirement to specifically examine attainment in unmonitored areas. Option 2 would require modeling to demonstrate attainment at ambient monitoring locations and in unmonitored areas within the nonattainment area. Enforceable emissions reductions would be required to eliminate any potential future year NAAQS violations in all locations within the nonattainment area (including unmonitored areas). Option 3 would require modeling to demonstrate attainment at ambient monitoring locations and in unmonitored areas within the nonattainment area. However, rather than requiring states to impose additional enforceable emissions reductions in the SIP to address potential violations in unmonitored areas, states would be required to use the unmonitored area analysis results to develop an assessment of the likelihood of violations in unmonitored areas. The assessment would be used to evaluate the need for additional controls and/or could be used to inform the ambient monitoring plan (the need to add additional monitors or move existing monitors). Option 4 would require modeling to demonstrate attainment at ambient monitoring locations and recommend the analysis of unmonitored areas within the nonattainment area. This differs from

Option 3 in that there would be no rule requirement to perform an unmonitored area analysis. But the submission of an unmonitored area analysis would be still be recommended, especially in areas with a relatively sparse $PM_{2.5}$ monitoring network or in locations where information such as modeling data, emissions inventories or non-FEM monitoring data (such as from special purpose monitors or saturation monitoring studies) may indicate potential high $PM_{2.5}$ concentrations in areas that are currently unmonitored.

b. Final Rule. The EPA is finalizing proposed Option 4. This option requires states to show attainment at all current and recent monitoring locations. States will not be required to provide an unmonitored area analysis as a mandatory element of each attainment demonstration. However, an unmonitored area analysis can provide useful information about $PM_{2.5}$ concentrations and gradients in the nonattainment area and therefore the EPA recommends that all attainment demonstrations should contain an unmonitored area analysis. The EPA encourages states to use information available to them to consider what, if any, impacts may be occurring in unmonitored areas. States can evaluate the need to perform an unmonitored area analysis by using available information such as modeling data, emissions inventories, or non-FEM monitoring data (such as from special purpose monitors or saturation monitoring studies) to indicate the potential high $PM_{2.5}$ concentrations in areas that are currently unmonitored. An unmonitored area analysis is strongly recommended where the state and/or the EPA has reason to believe that potential violations may be occurring in unmonitored areas, or other available information indicates that further analysis is warranted. The EPA will consider whether the state has adequately addressed all available information about potential exceedances of the NAAQS in unmonitored areas when determining whether the plan can be approved.

The EPA is requiring an attainment demonstration approach that relies primarily on existing monitoring sites and modeling to project attainment in future years. This approach to evaluating monitored and unmonitored areas is consistent with how EPA determines whether an area meets the $PM_{2.5}$ NAAQS for purposes of designations and redesignations. As discussed in Section II of this preamble, the EPA promulgates designations for $PM_{2.5}$ NAAQS nonattainment areas based primarily on ambient data measured at FRM and FEM monitors.[109] Although the EPA considers other information for purposes of evaluating areas with sources that contribute to those monitored violations for inclusion within the nonattainment area boundaries, the fundamental basis for designating an area as nonattainment for a $PM_{2.5}$ NAAQS is the presence of one or more FRM or FEM monitors with data showing violations of the NAAQS. Similarly, determinations of attainment of the $PM_{2.5}$ NAAQS for purposes of redesignation actions are based primarily on monitored data. When all FRM and FEM monitors in a nonattainment area measure attainment of the $PM_{2.5}$ NAAQS, the state is eligible to submit a redesignation request for the area, assuming that it has complied with all other applicable requirements for purposes of redesignation. Specifically, the EPA's approval of a redesignation request is subject to meeting the requirements of CAA section 107(d)(3)(E). Among those requirements is that the area has attained the NAAQS. For the $PM_{2.5}$ NAAQS, this determination is based on ambient data measured at the FRM and FEM monitors in the area in question.

In addition, the ''relative'' attainment test for $PM_{2.5}$ attainment demonstrations uses FRM or FEM ambient monitoring data, combined with future year modeled percentage changes in $PM_{2.5}$ concentrations to project future year design values. Since the attainment test relies on

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[109] A monitor must have 3 years of quality assured ambient data available to be used to calculate a $PM_{2.5}$ design value and determine compliance with the NAAQS.

ambient monitoring data, an analysis of future year concentrations in unmonitored areas can only be accomplished by interpolating ambient data to a particular location where there is no existing monitor or recent monitoring data. Therefore, in the context of an attainment demonstration, the projection of future year $PM_{2.5}$ concentrations in unmonitored locations is inherently more uncertain than projections in monitored locations due to the fact that the ambient concentrations from which these projections are developed are unknown in the unmonitored locations.

While the unmonitored area analysis is not a regulatory requirement, and states are not required to identify enforceable emissions reductions to eliminate potential violations in unmonitored areas, an unmonitored area analysis has the potential to provide additional important information about $PM_{2.5}$ levels and gradients in the nonattainment area. The results of the analysis can be used to provide information to inform future monitoring plans, to examine the need for potential emissions controls, to evaluate potential environmental justice concerns, and to provide additional information to the public. The EPA believes that Option 4 provides the best balance between the regulatory requirements of the attainment demonstration and additional analyses which could provide helpful information to inform future regulatory activities.

Where information is available, states and the EPA have obligations to address potential violations in unmonitored areas, and, although we expect this to be relatively rare, attainment plans need to address air quality in unmonitored areas where information exists suggesting the potential for such violations. Where an unmonitored area analysis is performed, states should use model results and available ambient data to develop an assessment of the likelihood of violations in unmonitored areas. The nature of the assessment depends on the available information and the nature of the local $PM_{2.5}$ problem, but could include, as appropriate, elements such as an evaluation of the emissions inventory (particularly for local direct $PM_{2.5}$ sources), the existing

ambient data for the area, and meteorological model inputs to evaluate the accuracy of the modeled violations in unmonitored areas. If potential violations are determined to be likely, additional steps could include imposition of emissions reductions at nearby emission sources or a commitment to deploy special purpose monitors and/or saturation monitors in the area (in order to further evaluate the problem). The state should document the assessment, including analyses of emissions, meteorological inputs and ambient data.

The $PM_{2.5}$ modeling guidance recommends a default procedure for applying an unmonitored area analysis, which combines gridded model data with interpolated ambient data. States can apply the default recommended approach or develop their own analysis which may be more appropriate for the specific area or situation. States are expected to consult with the appropriate EPA Regional Office to evaluate available information to determine if an unmonitored area analysis is needed for a particular area and how the analysis should be performed.

c. Comments and Responses. Comment: Some commenters stated that, of the options for addressing unmonitored areas, only Option 2 is technically and legally defensible (80 FR 15382). The commenters stated the Act requires that ambient concentrations in all areas meet the applicable NAAQS and cited 42 U.S.C. section 7407(a) as requiring states to assure "air quality within the entire geographic area comprising such State" will achieve the national standards and requiring "an implementation plan [to] . . . specify the manner in which national primary and secondary ambient air quality standards will be achieved and maintained"). The commenters also cited 42 U.S.C. section 7410(a)(1) as requiring implementation plans to provide for implementation of the NAAQS "in each air quality control region (or portion thereof) within

such State"). The commenters stated it is insufficient to suggest that an area need only show attainment at monitored locations and need only adopt controls that will address those locations.

Response: The EPA does not agree that Option 2 is the only technically and legally defensible option. The CAA requires states with nonattainment areas to submit an attainment demonstration as part of their $PM_{2.5}$ SIP. States must show that they will attain the NAAQS by their attainment date. The CAA also requires states to use air quality modeling in their attainment demonstration. But other than those general requirements, the EPA believes states have discretion to interpret how and where to show attainment of the NAAQS through modeling in support of an attainment demonstration.

In addition, the EPA believes that a monitor based attainment demonstration satisfies the CAA requirement to show that "the entire geographic area" will attain the NAAQS. The EPA's monitoring requirements for $PM_{2.5}$ are designed to ensure a robust nationwide monitoring network in both nonattainment and attainment areas. States have achieved this by maintaining their $PM_{2.5}$ networks in accordance with EPA's network design criteria. Historically, these criteria provided that CBSAs have at least one $PM_{2.5}$ monitoring site located in an ''area-wide'' location of expected maximum concentration (within the CBSA)[110]. Thus, by assuring compliance with the NAAQS at the location of the expected highest area-wide concentration in the CBSA, air quality is protected throughout each CBSA. The EPA has identified recommended procedures for $PM_{2.5}$ modeled attainment demonstrations. These recommendations are contained in modeling guidance. The recommended attainment test relies on the ambient monitors to provide the "anchor point" for future year air quality projections. This ensures that future year

[110] *See* fine particulate ($PM_{2.5}$) design criteria at 40 CFR part 58- Appendix D to part 58.

concentration predictions are grounded by "real world" measurements. Since the attainment test relies on ambient monitoring data, the projection of future year $PM_{2.5}$ concentrations in unmonitored locations is inherently more uncertain than projections in monitored locations due to the fact that the ambient concentrations from which these projections are developed are unknown in the unmonitored locations. Therefore, the EPA continues to believe that for $PM_{2.5}$ attainment demonstrations, modeling results in unmonitored areas are too uncertain to use in this manner. For the reasons stated earlier, in the final rule, the EPA does not believe that it is necessary to require states to submit an unmonitored area analysis and to show that any potential violations of the NAAQS in unmonitored areas have been eliminated through enforceable controls.

Comment: Several commenters supported Option 1 where only monitored grid cells are included in the attainment plan. Commenters stated that, due to their concerns related to the accuracy of air dispersion modeling tools and protocols, it is not appropriate to use air dispersion modeling to predict receptor impacts in unmonitored areas. Some commenters stated that Option 1 is the approach that most closely describes the current EPA rule.

Response: The EPA agrees that the modeling results are too uncertain in unmonitored areas to require an unmonitored area analysis as part of the attainment demonstration (for the reasons enumerated earlier). However, the EPA disagrees that Option 1 is the approach that most closely describes the attainment demonstration requirements in the 2007 $PM_{2.5}$ implementation rule. An unmonitored area analysis has never been an implementation rule requirement, but was a recommended analysis in the $PM_{2.5}$ modeling guidance. Therefore, the EPA believes that Option 4 is closer to the current status quo. This final rule clearly states the continued recommendation to perform an unmonitored area analysis and the benefits of doing so.

Comment: Some commenters stated that an "unmonitored area analysis" is essential since speciation monitoring is conducted at a limited number of sites. The commenters stated that, however, given the inherent uncertainty from modeling analysis in unmonitored areas, results from such analysis should only be used to inform additional actions. The commenters stated that, while modeling analysis in unmonitored areas can be used as a reference for additional studies, it should not be used for the attainment demonstration in the SIP. The commenters stated that, under any of the options, the EPA should specify the recommended level of detail for an unmonitored area analysis, especially if it is required. The commenters recommended that the analysis need not require modeled results at finer spatial scales than those specified in the modeling protocol.

Response: The EPA agrees that an unmonitored area analysis is important and continues to recommend development of unmonitored area analyses to support attainment demonstrations. The EPA also agrees that due to uncertainty, the results from such analysis should only be used to inform additional actions. As stated earlier, the $PM_{2.5}$ modeling guidance contains a default recommended unmonitored area analysis technique which combines gridded modeling data and interpolated ambient data (including $PM_{2.5}$ speciation data). But the exact nature of the unmonitored area analysis can be considered based on the information relevant to each nonattainment area. The EPA also agrees that where an unmonitored area analysis is conducted, it should be at the same spatial scale (model resolution) as the modeled attainment demonstration at monitoring locations. For example, if the gridded modeling analysis is performed at 4km resolution (model grids that are 4km on a side), then the unmonitored areas should be examined at the same resolution. Similarly, if near road monitors are examined with a dispersion model at a

finer resolution (compared to the other monitors) as part of the attainment demonstration, the unmonitored area analysis could also examine unmonitored near-road areas at a finer resolution.

Comment: Several commenters disagreed with the proposal to require states to perform the attainment test at "recent" monitoring locations. Commenters stated that, within the EPA's description of Option 1, the proposal indicates that the attainment test required under Option 1 would also apply to locations that have "recent" FRM and/or FEM monitoring data. Commenters stated the current FRM/FEM monitoring data should be sufficient to demonstrate attainment.

Response: States must demonstrate that they will attain the $PM_{2.5}$ NAAQS in the nonattainment area as expeditiously as practicable, and no later than the moderate area attainment date. The recommended attainment test in the modeling guidance uses recent ambient data that encompass a 5-year period that is dependent on the base modeling year. For example, for a base modeling year of 2014, the guidance recommends using ambient $PM_{2.5}$ data from the 2012-2016 period. The guidance also recommends only using ambient data from a particular monitoring site if it has at least one complete design value period during the relevant 5-year period. With these recommendations in mind, there are numerous cases where a monitoring site may have only partial data from the relevant 5-year period or may be a new monitor that started collecting data after the 5-year period or may have been shut down before the 5-year period. The EPA agrees that it is generally not necessary to examine the modeling results where monitors were shut down before the base modeling period. These monitors will not be used to make future decisions relating to attainment status of the area. However, monitors that are new or were operating during the base modeling period are still relevant and can be used to provide additional information in the attainment demonstration. The data from these monitors may serve as the basis for examining potential violations in the area as part of an unmonitored area analysis. This

is especially the case for new monitors, which may not have enough data to provide a robust future year concentration estimate in the attainment demonstration. But the monitoring data, combined with modeled information, can provide information about the likelihood of future violations in the area surrounding the monitor location.

5. Future Year(s) to be Modeled in Attainment Demonstrations

a. Summary of Proposal. A state performing a modeling analysis for an attainment demonstration or impracticability analysis must select a future year for the analysis. For an attainment demonstration, a state should select the future modeling year such that all emissions control measures relied on for attainment will have been fully implemented by the beginning of that year. The EPA proposed that to demonstrate attainment, the modeling results for the nonattainment area must predict that emissions controls implemented no later than the beginning of the last calendar year preceding the attainment date will result in $PM_{2.5}$ concentrations that meet the level of the standard.[111] While states should choose the future modeling year based on a number of factors, the EPA proposed the last possible year permitted under the statute as a starting point for modeling.

b. Final Rule. The EPA is finalizing the recommendation that the last possible year permitted under the statute is an appropriate starting point for modeling. *See* 40 CFR 51.1011(a)(6). For a state that is submitting an attainment demonstration, modeling the sixth calendar year is a logical starting point to determine if attainment by that year is likely. Even though attainment is determined by averaging 3 years' worth of ambient data, states do not have

[111] Note that for purposes of the $PM_{2.5}$ NAAQS, a determination of attainment (or failure to attain), which the EPA is required to make after the attainment date has passed, is based on an average of the most recent 3 years of ambient data prior to the area's attainment date.

to model 2 years before the attainment date to show modeled attainment. Since the design value is an average of 3 years' worth of data, attainment can still be shown even if concentrations exceed the NAAQS in one or more of the 3 years used to determine attainment (as long as the 3 year average is less than the NAAQS). Therefore, it can be appropriate to model any of the 3 years used to determine attainment. In addition, if ambient data show attainment-level concentrations in the final statutory attainment year, a state may be eligible for up to two 1-year extensions of the attainment date, if the area meets the criteria for such extensions. Therefore, modeling attainment-level concentrations for the last year permitted by statute is acceptable.

States with Moderate areas that submit an impracticability demonstration must show that the area cannot attain the NAAQS by the end of the sixth calendar year following designation of the area. Therefore, the appropriate future modeling year for such a demonstration is also the sixth calendar year after designation.

For the reasons stated earlier, it is both acceptable, and will in fact be most efficient, for a state to begin the attainment demonstration process by modeling the last year permitted under the statute to determine future year modeled $PM_{2.5}$ concentrations in the sixth year after designations. For example, since designations for the 2012 $PM_{2.5}$ NAAQS were effective in March 2015, it is appropriate for states to model air quality for 2021 in the attainment demonstrations for designated nonattainment areas.

Because an area must attain "as expeditiously as practicable," additional considerations are necessary before an attainment date can be established. For purposes of determining the attainment date that is as expeditious as practicable, the state must conduct future year modeling which takes into account expected growth and known controls that are already in effect or that are adopted and will be in effect by January 1 of the future year. For example, for a Moderate

nonattainment area for the 2012 $PM_{2.5}$ NAAQS, a future base case scenario for the year 2021 would project future air quality given implementation of existing federal, state and local measures. If this future base case scenario demonstrates attainment, then the state must determine if attainment can be achieved in an earlier year through the application of additional measures. Therefore, the state must conduct an analysis of RACM and RACT and additional reasonable measures to determine if, collectively, all technologically and economically feasible measures identified by the state that can be implemented by the beginning of the sixth calendar year following designations can advance the attainment date by at least 1 year (note that RACM and RACT controls must be implemented within 4 years of an area being designated nonattainment, but additional reasonable measures for an area for which a state can demonstrate attainment by the end of the sixth calendar year following designation of the area are those technologically and economically feasible measures that can be implemented by the beginning of the last year prior to the projected attainment date). Results of this analysis may indicate attainment can be achieved earlier, through implementation of all reasonable control measures (*i.e.*, RACM and RACT and additional reasonable measures).

If, on the other hand, the future base case scenario does not demonstrate attainment, then a control case scenario is needed to examine whether the reasonable, technically and economically feasible measures identified by the state would result in attainment in the analysis year (*i.e.*, in 2021 for purposes of this example based on the 2012 $PM_{2.5}$ NAAQS). The control case scenario would add potential control measures -- *e.g.* RACM and RACT (which must be implemented in 4 years) and additional reasonable measures, plus any measures on sources outside of the nonattainment area that the state has identified as feasible to implement by the attainment date. This modeling, along with other relevant information, would inform a judgment

as to whether attainment of the relevant NAAQS is practicable by the end of the sixth year after designation or earlier. In the case of areas designated for the 2012 $PM_{2.5}$ NAAQS, if the analysis does not demonstrate attainment by December 31, 2021, then the analysis could serve as the technical basis for the state to submit a demonstration that attainment by the outermost statutory attainment date for Moderate areas is impracticable. This in turn could serve as a technical basis for the Administrator to reclassify the area to Serious.[112] If the analysis does demonstrate attainment, then the remaining step is to assess whether the attainment date can be advanced by 1 year.

In conducting this assessment, the EPA believes that it is not reasonable to require states to model each and every calendar year to determine the appropriate attainment date. Developing and modeling future year inventories is a time-consuming and resource intensive process. Multiple emissions models are needed in order to generate year specific emissions for the various emissions sectors (*e.g.* mobile, non-road, non-EGU point and EGU point). In some cases it may be reasonable to model one additional interim year before the maximum statutory attainment date.[113] However, in most cases, the air quality benefits of an identified set of RACM and RACT and additional reasonable measures can be estimated through model sensitivity analyses and the development of sensitivity factors (i.e., factors to relate tons of emissions reductions in the area to $PM_{2.5}$ concentration changes in the area). For example, states can model across the board percentage reductions in direct $PM_{2.5}$ and/or precursor emissions (in separate model runs or using

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[112] A demonstration that the area cannot attain by the moderate area attainment date would not be the only trigger for a reclassification to serious nonattainment. The Administrator maintains wide discretion in making a determination that an area cannot practicably attain the NAAQS by their attainment date.

[113] If several future modeling years are available, it may in some cases be appropriate for states to interpolate $PM_{2.5}$ concentrations between years.

advanced modeling techniques such as DDM) to determine the impact of emissions reductions on $PM_{2.5}$ concentrations in the area. This modeling can be performed with a single attainment year modeling platform, which is much less resource intensive than modeling additional future years. The identified potential emissions reductions available from RACT and RACM and additional reasonable measures can be compared to the magnitude of the modeled $PM_{2.5}$ reductions from the sensitivity analyses to determine if all such controls will advance attainment by a year. The EPA strongly recommends that states discuss the selection of the future year(s) to model with their EPA Regional Office as part of the modeling protocol development process and before embarking on the modeling.

c. Comments and Responses. Comment: Some commenters disagreed with the proposal that the future year should reflect when all control measures relied on have been fully implemented by the beginning of that year and it should be no later than the beginning of the last calendar year preceding the attainment date. The commenters stated the CAA provides attainment must be achieved as expeditiously as practicable but no later than the end of the sixth calendar year (except RACT/RACM are required within 4 years) and states should be given the full period to demonstrate attainment and to require control of emissions.

Response: The proposal to require the modeling to reflect control measures that have been fully implemented no later than the beginning of the last calendar year preceding the attainment date does give nonattainment areas "the full period" to demonstrate attainment and to require control of emissions. Since the design value is an average of 3 years' worth of data, it could be argued that modeling and related emissions controls should be in place 3 years before the attainment date. However, if ambient data show attainment level concentrations in the final statutory attainment year, a state may be eligible for up to two 1-year extensions of the

attainment date, if the area meets the criteria for such extensions. Therefore, modeling attainment level concentrations for the last year permitted by statute is acceptable. But in order to measure attainment level concentrations in the final year, controls must be in place for the full year (at the beginning of the year). Implementation of emissions controls at the end of the year would not be consistent with modeling attainment level or measuring attainment level concentrations during the year.

6. Attainment Year Motor Vehicle Emissions Budgets

The transportation conformity rule requires that attainment plans establish motor vehicle emissions budgets for the area's attainment year. Therefore, once an area's attainment date has been established, the state would establish motor vehicle emissions budgets for direct $PM_{2.5}$ and any relevant $PM_{2.5}$ precursor for the attainment year.[114] It should be noted that states that submit impracticability demonstrations for Moderate areas under CAA section 189(a)(1)(B)(ii) are not required to submit motor vehicle emissions budgets for attainment purposes because the submitted SIP does not demonstrate attainment. A motor vehicle emissions budget for the purposes of a $PM_{2.5}$ attainment plan is that portion of the total allowable emissions within the nonattainment area allocated to on-road sources as defined in the submitted attainment plan. Such motor vehicle emissions budgets would be calculated using the latest planning assumptions

[114] For more information on $PM_{2.5}$ precursor requirements, *see* CAA section 93.102(b)(2)(iv) and (v) of the transportation conformity rule. *See* also the May 6, 2005, final transportation conformity rule that addressed requirements for $PM_{2.5}$ precursors. (70 FR 24280).

and the latest approved motor vehicle emissions model available at the time that the attainment plan is developed, unless EPA approves the state's use of an alternative model.[115]

F. RFP Requirements

1. Background on Statutory Requirements and Existing Guidance

Reasonable further progress (RFP) is a concept included in the CAA under part D, title I to assure that states make steady, incremental progress toward attaining air quality standards in the years prior to the attainment date for a nonattainment area, rather than merely deferring implementation of control measures and therefore emissions reductions until the date by which the standards are to be attained. As discussed elsewhere in this preamble, section 172 of the CAA addresses attainment plan provisions in general. Section 172(c)(2) of the CAA requires attainment plans to provide for RFP, which is defined in CAA section 171(l) as "such annual incremental reductions in emissions of the relevant air pollutant as are required by [part D of title I] or may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date." Section 189(c) of the CAA requires that "[P]lan revisions demonstrating attainment submitted to the Administrator for approval under this subpart shall contain quantitative milestones which are to be achieved every 3 years until the area is redesignated attainment and which demonstrate reasonable further progress, as defined in CAA section 171(1), toward attainment by the applicable date." Quantitative milestones are discussed later in Section IV.G of the preamble.

[115] If an area includes re-entrained road dust in the motor vehicle emissions budget, the latest approved version of AP-42 should be used unless the EPA has approved an alternative model for the area.

Section 172(c)(3) of the CAA requires the state plan to include "a comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants in such area…" Section 172(c)(1) of the CAA requires the state plan to include "all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology)…" Section 172(c)(9) requires the state plan to "provide for the implementation of specific measures to be undertaken if the area fails to make reasonable further progress… Such measures shall be included in the plan revision as contingency measures to take effect in any such case without further action by the State or the Administrator." For additional background on statutory requirements and existing guidance, refer to preamble Section IV.F of the proposal for this rule.[116]

2. General Approach to RFP

a. Summary of Proposal. To satisfy the statutory requirements for RFP at CAA section 172(c)(2), the EPA proposed that a state must submit an RFP plan as part of its Moderate area attainment plan submission. The EPA proposed the following two options for developing an RFP plan.

Under the first option, the EPA proposed that the RFP analysis for any Moderate $PM_{2.5}$ nonattainment area that can demonstrate attainment by the statutory attainment date must demonstrate either: (i) generally linear progress toward attainment; or (ii) stepwise progress toward attainment. Stepwise emissions reductions would be slower than "generally linear" reductions for certain periods, and then would decline sharply (due to implementation of a new

[116] 80 FR 15385

emission reduction program, or new operation of control technology on one or more stationary sources). The EPA proposed that a state must follow one primary approach for conducting the RFP analysis, but that they also have an option to conduct a secondary analysis that will provide greater flexibility in setting RFP goals with alternative emissions reductions and air quality improvement scenarios. The primary approach would be to show that nonattainment area emissions of each pollutant decline from the base year to the attainment year, either in a generally linear manner or in a stepwise manner. In the optional secondary analysis, the state could show that emissions of the various pollutants would change in a manner that would provide a change in air quality during the attainment period that is equivalent or more expeditious than the air quality change that would be estimated to occur under the primary approach. This optional analysis was referred to as an equivalency determination.

Under the second proposed option, the state would provide the control strategy implementation schedule and estimate the emissions reductions anticipated from the control measures (i.e., RACM/RACT and additional reasonable measures) for sources in the nonattainment area. The state then would employ modeling or another quantitative method to predict the overall $PM_{2.5}$ concentrations in the nonattainment area for each milestone year. The milestone years would correspond to the years for which the state would be required to provide quantitative milestones pursuant to the requirement in section 189(c) of the Act.

b. Final Rule. The EPA is finalizing RFP requirements that allow the state flexibility to demonstrate RFP under CAA section 172(c)(2) using any of the general approaches included in the proposed rule. As part of its Moderate area attainment plan submission, the state must submit an RFP plan that includes three components: (1) an implementation schedule for control measures on sources in the nonattainment area, (2) RFP projected emissions for each applicable

quantitative milestone year determined in Section IV.G of this preamble, based on the anticipated control measure implementation schedule; and (3) an analysis that demonstrates that this schedule of aggregate emissions reductions achieves sufficient progress toward attainment between the applicable baseline year to the attainment year. *See* 40 CFR 51.1012(a).

The first component of the RFP plan is the implementation schedule for all required control measures contained in the control strategy. The schedule should describe which measures will be implemented within the first 4 years following designation (and therefore would meet the statutory requirement for RACM and RACT). It should also describe the implementation schedule of additional reasonable measures (to be implemented more than 4 years following designation but before the attainment date) that have been adopted to help provide for expeditious attainment of the standard. Any Moderate area that cannot demonstrate attainment by the statutory Moderate area attainment date is required to provide an implementation schedule for all of the control measures identified as RACM/RACT and additional reasonable measures, in the same manner as an area that can demonstrate attainment.

The second component of the RFP plan is an analysis by the state identifying the RFP projected emissions by pollutant that are expected to be achieved by the control measures implemented within the nonattainment area according to the implementation schedule. The EPA requires the state to estimate these RFP projected emissions for each quantitative milestone year (*i.e.*, for a Moderate area, at 4.5 years and 7.5 years after designation of the area) by sector on a pollutant-by-pollutant basis. These milestone year projected emissions are discussed further in Section IV.F.3 of the preamble. This information will be used by the state to show that the area is complying with quantitative milestone and RFP requirements for the area (discussed in Section IV.G of this preamble).

The final component of the RFP plan is an analysis demonstrating that the schedule of emissions changes achieves reasonable progress toward attainment between the applicable baseline year and the attainment year. This demonstration can be expressed in the form of emissions reductions only, or emissions reductions converted to air quality concentrations. This optional air quality RFP analysis is discussed later in this section.

Because the statute does not clearly establish the applicable baseline year from which to begin calculating annual emissions reductions for purposes of demonstrating RFP, the EPA is finalizing a requirement that states use the same year as the base year inventory used for developing the control strategy and associated air quality modeling demonstrating that the area will attain expeditiously.

A demonstration based on only emissions reductions must show that the implementation schedule achieves either: (i) generally linear progress toward the projected attainment date; or (ii) stepwise progress toward the projected attainment date. For example, in one area new emission standards for mobile sources may achieve reductions in a generally linear manner over time, as a portion of the existing vehicle fleet is replaced each year with new vehicles meeting the more stringent standards. In another area, regulations to reduce emissions from certain stationary source sectors could have a single compliance date by which controls must be in place, which could result in a significant drop in emissions in a "stepwise" manner over a relatively short period.

In the first case, the EPA expects that, so long as the attainment date is as expeditious as practicable, then generally linear progress toward attainment by that date would satisfy the RFP requirement. In the second case, where progress is slower than generally linear, the state is required to submit a clear rationale and supporting information to explain why generally linear

progress is not appropriate (*e.g.*, due to the nature of the nonattainment problem, the types of sources contributing to $PM_{2.5}$ levels in the area and the implementation schedule for control requirements at such sources).

Similarly, for areas that cannot demonstrate attainment within the Moderate area statutory deadline in CAA section 188(c)(1), the state must demonstrate either generally linear or stepwise emissions reductions toward the full amount of reductions that will be achieved by that deadline, *i.e.*, the amount that reflects implementation of all of the control measures identified as RACM and RACT and additional reasonable measures for the entire period of the applicable attainment plan. Generally linear progress toward this full amount would meet the RFP requirement, but progress that is slower than that would require further justification.

In some circumstances, the EPA expects that a state could develop an approvable RFP plan even if emissions of one or more $PM_{2.5}$ plan precursors are not decreasing. In this scenario, the state must demonstrate that the emissions reductions of direct $PM_{2.5}$ combined with the aggregate emissions reductions of $PM_{2.5}$ plan precursors support expeditious attainment of the applicable $PM_{2.5}$ NAAQS. To accomplish this, the EPA expects that a state could use the relative air quality impacts of the different $PM_{2.5}$ plan precursors identified in the attainment modeling to demonstrate that the emissions reductions of direct $PM_{2.5}$ and aggregate $PM_{2.5}$ plan precursors constitute an acceptable RFP plan. For example, the state could demonstrate that even if one or more $PM_{2.5}$ plan precursor is not decreasing, the emissions reductions of direct $PM_{2.5}$ and the remaining $PM_{2.5}$ plan precursors are the dominant factors in reducing ambient $PM_{2.5}$ levels and are therefore adequate to support expeditious attainment. In providing this flexibility, the EPA recognizes that control measures for certain pollutants may be more effective at reducing $PM_{2.5}$

concentrations than others, and that states may be able to implement some measures more quickly than others while still achieving reasonable overall progress toward attainment.

The EPA is also providing an additional optional RFP analysis that evaluates the collective changes in emissions of multiple pollutants during the attainment period in terms of changes in air quality concentration. Under this optional approach, a state would have to show that the air quality improvement that is anticipated by milestone dates due to the identified control measures in the implementation schedule supports expeditious attainment of the $PM_{2.5}$ NAAQS. For an area that can demonstrate attainment within the Moderate area statutory deadline, a state using this option could rely upon attainment demonstration modeling results that link emissions reductions with air quality improvements. For areas that cannot demonstrate attainment within the Moderate area statutory deadline, the state may have to conduct modeling or employ another quantitative method to predict the overall $PM_{2.5}$ concentrations in the nonattainment area in each milestone year. The state would compare these air quality target values to certified ambient air quality monitoring data as part of the quantitative milestone report due after the area reaches each quantitative milestone date. The EPA recommends that states estimate air quality targets by establishing the relationship between modeled emissions reductions and air quality changes in the attainment plan (for the attainment year) and interpolating to the intermediate year(s) based on the same relationship.

The EPA recognizes that because atmospheric processes are complex, a specific percent change in emissions of $PM_{2.5}$ precursors does not lead to an equivalent percent change in air quality, potentially creating uncertainty when determining air quality targets based upon predicted emissions reductions. Nevertheless, the EPA recognizes the importance of providing the flexibility to address different pollutants on different timetables so long as the plan can

reasonably be expected to achieve the intended air quality benefits represented by the RFP analysis.

As previously noted, submission of the air quality-based RFP plan is optional. However, in certain circumstances, the applicable Regional Administrator may strongly recommend that a state or local agency submit an RFP plan with air quality targets for milestone years in order to satisfy the statutory RFP requirement. This approach could be appropriate when one or more pollutants is not decreasing over the attainment planning period or for areas that have experienced longstanding and persistent $PM_{2.5}$ pollution problems despite the prior implementation of required control measures. The EPA will review each RFP plan on a case-by-case basis to determine whether it provides for such annual incremental reductions in emissions of the relevant air pollutant(s) as are necessary for the purpose of ensuring attainment by the applicable attainment date. *See* 40 CFR 51.1012. An additional RFP analysis will be required as part of a Serious area attainment plan if EPA reclassifies the area to Serious.

c. Comments and Responses. Comment: Some commenters generally supported the equivalency determination concept because they noted that different precursors are more or less effective in reducing atmospheric concentrations of $PM_{2.5}$. Some commenters stated that, because the goal is timely attainment regardless of when controls are implemented for each precursor that is to be controlled, the EPA should allow both options, including the option for states to determine whether to approach the demonstration on a pollutant-by-pollutant basis, or overall.

Response: The final rule allows for emissions from one or more $PM_{2.5}$ plan precursors to increase over the attainment planning period, as long as the emissions of direct $PM_{2.5}$ and aggregate $PM_{2.5}$ plan precursors decrease consistent with RFP and the state can demonstrate that

the emissions increase does not delay expeditious attainment. This approach recognizes the fact that different precursors have different impacts on $PM_{2.5}$ concentrations depending upon the specific atmospheric chemistry of each area. As previously noted, submission of the air quality-based RFP plan is optional but may be strongly recommend by the applicable Regional Administrator depending upon the unique circumstances of the nonattainment area.

Comment: One commenter suggested that the equivalency determination must be based on modeling of ambient concentrations, not simply on inter-pollutant equivalency ratios.

Response: The EPA recognizes the importance of modeling and notes that there are potential benefits of using modeling when providing the optional air quality analysis. Additionally, in the preamble, the EPA described when these types of tools could be useful in the development the air quality targets. Because the development of air quality targets is optional and complements the emissions reductions analysis, the EPA does not require modeling of ambient conditions for this purpose.

Comment: A few commenters supported the proposed Option 1 and the allowance for either generally linear or stepwise progress toward attainment. These commenters stated that allowing both methods is consistent with the pattern of many federal emissions reduction measures and it provides the most flexibility to states. Other commenters stated that existing guidance in the Addendum failed to recognize that, in many cases, more can be accomplished during one given year than in another. The commenters suggested the EPA provide states with the flexibility to manage their resources for rulemaking such that emissions reductions are obtained to attain generally linear progress averaged over the 3-year period rather than in each individual year.

Response: As stated earlier, this rule requires that the RFP analysis must demonstrate either generally linear or stepwise emissions reduction progress toward attainment. If there are significant differences between emissions reductions in different years, which make the emissions reductions no longer generally linear, then the state would have to provide a justification for the stepwise progress as discussed earlier. Therefore, the suggestion of averaging the emissions reductions to obtain generally linear progress over a 3-year period is not an acceptable way to demonstrate RFP. In this example, the state would have to submit a justification of why stepwise emissions reductions are more appropriate for their area. However, the EPA notes that if stepwise emissions reductions are achieved more rapidly than expected and consistent with the amount necessary to demonstrate RFP toward timely attainment, this would be in line with the overall principles of the CAA and would not require the aforementioned justification.

3. RFP Projected Emissions for RFP Analyses

a. Summary of Proposal. The EPA proposed that a state with a Moderate $PM_{2.5}$ nonattainment area must submit RFP projected emissions for sources within the nonattainment area as part of the RFP plan. The EPA also proposed that these RFP projected emissions would, at a minimum, include projected emissions of each pollutant by different source types corresponding to the quantitative milestone dates for the area.

b. Final Rule. The EPA is finalizing that a state with a Moderate $PM_{2.5}$ nonattainment area must submit RFP projected emissions for sources within the nonattainment area as part of the RFP plan. These RFP projected emissions shall, at a minimum, include projected emissions of each pollutant (*i.e.*, direct $PM_{2.5}$ and $PM_{2.5}$ plan precursors) by different source types corresponding to the quantitative milestone dates for the area (quantitative milestone dates are

described in greater detail in Section IV.G of this preamble). Specifically, the EPA requires that the RFP plan for any Moderate area must contain RFP projected emissions for each calendar year in which quantitative milestones for a Moderate nonattainment area must be met. As explained in Section IV.G of this preamble, a state must identify as part of the attainment plan submission for a Moderate nonattainment area quantitative milestones to be achieved every 3 years from the Moderate area attainment plan due date, or 4.5 years from the effective date of designation of the area.[117] For example, the first round of designations for the 2012 $PM_{2.5}$ NAAQS became effective in April 2015; Moderate area attainment plans for these areas will thus be due 18 months later, or in October 2016. The first quantitative milestones for each of these areas will then have to be met in October 2019; the second quantitative milestones, in October 2022; and so on, until the area attains the NAAQS. Under this approach, the state will be required to submit such RFP projected emissions as part of the Moderate area attainment plan due in October 2016 that project emissions from sources in the nonattainment area for the same calendar years as those for which quantitative milestones will be due (*i.e.,* 2019 and 2022 inventories in this example).

The transportation conformity rule requires that RFP plans establish motor vehicle emissions budgets. RFP plans would therefore be required to establish motor vehicle emissions budgets for direct $PM_{2.5}$ and any relevant $PM_{2.5}$ precursor as determined under the transportation conformity rule.[118] Precursors that are relevant for transportation conformity purposes would be

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[117] According to CAA section 189(a)(2)(B), Moderate area attainment plans are due to the EPA 18 months after designation.

[118] For more information on $PM_{2.5}$ precursor requirements, *see* CAA section 93.102(b)(1) and (b)(2)(iv) and (v) of the transportation conformity rule. *See* also the May 6, 2005, final transportation conformity rule that addressed requirements for $PM_{2.5}$ precursors. (70 FR 24280).

limited to the $PM_{2.5}$ plan precursors but may not include all of the $PM_{2.5}$ plan precursors. For example, it is likely that many $PM_{2.5}$ plans will include SO_2 as a plan precursor. However, emissions of SO_2 from on-road sources are usually low compared to stationary sources. The transportation conformity rule allows for the state to determine through its SIP development process if it is necessary to establish motor vehicle emissions budgets for SO_2. *See* 40 CFR 93.102(b)(2)(v). On the other hand, if a state provides a precursor demonstration approved by the EPA which shows that VOCs do not have a significant contribution to $PM_{2.5}$ levels in a particular nonattainment area, then a motor vehicle emissions budget for VOCs would not need to be established for the area for transportation conformity purposes. A motor vehicle emissions budget for the purposes of a $PM_{2.5}$ RFP plan is that portion of the total allowable emissions allocated to on-road sources as defined in the submitted RFP plan for the relevant years as described earlier.[119] Such motor vehicle emissions budgets will be calculated using the latest planning assumptions and the latest approved motor vehicle emissions model available at the time that the attainment plan is developed, unless the EPA approves the state's use of an alternative model.[120]

c. Comments and Responses. Comment: Some commenters stated that since RFP is one of the general attainment plan provisions listed in CAA section 172(c), the EPA's proposal to require motor vehicle emissions budgets as part of RFP plans extends beyond just the

[119] A state would also establish motor vehicle emissions budgets for an area's attainment year. Those budgets would be the motor vehicle emissions that the SIP establishes as being necessary to attain the NAAQS.

[120] If an area includes re-entrained road dust in the motor vehicle emissions budget, the latest approved version of AP-42 should be used unless the EPA has approved an alternative model for the area.

implementation of the $PM_{2.5}$ NAAQS and, as a result, this proposal should be presented within the context of a revision to the conformity rule itself and not just this $PM_{2.5}$ implementation rule.

Response: The EPA disagrees with the commenters. The transportation conformity rule already states that motor vehicle emissions budgets come from control strategy SIPs.[121] Additionally, the transportation conformity rule defines control strategy SIPs as RFP plans and attainment demonstrations. It goes further to say that control strategy SIPs include the SIPs required by CAA sections 172(c), 189(a)(1)(B) and 189(b)(1)(A). The requirement in this $PM_{2.5}$ SIP Requirements Rule does not amend the transportation conformity rule; it merely explains what is already required.

4. Geographic Coverage of Emission Sources for RFP

a. Summary of Proposal. The EPA proposed that the RFP demonstration to be included with a state's $PM_{2.5}$ nonattainment area plan must include emissions only for sources located in the nonattainment area, and not from an area larger than the nonattainment area. This proposed policy approach differed from the remanded 2007 $PM_{2.5}$ implementation rule. As explained in the proposal, the difference was due to the evolution of policy on a similar RFP issue in the ozone NAAQS implementation program that stemmed in part from a petition for reconsideration and a D.C. Circuit decision on the November 2005 Phase 2 Ozone Implementation Rule. The EPA received a similar petition for reconsideration of the 2007 $PM_{2.5}$ Implementation Rule, which dealt with the EPA's interpretation of the statutory RFP requirements to allow a state to take "credit" for emissions reductions from outside the nonattainment area when addressing RFP

[121] 40 CFR 93.101

in its attainment plan.[122] The EPA granted the petition for reconsideration on this issue in 2010, after the D.C. Circuit issued its decision on litigation on the Phase 2 Ozone Implementation Rule.[123, 124] In light of these developments, the proposal indicated that the EPA now believes the best reading of the statute is that the CAA does not allow for a state to include emissions reductions from sources outside a nonattainment area when developing the plan to meet the CAA section 172(c)(2) RFP requirements for a $PM_{2.5}$ nonattainment area.

b. Final Rule. The EPA is finalizing that the RFP demonstration to be included with a state's $PM_{2.5}$ nonattainment area plan must include emissions only for sources located in the nonattainment area, and not from an area larger than the nonattainment area. Commenters disagreed with limiting the RFP demonstration to include emissions only for sources located in the nonattainment area stating that some areas are so dominated by upwind emissions and local sources over which they have no control, such as motor vehicles, that they cannot demonstrate RFP. One of these commenters noted they have provided extensive comments on this issue in connection with the EPA's proposal for the recent ozone implementation rule and incorporated by reference their prior comments. Other commenters agreed with the proposal and stated the EPA's conclusion is compelled by CAA sections 172(c)(1), 172(c)(3) and 189(d), which all focus on emissions and reductions in the area.

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[122]This same petition raised concerns regarding the criteria used to determine the economic feasibility of controls being considered for RACT for the 1997 $PM_{2.5}$ NAAQS. *See* "Petition for Reconsideration," filed by Paul Cort, Earthjustice, on behalf of the American Lung Association, Medical Advocates for Healthy Air, Natural Resources Defense Council, and the Sierra Club (June 25, 2007). A copy of the petition is in the docket for this action.
[123]Letter dated May 13, 2010, from Gina McCarthy to David S. Baron and Paul Cort, Earthjustice. A copy of the letter is located in the docket for this action.
[124] *See NRDC v. EPA*, 571 F.3d 1245 (D.C. Cir. 2009).

In the preamble to the remanded 2007 $PM_{2.5}$ Implementation Rule, the EPA allowed states to incorporate reductions of NO_x and SO_2 emissions up to 200 km from outside the nonattainment area (and potentially for reductions of VOC or ammonia) into their RFP plan when certain conditions were met. This policy was included in the 2007 $PM_{2.5}$ Implementation Rule in part to be consistent with a similar RFP policy for NO_x and VOC that was included in the November 2005 Phase 2 ozone NAAQS implementation rule, which provided guidance for states on implementing the 1997 ozone NAAQS.[125] Under this policy, if a state intended to include emissions reductions from outside the nonattainment area in the RFP plan, the state would need to take on the additional accounting work associated with developing: (i) an expanded baseline emissions inventory for the entire geographic area and, (ii) a projected attainment year inventory for this expanded area outside the boundaries of the designated nonattainment area. Development of these more extensive inventories would likely have involved a substantial amount of additional time and resources. In addition, the state would have needed to provide information supporting its decision regarding how far outside the nonattainment area the RFP inventory should extend. While this "outside the nonattainment area" RFP approach was theoretically available to states in developing their $PM_{2.5}$ attainment plans due in 2008, there were no states to the agency's knowledge that elected to follow this approach.

Both the Phase 2 ozone implementation rule and the 2007 $PM_{2.5}$ Implementation Rule were challenged on several issues. With regard to the Phase 2 ozone implementation rule, the EPA granted a petition for reconsideration and ultimately issued a final notice of reconsideration in June 2007. In November 2008, the U.S. Court of Appeals for the D.C. Circuit heard oral

[125] *See* Phase 2 Ozone Implementation rule, 70 FR 71612 (November 29, 2005).

argument concerning multiple petitions for judicial review of the Phase 2 ozone rule and the notice of reconsideration. One of the issues in that case involved whether compliance by EGUs with a regional emissions trading program could be considered to meet the RACT requirement for those sources located in a nonattainment area. In its July 2009 decision, the court emphasized that: ''the RACT requirement calls for reductions in emissions from sources in the area; reductions from sources outside the nonattainment area do not satisfy the requirement. Accordingly, participation in the NO_x SIP call would constitute RACT only if participation entailed at least RACT-level reductions in emissions from sources within the nonattainment area."

In light of this court decision, the EPA has determined that the best reading of the statute is that the term "sources in the area" should be interpreted in the same manner as ozone. The term appears in CAA section 182 (requirements for ozone nonattainment areas) with regard to RFP as well as RACT. The decision on the Phase 2 ozone rule found that CAA section 182(b)(2) requires that a SIP must provide for implementation of RACT (under CAA section 172(c)) for emissions sources "in the area," meaning in the nonattainment area. Similarly, the EPA position is that when CAA section 182(b)(1)(A)-(B) defines baseline emissions for RFP as "the total amount of actual VOC or NO_x emissions from all anthropogenic sources in the area," this also means sources in the nonattainment area.

Turning to $PM_{2.5}$, the EPA has determined that the D.C. Circuit's interpretation of the phrase "sources in the area" should apply to RACT and RFP requirements for both the ozone NAAQS and the $PM_{2.5}$ NAAQS. In particular, for $PM_{2.5}$, the statutory language at CAA section 171(1) defines RFP in terms of "reductions in emissions" required in an attainment plan, which the EPA interprets as being directly linked to the baseline emissions inventory for sources

located in a $PM_{2.5}$ nonattainment area. The baseline emissions inventory is the foundation for the attainment plan. The emissions inventory requirement of CAA section 172(c)(3) explicitly requires that the attainment plan inventory include all sources of the relevant pollutants "in such area," which is a clear reference to the designated nonattainment area. Given that the baseline inventory must reflect the emissions "in such area," and that this inventory provides the starting point for a state's RFP analysis, in which the state must calculate generally linear progress in emissions reductions that will lead to attainment of the NAAQS in the area, the EPA believes it is appropriate that a state should consider only sources located within the nonattainment area when conducting its analysis to determine the annual emissions reductions necessary for demonstrating RFP.

Beyond the Court's interpretation, the EPA believes that the most appropriate approach with regard to the geographic area required to be covered for demonstrating RFP in a $PM_{2.5}$ attainment plan also should be limited to the nonattainment area for two other reasons. First, the EPA believes that it makes policy sense for the $PM_{2.5}$ implementation rule approach to be consistent with the approach finalized in the 2008 NAAQS for Ozone: SIP Requirements rule.[126] Second, a policy allowing the geographic area of the RFP plan to be larger than the nonattainment area would conflict with a key provision of subpart 4 that requires annual incremental reductions in emissions from sources within the nonattainment area. Under subpart 4, an area that fails to attain the standard by the Serious area attainment date is then subject to the provisions of CAA section 189(d). Section 189(d) of the CAA specifies that the state must submit a plan revision within 12 months which provides for "an annual reduction in PM_{10} or

[126] *See* 80 FR 12264.

PM_{10} precursor emissions *within the area* of not less than 5 percent of the amount of such emissions as reported in the most recent inventory prepared *for such area"* (emphasis added). Therefore, the EPA is finalizing an RFP policy approach that is consistent with CAA section 189(d).

c. Comments and Responses. Comment: Some commenters supported the EPA's general guidance for developing the RFP demonstration. In particular, these commenters agreed with the EPA's interpretation of the CAA to require that emissions reductions for purposes of meeting the RFP requirement must come from sources within the designated nonattainment area. Thus, the commenters supported the EPA's proposal that the RFP demonstration submitted by states as a part of the attainment plan cannot take credit for emissions reductions occurring outside the nonattainment area to meet the RFP requirement. These commenters asserted that the EPA's conclusion is compelled by sections 172(c)(1), 172(c)(3) and 189(d), which all focus on emissions and reductions in the designated nonattainment area. The commenters further stated the EPA has not identified any rational way for states to pick and choose what sources and related emissions outside the designated nonattainment area would need to be included in inventories and attainment planning in order to rationally measure RFP.

Other commenters disagreed with the EPA's interpretation of the CAA on this issue and advocated that the EPA should provide an option for states to meet the RFP requirement with emissions reductions from sources outside the designated nonattainment area in addition to reductions from sources inside the area. One commenter suggested the EPA should provide this option to states and also consider alternatives to simplify the "overly complicated analysis" needed to support this option in the now superseded 2007 $PM_{2.5}$ implementation rule. The

comment did not address the consistency of such an interpretation of the RFP requirements with the statute.

Another commenter asserted that the EPA should interpret the statute to permit states to meet the RFP requirement through emissions reductions from sources outside the designated area based upon several practical arguments. The commenter stated that, as the $PM_{2.5}$ standards become lower and reductions from sources within a designated nonattainment area become more challenging to find, it may be necessary to obtain emissions reductions from sources beyond the designated area in order to attain the NAAQS. According to the commenters, some nonattainment areas are so dominated by emissions from outside the area and from local sources over which they have no control that they cannot demonstrate RFP, even though they could demonstrate timely attainment due to reductions from sources outside the nonattainment area. The commenters thus argued that the EPA should provide states with the option to meet the RFP requirement with emissions reductions from sources outside the nonattainment area in cases where they believe it would be unreasonable or impossible to do so only with emissions reductions from within the nonattainment area.

In response to the EPA's request for comment on any potential legal basis for authorizing states to meet the RFP requirement with emissions reductions from outside the nonattainment area, the commenter suggested potential theories. The primary legal theory was that EPA should by regulation redefine the term "area" for purposes of the RFP requirement so that it would encompass geographic areas that are not part of the designated nonattainment area. Through this theory, the commenters suggested that the EPA could authorize states to meet the RFP requirement based on reductions from the "total area" affecting that nonattainment area, rather than from the actual designated nonattainment area. As an alternative theory, the commenter

argued that the EPA could regulatorily redefine the emissions inventory requirement of section 172(c)(3). To support this theory, the commenter disagreed with the EPA's position that because the base year inventory required by section 172(c)(3) includes the emissions from sources within the designated nonattainment area, it supports the EPA's reading of the statute with respect to the RFP requirement. The commenter instead argued that because the emissions information used for modeling purpose includes emissions from a much broader region (not just within the nonattainment area or even just within the state), the EPA was wrong to say in the proposal that the base year inventory for sources in the area is the "foundation for the attainment plan." Finally, the commenter argued more broadly for the EPA to alter its interpretation of the statutory language to allow for the commenter's preferred approach to RFP. In support of their preferred approach to the RFP requirement, the commenters noted that the EPA acknowledged in the proposal that "a literal interpretation is illogical" for other statutory requirements. To support this contention, the commenters point to the criteria in section 188(d) that provide the criteria for an extension of the Moderate area attainment date that require significant interpretation in order to make them appropriate for the statistical form of the current $PM_{2.5}$ NAAQS rather than for the exceedance-based form of the PM_{10} NAAQS that existed when the CAA was amended in 1990.

Response: The final rule requires that states demonstrate that they meet the RFP requirement through emissions reductions from sources in the nonattainment area. The EPA has decided to adopt this approach for two reasons. First, it is the most consistent with the statute. It aligns with RFP as defined in CAA section 171(1) and as required in CAA section 172(c)(2) and 189(c), and is also most consistent with other related requirements for attainment plans, such as the requirements for imposition of emission controls, e.g., RACM and RACT, and with the process for designations of nonattainment areas pursuant to section 107(d). Second, this

approach is more straightforward to administer because it retains a nonattainment area focus to the RFP requirement and, while the alternative approaches would require complex and potentially burdensome requirements to define the scope of the out-of-area sources that must be inventoried and accounted for in the determination of what constitutes RFP. The EPA has concluded that such emissions reductions from sources outside the nonattainment area are more properly accounted for and reflected in other elements of the attainment plan, such as the attainment demonstration modeling which will take into account the emissions reductions that occur outside the nonattainment area in a less burdensome fashion.

The EPA does not agree with the statutory interpretation of the RFP requirement preferred by the commenters who suggested that the EPA allow credit for emissions reductions from outside the area. Pursuant to section 171(1), the statute defines the term "reasonable further progress" to mean "such annual incremental reductions in emissions . . . as are required by this part or may reasonably be required by the Administrator for the purposes of ensuring attainment of the applicable [NAAQS] by the applicable date." This provision plainly provides EPA with discretion to interpret this term within certain statutory parameters, i.e., "as are required by this part," and consistent with the EPA's determination of what will be the appropriate approach for timely attainment, i.e., "for the purpose of ensuring attainment . . . by the applicable date." Thus, for example, the EPA has authority to interpret the RFP requirement to allow states to demonstrate generally linear reductions or stepwise reductions, rather than as a specific percentage of emissions reductions each year, as appropriate methods for meeting the RFP requirement for purposes of the subpart 1 and subpart 4 provisions applicable to the $PM_{2.5}$ NAAQS. It does not follow, however, that EPA is obligated to interpret the term "reasonable

further progress" in other ways that the EPA considers inconsistent with other relevant statutory requirements for attainment plans or more broadly.

To the contrary, the EPA believes that interpretation of the RFP requirement to reflect reductions in emissions "as are required by this part," properly includes consideration of the context and structure of the statute with respect to the other attainment plan requirements. As explained in the proposal for this action, the EPA has concluded that several other related requirements for attainment plans support an interpretation of the RFP requirement for purposes of $PM_{2.5}$ to be limited to emissions reductions from sources located within the nonattainment area. These requirements include the emissions inventory requirement of section 172(c)(3), the RACM/RACT requirement of section 172(c)(1) and section 189(a)(1)(C), and the not less than 5 percent emission reduction requirement of section 189(d).

With respect to the inventory requirement of section 172(c)(3), the EPA explained in the proposal its view that because the emissions inventory requirement explicitly refers to a comprehensive, accurate, and current emissions inventory of emissions "from all sources of the relevant pollutant or pollutants in such area," this statutory language supports the view that the primary focus of the attainment plan is reductions of emissions from the nonattainment area, not emissions reductions from sources elsewhere. Similarly, EPA explained in the proposal its views that the court's decision in *NRDC v. EPA*, 571 F.3d 1245 (D.C. Cir. 2009) supports an interpretation of the RFP requirement to apply to emissions reductions from sources within the area. Although that decision focused on the RACT requirement for ozone in particular, the reasoning of the court's decision based upon the phrase "in the area" is consistent with the EPA's longstanding approach to both RACM and RACT (or BACM and BACT for serious areas) being required for emissions sources within the nonattainment area. Given that states typically elect to

demonstrate that they meet the RFP requirement through emissions reductions that result from expeditious imposition of RACM/RACT or BACM/BACT emission controls applied to sources within the area, it is logical that the separate RFP requirement should likewise be based upon the expeditious progress towards attainment achieved through those emission controls. The EPA emphasizes that the RFP requirement and the requirements of section 172(c)(6) are separate components of an attainment plan. In those unusual circumstances where a state needs to impose specific additional controls on sources outside the nonattainment area in accordance with section 172(c)(6) to reach attainment, the state is not required to alter the base year emissions inventory for sources within the area or to alter its RFP analysis. As with other emissions reductions from sources outside the area that the state may rely upon, emissions reductions from measures states may impose to meet section 172(c)(6) will be reflected in the modeled attainment demonstration and thus included and taken into account in that fashion. [See sections IV.D.1 and VI.D.2 of the preamble for additional discussion of section 172(c)(6).]

The EPA also considers this interpretation of the RFP requirement to be consistent with the comparable requirements of CAA section 189(d). Specifically, section 189(d) requires that states with nonattainment areas that fail to attain by the applicable attainment date must make a new attainment plan submission in order to achieve emissions reductions of not less than 5 percent of the most recent emissions inventory "for such area." As discussed in Section VII.F of this rule, the EPA interprets the statute to require an area subject to section 189(d) to achieve not less than a 5 percent reduction of the most recent emissions inventory of direct $PM_{2.5}$ or any $PM_{2.5}$ plan precursor "for such area" (meaning from sources located within the nonattainment area). As a result, the EPA's interpretation of "in such area" and "for such area" are consistently applied for these related provisions of the CAA.

As explained in the proposal, the EPA also sees no appropriate legal or policy basis for addressing the geographic area from which emissions reductions for RFP must be achieved for $PM_{2.5}$ differently than is required by CAA section 182 for ozone. Both pollutants typically result from emissions from numerous sources that mix in the atmosphere and can transport great distances. For both pollutants, the CAA provides different tools for states and the EPA to address both the regional and the local contributions to violations of the NAAQS in a given area. With respect to the local contribution, the CAA provides a specific set of requirements (including RFP) designed to assure that states are properly addressing the emissions from sources located within the nonattainment area, whereas other requirements of the CAA are designed to address contributions from greater distances, whether from within the state, from other states, or even internationally. Were EPA to interpret the RFP requirements to authorize states to meet the emissions reductions requirement from sources outside the area, this would be inconsistent with the requirements specifically designed to assure that states get necessary reductions from the local sources that contribute to the violations through the attainment plan.

One commenter recommended a potential statutory interpretation in support of an outside-the-area approach. The EPA appreciates the suggestion, but has determined that it would be too inconsistent with the structure and purpose of the attainment plan requirements of the statute. The commenter specifically suggested that EPA should redefine the term "area" to encompass not just the designated nonattainment area, but also some larger geographic area with sources of emissions that cause or contribute to the ambient air quality; and that reductions from such sources should be allowed to count towards meeting the RFP requirement in addition to reductions from sources in the designated nonattainment area. The EPA considers such an approach inappropriate for several reasons. First, such a reading would be inconsistent with the

EPA's longstanding reading of this same term in many important places throughout the statute, including but not limited to explicit statutory references to the "area" in section 107(d)(1) (relevant to designations), section 107(d)(3) (relevant to redesignations), section 110(a)(2)(I) (relevant to the scope of all of the attainment plan requirements imposed by Part D), section 189(B)(2) (relevant to the schedule for submission of attainment plans under subpart 4), and section 189(e) (relevant to the statutory test for regulating precursors in a given "area"). Creating a different and conflicting definition of the word "area" for RFP purposes is not appropriate for common sense reasons, and it would require that the same word to be interpreted in multiple ways. Second, the EPA considers the redefinition of the term "area" inappropriate because it could be perceived as an attempt to alter the meaning of the term as the D.C. Circuit has already interpreted it in the *NRDC v. EPA* decision concerning the plain meaning of the term "in the area." Third, to the extent that there are situations in which the boundaries of the nonattainment area are incorrect because they fail to include the sources that contribute violations in an adjacent area to the extreme degree posited by the commenters, the statute already provides a straightforward solution to such a situation through the initial designation and redesignation provisions of section 107(d).

Finally, the EPA acknowledges that in the prior 2007 $PM_{2.5}$ implementation rule, the EPA did adopt a different interpretation of the RFP requirement for the first time that would have authorized states to meet the RFP requirement with emissions reductions from sources outside the nonattainment area within certain narrow parameters for purposes of the 1997 $PM_{2.5}$

NAAQS.[127] The EPA received a petition for reconsideration on this specific issue and granted the petition to reexamine that aspect of the 2007 $PM_{2.5}$ implementation rule.[128] Before the EPA proceeded with that reconsideration, however, the litigation over the 2007 $PM_{2.5}$ implementation rule and the 2008 NSR revisions (addressing the $PM_{2.5}$ NAAQS) proceeded with challenges on other statutory authority issues while the petition for reconsideration was still under evaluation. This litigation resulted in the court's decision in *NRDC v. EPA*, 706 F.3d 428 (D.C. Cir. 2013). In that decision, the court remanded the entire 2007 $PM_{2.5}$ implementation rule, including the portions relevant to the RFP requirement, to the EPA for failure to comply with the statutory requirements of subpart 4. This rulemaking constitutes the EPA's response to that judicial remand and through this process the EPA is replacing the 2007 $PM_{2.5}$ implementation rule, including the prior regulatory provisions and guidance related to states meeting the RFP requirements with emissions reductions from outside the designated nonattainment area. Accordingly, upon completion of this rulemaking the EPA will be interpreting the RFP requirement consistent with past practice. The EPA also notes, as a factual matter, that states have not been using this feature of the 2007 $PM_{2.5}$ implementation rule.[129] Aside from the lack of a legal basis for the commenter's preferred approach to RFP, thus far the EPA's interpretation of

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[127] See the discussion of this prior approach to RFP in the proposal for this action. 80 FR 15388-89. By its terms, the 2007 $PM_{2.5}$ Implementation Rule applied only to the 1997 $PM_{2.5}$ NAAQS. The EPA's guidance for the 2006 $PM_{2.5}$ NAAQS did not follow this approach with respect to the RFP requirement for purposes of the 2006 $PM_{2.5}$ NAAQS. The EPA later withdrew the guidance for the 2006 $PM_{2.5}$ NAAQS as a result of the court decision in NRDC v. EPA, 706 F.3d 428 (D.C. Cir. 2013).

[128] See, Letter to David S. Baron, EarthJustice, from Gina McCarthy, Assistant Administrator, dated May 13, 2010. A copy of this letter is in the docket for this action.

[129] See, e.g., "Approval and Promulgation of Implementation Plans; California; 2007 South Coast $PM_{2.5}$ Plan and 2007 State Strategy; Proposed Rule," 76 FR 41567, 41577-78 (July 14, 2011); Final Approval of Air Quality Implementation Plans; California; South Coast Attainment Plan for the 1997 $PM_{2.5}$ NAAQS Standards; Final Rule," 76 FR 69928 (November 9, 2011).

the requirements has not posed the practical difficulties that the commenter raised.

5. Other RFP Considerations

a. Summary of Proposal. The proposal outlined the statutory requirements and existing guidance for RFP. During this discussion, the following guidance from the Addendum was referenced, "Additionally, the EPA believes that it is appropriate to require early implementation of the most cost-effective control measures… while phasing in the more expensive control measures."[130] The proposal also discussed other RFP considerations, including $PM_{2.5}$ nonattainment areas that are shared by more than one state or tribe.

b. Final Rule. The EPA is finalizing that, although early implementation of the most cost-effective control measures is often appropriate, states should consider both cost-effectiveness and pollution reduction effectiveness when developing implementation schedules for their control measures and may implement measures that are more effective at reducing $PM_{2.5}$ earlier to provide greater public health benefits. This increased flexibility enables states to develop a more effective implementation schedules for their control measures while efficiently using their resources.

For a multi-state or multi-jurisdictional nonattainment area, the RFP plans for each state represented in the nonattainment area shall demonstrate RFP on the basis of common multi-state inventories. The states or jurisdictions within which the area is located must provide a coordinated RFP plan. Each state must ensure that the sources within its boundaries comply with enforceable emission levels and other requirements that in combination with the reductions planned in other states within the nonattainment area will provide for attainment as expeditiously

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[130] *Ibid.* at 42016.

as practicable and demonstrate RFP consistent with these regulations. In general, the EPA seeks to ensure that $PM_{2.5}$ nonattainment areas that are shared by more than one state or tribe meet RFP requirements as a whole. States and tribes that share a nonattainment area should therefore consult with one another to develop the RFP analysis and control strategy implementation schedule for the area as a whole. Such states and tribes should work with the EPA region or regions that oversee them to confirm that their collective approach is appropriate for RFP.

The EPA's approach for states to meet the RFP requirement is designed to ensure emissions reductions will yield incremental improvements in air quality on the path to attainment, while being sufficiently flexible to accommodate the range of control strategies necessary to address the complex mixtures of pollutants comprising $PM_{2.5}$ in different areas.

c. Comments and Responses. Comment: Some commenters asserted that the EPA should not "require" implementing the most cost-effective measures first since states should have the flexibility to implement the more effective but less cost-effective measure earlier, thus providing earlier and greater public health benefits.

Response: In this final rule, the EPA is providing states with the flexibility to implement measures that are more effective at reducing $PM_{2.5}$ earlier to provide greater public health benefits, but is not requiring it. This increased flexibility is in keeping with the overall requirement of expeditious attainment of the NAAQS.

G. Quantitative Milestones

1. General Approach to Quantitative Milestones

a. Summary of the Proposal. The proposal built from the statutory language of 189(c)(1), which requires quantitative milestones that (1) demonstrate RFP, and (2) must be achieved every 3 years until the area is redesignated attainment. The proposal first addressed the issue of the

starting date for counting the 3-year periods. For a Moderate area that cannot practicably attain the relevant $PM_{2.5}$ NAAQS within the statutory timeframe for a Moderate area, the EPA proposed that a state must submit two sets of quantitative milestones – the first set to be achieved at year 4.5 from designation and the second set to be achieved at year 7.5 from designation. The EPA also proposed that the quantitative milestones contained in the attainment plan for a Moderate nonattainment area must be constructed such that they can be tracked, quantified and/or measured adequately in order for the state to meet its milestone reporting obligations, which come due 90 days after a given milestone date. The EPA therefore proposed to require that states select the quantitative milestones that are appropriate and quantifiable and that will provide for objective evaluation of progress toward attainment in their Moderate $PM_{2.5}$ nonattainment area, whether the area can practicably attain the $PM_{2.5}$ NAAQS by the statutory attainment date or not. In addition to this general proposed approach for selecting quantitative milestones for a Moderate nonattainment area, the EPA proposed a requirement that, at a minimum, states must include in all attainment plans for Moderate $PM_{2.5}$ nonattainment areas a metric to confirm that all control measures identified and adopted as RACM and RACT for the area have been fully implemented within 4 years of designation.

b. Final Rule. Section 189(c) of the Act explicitly requires that quantitative milestones must be achieved every 3 years, but does not specify the starting date for counting the 3 year periods. In the General Preamble and Addendum, the agency stated that quantitative milestones must be achieved every 3 years starting from the due date for the plan submission (*i.e.*, because the Moderate area attainment plan is due no later than 18 months after designation of the area, the first set of milestones would need to be achieved 4.5 years after the area's designation) until

the area is redesignated attainment.[131] The EPA is finalizing this approach for the $PM_{2.5}$ NAAQS. The EPA interprets this requirement to be the most appropriate reading of CAA section 189(c)(1) which requires "quantitative milestones which are to be achieved every 3 years until the area is redesignated attainment." This approach is also consistent with the longstanding approach outlined in the General Preamble.[132] These timeframes for the quantitative milestones apply to all areas designated nonattainment for a $PM_{2.5}$ NAAQS on or after January 15, 2015, including all areas designated nonattainment effective April 15, 2015 for the 2012 $PM_{2.5}$ NAAQS.[133] *See* 40 CFR 51.1013(a).

For all areas designated nonattainment for the 1997 and/or 2006 $PM_{2.5}$ NAAQS before January 15, 2015,[134] the EPA is establishing December 31, 2014 as the starting point for the first 3 year period for quantitative milestones under CAA section 189(c). This is because December 31, 2014, was the due date for states to submit additional SIP elements necessary to satisfy the subpart 4 Moderate area requirements for the 1997 and 2006 $PM_{2.5}$ standards.[135] Establishing December 31, 2014 as the starting point for the first 3 year period under CAA

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[131] General Preamble, 57 FR 13498 (April 16, 1992), at page 13539.
[132] 57 FR 13539
[133] 80 FR 2206, January 15, 2015
[134] The EPA promulgated nonattainment area designations for the 1997 $PM_{2.5}$ NAAQS effective April 2005 (70 FR 944, January 5, 2005 and 70 FR 19844, April 14, 2005). The EPA promulgated nonattainment area designations for the 2006 $PM_{2.5}$ NAAQS effective December 2009 (74 FR 58688, November 13, 2009), March 2011 (76 FR 6056, February 3, 2011), and November 2012 (77 FR 65310, October 26, 2012).
[135] 79 FR 31566 (June 2, 2014) (final rule establishing subpart 4 moderate area classifications and deadline for related SIP submissions) ("Classification and Deadline Rule"). Although the Classification and Deadline Rule did not affect any action that the EPA had previously taken under CAA section 110(k) on a SIP for a $PM_{2.5}$ nonattainment area, the EPA noted that states may need to submit additional SIP elements to fully satisfy the applicable requirements of subpart 4, even for areas with previously approved $PM_{2.5}$ attainment plans, and that the deadline for any such additional plan submissions was December 31, 2014. *Id.* at 31569.

section 189(c) for the 1997 and 2006 $PM_{2.5}$ standards is in keeping with the EPA's historical approach to quantitative milestone dates (*i.e.*, using the due date for the Moderate area plan submission as the starting point for the first 3 year milestone period). Thus, for any area designated nonattainment for the 1997 and/or 2006 $PM_{2.5}$ NAAQS that has not yet attained these NAAQS and therefore continues to have attainment planning obligations for these NAAQS, the state must submit quantitative milestones to be achieved by December 31, 2017 (the first milestone date), at minimum. Additional milestone dates may also apply to such an area depending on the relevant attainment planning period. *See* 40 CFR 51.1013(a)(4).

Regardless of whether or not an attainment plan demonstrates attainment by the statutory attainment date, the EPA requires that all Moderate area $PM_{2.5}$ attainment plans must define appropriate quantitative milestones to be achieved by 4.5 years and 7.5 years following designation of the area. Although it occurs after the Moderate area attainment date, the EPA is requiring Moderate area plans to contain this 7.5 year milestone, even where those plans demonstrate attainment before the milestone would arrive. Where the EPA uses its discretionary authority in CAA section 188(b)(1) to reclassify an area before the Moderate area attainment date applicable to the area, CAA section 189(b)(2) allows the state up to 4 years to submit the required Serious area attainment demonstration and related plan elements, such as quantitative milestones. For example, if the reclassification occurs 4 years after designation, the state may be allowed to submit the Serious area quantitative milestones up to 8 years after designation, well after the second milestone date (7.5 years after designation) has passed. Without the 7.5 year milestone requirement, this circumstance would undermine the purpose of the quantitative

milestone requirement, which is to ensure that states will report to EPA on each nonattainment area's progress toward attainment at regular intervals, even following reclassification.[136]

A similar issue would result in the event that a Moderate area that did demonstrate attainment in the original attainment plan fails to attain by the statutory attainment date. In this case, the area would have failed to meet the attainment date which is as expeditiously as practicable but no later than the end of the sixth calendar year after designation as required by CAA section 188(c)(1). Section 188(b)(2) of the Act allows the Administrator up to 6 months to determine that a Moderate failed to attain and reclassify that area to Serious, which would be at least 6.5 years after designation. As described in Section VI.A.1 of this preamble, the Serious area would have 18 months from reclassification due to a failure to attain (8 years after designation) in order to submit an attainment plan. The EPA has therefore determined that, in order to avoid gaps of greater than 3 years in the implementation of quantitative milestones, all Moderate area attainment plans must contain quantitative milestones to be achieved 4.5 years and 7.5 years after designation and which demonstrate continued progress toward timely attainment of the relevant $PM_{2.5}$ NAAQS. In the event that the area fails to attain, this will provide the EPA with appropriate tools necessary to continue to monitor the area's continued progress toward attainment while the state develops the Serious area attainment plan.

The quantitative milestones contained in the attainment plan for a Moderate nonattainment area should be constructed such that they can be tracked, quantified and/or measured adequately in order for the state to meet its milestone reporting obligations, which

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[136] *See, e.g.,* Addendum at 42016, n. 43 (noting that the plain terms of CAA section 189(c) require that milestones be achieved every 3 years until the area is redesignated attainment and, therefore, do not contemplate any breaks in the milestones due to an area's reclassification).

come due 90 days after a given milestone date. In the Addendum, the EPA suggested some possible metrics that "support and demonstrate how the overall quantitative milestones identified for an area may be met," such as percent implementation of control strategies, percent compliance with implemented control measures, and adherence to a compliance schedule. This list was not exclusive or exhaustive but reflected the EPA's view that the purpose of the quantitative milestone requirement is to provide an objective way to determine whether the area is making the necessary progress towards attainment by the applicable attainment date.[137] The EPA interprets Section 189(c) of the Act to allow states to identify milestones that are suitable for the specific facts and circumstances of the attainment plan for a particular area, so long as they provide an objective means to measure RFP.

This rule requires that each attainment plan for a Moderate $PM_{2.5}$ nonattainment area contain quantitative milestones that provide for objective evaluation of RFP toward attainment in the $PM_{2.5}$ nonattainment area, whether the plan provides for attainment of the $PM_{2.5}$ NAAQS by the statutory attainment date or demonstrates that attainment by such date is impracticable. For this approach, the EPA does not require that such quantitative milestones take any particular form, merely that they provide a means to evaluate progress (*i.e.*, demonstrate RFP) meaningfully. The EPA will review each attainment plan submission on a case-by-case basis to determine whether the quantitative milestones contained in the plan are specific enough to provide an objective means for evaluating the area's progress toward attainment, consistent with the statutory requirements of CAA section 189(c). The EPA recommends that states confer with

[137] Addendum to the General Preamble, 59 FR 41998 (August 16, 1994), at page 42016.

their respective EPA regional office to develop appropriate quantitative milestones. *See* 40 CFR 51.1013(a).

The Addendum stated that the Moderate area quantitative milestones "will be met by showing that emissions reductions scheduled to be made between the SIP due date and the attainment date for these moderate areas were actually achieved. Most of these emissions reductions will result from implementation of RACM (including RACT) as part of the moderate area SIP." However, this rule does not specify that quantitative milestones must be expressed in terms of emissions reductions. The EPA recognizes that it is impractical to expect that a state will always be able to quantify and compare real and projected emissions reductions, and submit a report to the EPA within 90 days of a given milestone as required under CAA section 189(c)(2). Therefore, the final rule requires that, at a minimum, states must include in all attainment plans for Moderate $PM_{2.5}$ nonattainment areas a milestone that all control measures identified and adopted as RACM and RACT for the area have been fully implemented within 4 years of designation. This milestone specifically derives from section 189(a)(1)(C) of the Act, that applies to all Moderate areas and thus represents a milestone that all Moderate areas must meet regardless of whether it is listed explicitly as an individual milestone. *See* 40 CFR 51.1013(a)(1)(iii).

For an area that submitted air quality targets with the RFP plan under the optional provision that was described in Section IV.F of this preamble, an air quality based milestone (i.e., one that is expressed in terms of an ambient $PM_{2.5}$ level) is strongly recommended to be included in order to confirm that the air quality target has been met for the quantitative milestone year. If used, this milestone will be compared to the most recently certified monitored ambient air data as part of the milestone report due after the area reaches each quantitative milestone date.

The EPA recognizes that certified monitored ambient air data are not available for some period after a calendar year ends. As a result, the EPA expects that this quantitative milestone may sometimes be satisfied with data that are over a year old. For example, for Moderate areas having an effective date of designations in April 2015, the first quantitative milestone date will be in October 2019 (3 years after the 18 month SIP due date), and the associated report will be due 90 days later, in January 2020. In this example, the state would likely have to rely upon certified air quality data for 2018 because data for the 2019 calendar year would not yet be fully certified. Additionally, this milestone should normally be reported in the same form as the applicable $PM_{2.5}$ NAAQS. However, the EPA expects that in some circumstances, it may be appropriate to use annual averages instead of the 3 year average to help justify variations due to meteorological occurrences.

c. Comments and Responses. Comment: Some commenters stated the Act may be read to conclude that the requirement to include any quantitative milestones in a Moderate area plan does not apply to a plan demonstrating the impracticability of attaining the NAAQS by the attainment date.

Response: The EPA's longstanding interpretation of CAA section 189(c) as a requirement that applies to all PM_{10} nonattainment area plans, including those demonstrating that attainment by the applicable attainment date is impracticable, is consistent with the purpose and structure of subpart 4. The design of the CAA for PM nonattainment areas combines the requirements of subpart 1 and subpart 4 to support expeditious attainment of the applicable NAAQS. RFP is the prescribed tool available to a state to plan their emission reduction progress toward expeditious attainment. Quantitative milestones are a critical aspect of the CAA and the attainment plan in order for the EPA to monitor the area's RFP toward expeditious attainment

and trigger the appropriate response if RFP is not maintained. The EPA thus determined that allowing an area to simply not submit any quantitative milestones would not afford the EPA the necessary tools to monitor RFP toward expeditious attainment.

2. Milestone Report Submission

a. Summary of the Proposal. Because the statute does not define the parameters of quantitative milestone demonstrations, the EPA has discretion to determine the components of the required demonstration and the form and manner for submission. The proposal took comment on options for doing this. The EPA proposed to require that the milestone report submission must include the following four components: i) a certification by the Governor or Governor's designee that the state's attainment plan control strategy is being implemented as described in the applicable attainment plan, ii) technical support sufficient to document completion statistics for appropriate milestones and to demonstrate that the quantitative milestones have been satisfied and how the emissions reductions achieved to date compare to those required or scheduled to meet RFP, iii) as applicable, an air quality screening analysis to determine if measured air quality progress is consistent with the expected air quality improvement target correlated with the RFP emissions reductions for the previous 3 year period, and iv) an evaluation of whether the $PM_{2.5}$ NAAQS will be attained by the projected attainment date for the area. In addition, the EPA proposed that the milestone report must include a description and schedule for any remedial actions the state has taken or will take to address any failure to meet a quantitative milestone, including the implementation status of contingency measures for failing to meet RFP in the area.

The EPA also sought comment on how electronic reporting could facilitate a state's submission of the required milestone report, how it could accommodate the various narrative and data-dependent components that the EPA proposed be part of such a submission, and what

particular system features might be desirable to accommodate milestone report submissions through the eSIP system.

b. Final Rule. The final rule, mirroring section 189(c)(2) of the Act, requires that each state containing a $PM_{2.5}$ nonattainment area submit to EPA, within 90 days after each milestone date applicable to the area, a demonstration that all measures in the approved plan (including the RFP plan) for the area have been implemented and that the milestone has been met. This rule outlines the content required by the EPA for the quantitative milestone report. The EPA must then determine whether or not a state's demonstration is adequate within 90 days after receiving a demonstration which contains the required information and analysis. The EPA intends to promptly inform the relevant state of any determination that the state has failed to submit a timely quantitative milestone report and any determination that a submitted milestone report is not adequate.

The EPA will work with a state to assist them in meeting the reporting deadline, and expects that, because the report is to be fairly low burden and may be submitted electronically through eSIP, in most cases the state will submit it on time, especially if they have implemented the programs required to meet their milestones. If, however, a state fails to submit a milestone demonstration report by the due date or the EPA determines that a milestone was not met, the final rule requires the state to submit a SIP revision within 9 months of either the missed reporting deadline or the EPA's determination of the state's failure to meet a milestone. According to the statutory requirements of CAA section 189(c)(3), the new SIP revision must assure "that the State will achieve the next milestone (or attain the national ambient air quality standard …, if there is no next milestone) by the applicable date." If a state fails to make a SIP submission to correct a failure to meet RFP expeditiously, sanctions under CAA sections 110(m)

and 179(b) may apply. If a state is unable to correct a failure to meet RFP, this may be evidence that the state cannot practicably attain the NAAQS by the applicable attainment date and may serve as a basis for reclassification of the area to Serious under CAA section 188(b)(1).

As previously noted, the EPA has offered guidance about what the milestone report should contain. The Addendum says, "This report must contain technical support sufficient to document completion statistics for appropriate milestones. For example, the demonstration should graphically display RFP over the course of the relevant 3 years and indicate how the emissions reductions achieved to date compare to those required or scheduled to meet RFP and the required [quantitative] milestones. The calculations (and any assumptions made) necessary to determine the emissions reductions to date should also be submitted. The demonstration should also contain an evaluation of whether the PM_{10} NAAQS will be attained by the projected attainment date."[138] This guidance is still appropriate for states demonstrating compliance with RFP and quantitative milestones for $PM_{2.5}$ NAAQS. The EPA requires that the milestone report submission must include the following components. *See* 40 CFR 51.1013(b).

First, the report must include a certification by the Governor or Governor's designee that the SIP control strategy is being implemented consistent with the RFP plan, as described in the applicable attainment plan. Second, the report must contain technical support, including calculations, sufficient to document completion statistics for each quantitative milestone and to demonstrate that the quantitative milestones have been satisfied and how the emissions reductions achieved to date compare to those required or scheduled to meet RFP. Additionally, the report must include a discussion of whether the $PM_{2.5}$ NAAQS will be attained by the

[138] *Ibid.* at 42017.

projected attainment date for the area. *See* 40 CFR 51.1013(b). The EPA decided not to finalize the proposed requirements to include an air quality screening analysis or the description and schedule for remedial actions taken by the state to address a failure to meet a quantitative milestone. This decision was made because the remaining components of the quantitative milestone report are sufficient to enable the EPA to assess whether the nonattainment area is meeting RFP.

As stated in the Addendum, the milestone report must be submitted from the Governor or Governor's designee to the Regional Administrator of the respective EPA Regional Office serving the submitting state. The EPA will notify the state of its determination (regarding whether or not the state's report is adequate) by sending a letter to the appropriate Governor or Governor's designee. The EPA encourages states to submit milestone reports, including supporting documents, through the agency's electronic SIP (eSIP) submission system in order to simplify the process and reduce resource burden on all sides.

c. Comments and Responses. Comment: Some commenters did not support the proposal and stated that requiring this level of documentation is unnecessary and puts an excessive workload burden on states and local agencies.

Response: The EPA recognizes that there is some level of resources required to address the requirements prescribed by every rule. However, the EPA concluded that the benefit offered to the public by reviewing quantitative milestone reports while assessing whether nonattainment areas are making reasonable further progress toward attaining the $PM_{2.5}$ NAAQS and the associated public health benefits outweigh the anticipated workload burden for states.

Comment: Some commenters stated that the first two components of the quantitative milestone report described in the proposal are sufficient to comply with the requirements of CAA

section 189(c)(2). The commenters stated that the proposed air quality screening analysis is not supported by the statute and is unnecessary if the second component is fulfilled. The commenters stated that the proposed description and schedule for remedial actions the state has taken or will take to address any failure to meet a quantitative milestone is more than what is necessary to demonstrate compliance with RFP milestones and could require revisions to the SIP.

Response: After considering these comments and in an effort to simplify the rule, the EPA decided to eliminate the two proposed requirements for the quantitative milestone report as suggested by these commenters. As stated earlier, this decision was made because the EPA determined that the remaining components of the quantitative milestone report are sufficient to enable the EPA to assess whether the nonattainment area is meeting RFP.

Comment: One commenter stated that, while they would not object to filing periodic reports, as part of their milestone report, the EPA should not insist on the state actually inspecting all covered facilities and indicating that RACT or RACM has not been implemented if a small subset of facilities is found in violation.

Response: It is not the intent of the EPA to require states to physically inspect all covered sources to verify the implementation of required control measures. The intent is that, at the time of the milestone due date, all covered sources would be legally required to have implemented required control measures and the state has reasonably been assured that this occurred.

H. Contingency Measures

1. Summary of the Proposal

The Act requires Moderate $PM_{2.5}$ nonattainment area plans to contain contingency measures consistent with CAA section 172(c)(9). Contingency measures are additional control measures to be implemented in the event that the EPA determines that an area failed to meet RFP

requirements (including associated quantitative milestones) or failed to attain the $PM_{2.5}$ primary standard by the applicable attainment date. These measures must be fully adopted rules or control measures that are ready to be implemented quickly upon failure to meet RFP or failure of the area to meet the standard by its attainment date, and such measures are required to take effect without further action by the state or the EPA. The EPA proposed and sought comment on general requirements for contingency measures for Moderate $PM_{2.5}$ nonattainment areas. The EPA has longstanding interpretations of the statute with respect to the contingency measure requirement, both for PM and for other pollutants, in the General Preamble and Addendum. These documents provide guidance and recommendations for states to follow in submitting contingency measures, and the proposal did not contain any significant changes to the existing guidance and recommendations. However, the EPA sought comment on whether the guidance needed to be revised or expanded. Additionally, as discussed in the proposal, the EPA believes that the D.C. Circuit's decision in *NRDC v. EPA* does not affect the overall contingency measure requirements that were finalized in the remanded 2007 $PM_{2.5}$ Implementation Rule. The EPA determined this because CAA section 172(c)(9) imposes the contingency measure requirement for attainment plans for the $PM_{2.5}$ NAAQS and it is not superseded or subsumed by any specific contingency measure requirements under subpart 4. As a result, the proposal for this rule remained very similar to the final 2007 $PM_{2.5}$ Implementation Rule.

2. Final Rule

Consistent with the proposal, the final rule codifies existing policies on contingency measures, but does not make significant changes to these policies. Although CAA section 172(c)(9) requires contingency measures, the provision does not specify exactly what parameters such measures must meet. The EPA is finalizing an approach to contingency measures for the

$PM_{2.5}$ NAAQS that is similar to the approach recommended in earlier EPA guidance. Specifically, in order for contingency measures to be approvable as part of a state's Moderate area attainment plan submission for the $PM_{2.5}$ NAAQS, the state plan must meet the following general requirements (*See* 40 CFR 51.1014):

1) Contingency measures must be fully adopted rules or control measures that are ready to be implemented quickly upon a determination by the Administrator of the nonattainment area's failure to meet RFP, failure to meet any quantitative milestone, failure to submit a quantitative milestone report or failure to attain the standard by the applicable attainment date.

2) The state's attainment plan submission must contain trigger mechanisms for the contingency measures, specify a schedule for implementation, and indicate that the measures will be implemented with minimal further action by the state or by the EPA.

3) The contingency measures shall consist of control measures that are not otherwise included in the control strategy or that achieve emissions reductions not otherwise relied upon in the control strategy for the area.

4) Contingency measures should provide for emissions reductions approximately equivalent to 1 year's worth of reductions needed for RFP, based on the overall level of reductions needed to demonstrate attainment divided by the number of years from the base year to the attainment year, or approximately equivalent to 1 year's worth of air quality improvement or emissions reductions proportional to the overall amount of air quality improvement or emissions reductions to be achieved by the area's attainment plan.

Regarding the first two points, consistent with prior guidance, states must show that their contingency measures can be implemented with minimal further action on their part and with no additional rulemaking actions such as public hearings or legislative review. After the EPA determines that a moderate $PM_{2.5}$ nonattainment area has failed to meet an RFP requirement or to attain the $PM_{2.5}$ NAAQS, the EPA generally expects all actions needed to effect full implementation of the contingency measures to occur within 60 days after the EPA notifies the state of the area's failure. The EPA intends to notify the state of a failure to meet RFP or to attain the NAAQS by publication of its determination in the *Federal Register*. The state should ensure that the contingency measures are fully implemented as expeditiously as practicable after such notice.[139]

Regarding the third point, the EPA interprets the contingency measure requirement of CAA section 172(c)(9) to require control measures that are not otherwise included in the control strategy or that achieve emissions reductions not otherwise relied upon in the control strategy for the area. However, suitable contingency measures may be measures that were technologically and economically feasible for the area, but did not qualify as RACM or RACT or additional reasonable measures for one or more reasons. For example, a candidate contingency measure may have been deemed technologically and economically feasible, but it was not needed to achieve expeditious attainment in a Moderate area for which the state could demonstrate attainment by the statutory attainment date and therefore was not included as part of the attainment demonstration for the area. It is important that states make decisions concerning contingency measures in conjunction with their determination of the overall control strategy for

[139] *Ibid.* at 42015.

bringing the area into expeditious attainment, and that states first must identify those control measures needed in order to demonstrate expeditious attainment of the standards; any remaining measures should then be considered as candidates for contingency measures.

As discussed in Section IV.D of this preamble, the RACM/RACT provisions in this rule require that, for Moderate areas that cannot practicably attain the NAAQS by the statutory attainment date, states must implement all control measures that they determine to be reasonable (i.e., all technologically and economically feasible measures) for sources in the area. In such cases, the contingency measures for such nonattainment areas would necessarily exceed the criteria for determining whether a measure is reasonable for purposes of RACM/RACT and additional reasonable measures. For example, contingency measures could consist of reasonable controls on sources outside the nonattainment area, early implementation of BACM/BACT on select sources inside the area, other measures identified by the state, or a combination thereof, that collectively provide approximately equivalent to 1 year's worth of emissions reductions/air quality improvement. Such contingency measures would only be triggered in the event the area fails to meet RFP; the EPA does not interpret the requirement for contingency measures for failing to attain the NAAQS by the applicable attainment date to apply to a Moderate area that a state demonstrates cannot practicably attain the NAAQS by the statutory attainment date. Rather, the EPA believes it is appropriate for the state to identify and adopt these measures in a timely way as part of the Serious area attainment plan that it will develop once the EPA reclassifies such an area. However, if a Moderate area that cannot practicably attain the NAAQS fails to meet RFP when reviewed as part of the quantitative milestone either 4.5 or 7.5 years after designation, the requirement to implement contingency measures would be triggered as required by CAA section 172(c)(9). For any Moderate $PM_{2.5}$ nonattainment area, contingency measures

can include measures that achieve emissions reductions on sources located outside the nonattainment area as well as from sources within the nonattainment area, provided that the measures offer reasonable assurance that the appropriate air quality impact will result within the nonattainment area.

The final rule continues to allow states to rely on federal measures (*e.g.* federal mobile source measures based on the incremental turnover of the motor vehicle fleet each year) and local measures already scheduled for implementation that provide emissions reductions in excess of those needed to provide for RFP or expeditious attainment. The key is that the statute requires that contingency measures provide for additional emissions reductions that are not relied on for RFP or attainment and that are not included in the RFP or attainment demonstrations as meeting part or all of the contingency measure requirements. The purpose is "to provide a cushion while the plan is being revised to meet the missed milestone." Nothing in the statute precludes a State from implementing such measures before they are triggered. Additionally, the EPA determined that the court ruling upholding contingency measures that were previously required and implemented where they were in excess of the attainment demonstration and RFP for ozone attainment plans necessitates similar treatment for $PM_{2.5}$ NAAQS.[140] The EPA has approved numerous SIPs under this interpretation, *i.e.*, SIPs that use as contingency measures one or more federal or local measures that are in place and provide reductions that are in excess of the reductions required by the attainment demonstration or RFP plan.[141]

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[140] *See LEAN v. EPA*, 382 F.3d 575 (5th Cir., 2004).
[141] *See*, e.g., 62 FR 15844 (April 3, 1997); 62 FR 66279 (December 18, 1997); 66 FR 30811 (June 8, 2001); 66 FR 586 and 66 FR 634 (January 3, 2001); 78 FR 64402 (October 29, 2013).

For these reasons, the EPA concluded that this approach is reasonable for Moderate $PM_{2.5}$ nonattainment areas that can demonstrate attainment by the statutory attainment date, as the state would calculate the emissions reductions needed for RFP separately from the control strategy determination for such an area. However, crediting an area for "excess" emissions reductions to satisfy the contingency measure requirement is not allowable for Moderate areas that cannot practicably attain by the statutory attainment date. Under the EPA's approach for calculating RFP for such areas, RFP would be calculated directly from the projected emissions reductions from all control measures identified for the area (as RACM and RACT or additional reasonable measures), such that there should be no difference between emissions reductions estimated from control measures and those estimated for demonstrating RFP.

Finally, consistent with the EPA's past approach for contingency measures for $PM_{2.5}$ nonattainment areas, the EPA expects that the emissions reductions from contingency measures should be approximately equivalent to 1 year's worth of emissions reductions while the state is revising its attainment plan for the area. States should explain the amount of anticipated emissions reductions to be accomplished by the contingency measures outlined in the plan. In the rare event that an area is unable to identify contingency measures to account for approximately 1 year's worth of emissions reductions, the state should provide a reasoned justification why the smaller amount of emissions reductions is appropriate. As described in Section IV.F of this preamble, the EPA requires an approach for interpreting the statutory RFP requirement that would require demonstrating RFP based on reductions from sources located inside the nonattainment area. Keeping with the historic linkage between RFP and contingency measures, the EPA is also finalizing a similar approach for calculating 1 year's worth of emissions reductions for purposes of adopting appropriate contingency measures. That is, the EPA's

approach for determining the *level* of emissions reductions for contingency measure purposes is to calculate the annual reductions in emissions of direct $PM_{2.5}$ and $PM_{2.5}$ plan precursors needed from sources located inside the nonattainment area. As explained earlier, however, some or all of the contingency measures reductions can come from outside the area if they are demonstrated to produce the appropriate air quality impact within the nonattainment area.

This rule requires that states must implement contingency measures after the EPA determines that the area has either failed to meet RFP requirements, failed to meet any quantitative milestone, failed to submit a quantitative milestone report, or failed to attain the standards by the applicable attainment date. The purpose of the contingency measure provision is to ensure that corrective measures are put in place automatically at the time that the EPA makes its determination that an area has either failed to meet RFP or failed to meet the standard by its attainment date. The EPA is required to determine within 90 days after receiving a state's quantitative milestone demonstration, and within 6 months after the attainment date for an area, whether these requirements have been met. The additional consequences for states with areas that fail to attain the NAAQS or to meet RFP are described in section 179(d) of the CAA and discussed in Section V of this preamble.

See Section IV.A of this preamble for a discussion of the due dates for submission of contingency measures and other attainment plan elements.

3. Comments and Responses

Comment: Commenters stated that requiring contingency measures in areas with mature air pollution control programs is very challenging because they already have developed aggressive control measures to meet CAA requirements and support expeditious attainment. Commenters asserted that it would be extremely difficult to develop further control measures to

meet any contingency measure requirements. Commenters objected to the proposed requirement that contingency measures must be approximately equivalent to 1 year's worth of emissions reductions because it is a departure from existing guidance which states the contingency emissions reductions "should be" approximately equal and because sometimes identifying control measures for this level of reductions is just not possible. Commenters advocated that EPA should provide a more reasonable approach to the contingency measure requirement, but did not provide specific recommendations. Other commenters stated that contingency measures should provide 1 year's worth of emissions reductions needed for RFP.

Response: The EPA acknowledges that states containing areas with more longstanding and pervasive nonattainment problems may already have implemented many control measures for purposes of attaining the NAAQS, and there may be fewer sources and measures available to meet the contingency measure requirements of the statute. However, the EPA notes that section 172(c)(9) of the CAA explicitly requires states to adopt contingency measures to apply in the event of failure to meet RFP or failure to attain the NAAQS as a required component of all attainment plans. Typically, contingency measures will be comprised of measures that a state and the EPA have determined are not required to meet RACM/RACT or other requirements, *e.g.*, on the grounds that they are more technologically or economically challenging. As a result, such measures may not be required as RACM/RACT, but are nevertheless available for use as contingency measures. Another approach to contingency measures, if appropriate, would be to rely on control measures imposed on sources outside the boundaries of the designated nonattainment area. Such contingency measures require adequate support to establish that the reductions would have the intended impacts within the nonattainment area, but can be a source of additional measures for this purpose.

Finally, the EPA notes that its longstanding guidance is that contingency measures should provide approximately 1 year's worth of RFP, but this amount may vary based upon appropriate facts and circumstances of each unique nonattainment area. As discussed, states should explain the amount of anticipated emissions reductions to be accomplished by the contingency measures outlined in the plan. In the rare event that an area is unable to identify contingency measures to account for approximately 1 year's worth of emissions reductions, the state should provide a reasoned justification why the smaller amount of emissions reductions is appropriate.

Comment: Commenters stated that "excess" emissions reductions (i.e., emission reduction measures that are included in a modeled attainment demonstration indicating that the area will improve air quality to well below the standard) should not be used as contingency measures in the event an area actually fails to attain. Commenters asserted that the failure to attain should be considered a demonstration that excess emissions reductions do not exist. Further, the commenters stated that excess reductions do not provide the public health benefit intended by Congress. Other commenters stated that Moderate areas that cannot attain by the statutory attainment date could also have excess emissions reductions creditable as contingency measures.

Response: In keeping with longstanding practice, the final rule allows excess emissions reductions to be credited as contingency measures in plans that demonstrate attainment but not for plans that demonstrate an impracticability to attain. This allows nonattainment areas to credit emissions reductions beyond those planned to satisfy attainment plan requirements as meeting part or all of the contingency measure requirements. This allowance is further supported by the court's ruling in *LEAN v. EPA*, which found that emissions reductions in excess of what were needed for the attainment demonstration and RFP in ozone attainment plans are creditable for

contingency measures. Because the contingency measures requirement for both ozone and $PM_{2.5}$ originates in CAA section 172(c)(9), it is applicable for all areas designated nonattainment for any NAAQS. Therefore, the EPA concluded that the same approach is appropriate for Moderate $PM_{2.5}$ nonattainment areas that can demonstrate attainment by the statutory attainment date. Allowing "excess" emissions reductions affords proper credit for these areas as they continue to make progress toward attainment while the new SIP is developed for the area. Additionally, in support of the overarching goal of the CAA, public health will benefit from the excess emissions reductions. However, such an allowance for a Moderate area that cannot practicably attain is not acceptable because all emissions reductions anticipated from control measures while developing the attainment plan should be accounted for in the RFP plan. With all of these reductions accounted for in the RFP plan, there are no excess reductions beyond the attainment planning period to be credited as contingency measures.

I. Attainment Dates

1. Summary of Proposal

The proposal described the CAA section 188(c)(1) requirement for Moderate areas to attain the standard as expeditiously as practicable, but no later than the end of the sixth calendar year after the "area's designation as nonattainment." For purposes of clarity, the EPA proposed to interpret the term "area's designation" as meaning "the area's effective date of designation," consistent with the agency's past approach for implementing the 1997 and 2006 $PM_{2.5}$ NAAQS, and with its approach for implementing the NAAQS for other criteria pollutants under part D, title I of the CAA. The EPA requested comment on this interpretation. The preamble to the proposal also described the process for determining whether an area has attained the NAAQS.

2. Final Rule

The final rule maintains the requirement interpreting of CAA section 188(c)(1) to mean that the attainment date must be as expeditiously as practicable, but no later than the end of the sixth calendar after the *effective date* of an area's designation. *See* 51.1004(a)(1). Thus, as an example, for areas designated nonattainment in the first round of designations for the 2012 $PM_{2.5}$ NAAQS, the effective date of designation is April 15, 2015, and the Moderate area attainment date would be as expeditious as practicable, but no later than December 31, 2021 (*i.e.*, the end of the sixth calendar year after designation). Serious area attainment dates are discussed fully in Section VI.I of this preamble.

The EPA's approach to approving an attainment date for a $PM_{2.5}$ nonattainment area will be different for a Moderate area that cannot practicably attain the relevant $PM_{2.5}$ NAAQS by the end of the sixth calendar year after designation. Given that the agency will reclassify any such area to Serious and thereby trigger additional Serious area requirements for the area, the EPA will approve an attainment date for the area when it takes action on the Serious area attainment plan submitted for the area. In the interim, before the EPA takes action to reclassify the area, the statutory Moderate area attainment date will continue to apply to such an area. *See* 40 CFR 51.1000 and 51.1004(a)(1)(ii). As discussed more fully in Section VI.I of this preamble, when the EPA reclassifies the area, then the presumptive attainment date for the area will be as expeditious as practicable, but no later than the end of the tenth calendar year following designation.

Once an area has an approved attainment date and has implemented its plan, the EPA has the responsibility for determining whether the nonattainment area has attained the standard by its applicable attainment date. Section 179(c)(1) of the CAA requires the EPA to make determinations of attainment no later than 6 months following the attainment date for the area.

Under CAA section 179(c)(2), the EPA must publish a notice in the *Federal Register* identifying those areas that failed to attain by the applicable attainment date. The statute further provides that the EPA may revise or supplement its determination of attainment for the affected areas based upon more complete information or analysis concerning the air quality for the area as of the area's attainment date.

Section 179(c)(1) of the CAA provides that the EPA is to base the attainment determination for an area upon an area's "air quality data as of the attainment date." The EPA will make the determination of whether an area's air quality is meeting the $PM_{2.5}$ NAAQS by the applicable attainment date based upon data gathered from the air quality monitoring sites that have been entered into the EPA's Air Quality System (AQS) database. The state is not required to make any special or additional submission in order for EPA to make a determination of attainment.

A Moderate $PM_{2.5}$ nonattainment area's air quality status is determined in accordance with Appendix N of 40 CFR part 50. To show attainment of the current 24-hour and annual standards for $PM_{2.5}$, data from the most recent 3 consecutive years prior to the area's attainment date must show that $PM_{2.5}$ concentrations over the prior 3 year period are at or below the levels of the standards. A complete year of air quality data, as described in part 50, Appendix N, is comprised of all 4 calendar quarters with each quarter containing data from at least 75 percent of the scheduled sampling days.

The EPA will begin processing and analyzing data related to the attainment of Moderate $PM_{2.5}$ nonattainment areas after the applicable attainment date for the affected areas. Current EPA regulations, under 40 CFR part 58, set the deadline for the state to submit air quality data into the AQS database as no later than 90 days after the end of the calendar year.

While the EPA may determine that an area's air quality data indicate that an area may be meeting the $PM_{2.5}$ NAAQS for a specified period of time, this does not eliminate the state's responsibility under the Act to adopt and implement an approvable attainment plan unless the area also has been granted a clean data determination. If the EPA determines that an area has attained the standard as of its attainment date, the area will remain designated as nonattainment until the state has submitted an acceptable redesignation request and maintenance plan, and EPA has approved them.

In order for an area to be redesignated as attainment, the state must comply with the five requirements listed under section 107(d)(3)(E) of the CAA. Briefly, this section requires that:

1) The EPA has determined that the area has attained the $PM_{2.5}$ NAAQS;
2) The EPA has fully approved the applicable state implementation plan;
3) The improvement in air quality is due to permanent and enforceable reductions in emissions;
4) The EPA has fully approved a maintenance plan for the area; and
5) The state(s) containing the area or portions of the area have met all applicable requirements under CAA section 110 and part D.[142]

J. Attainment Date Extensions

1. Attainment Date Extension Criteria

a. Summary of Proposal. Subpart 4 of title I of the CAA provides the EPA with authority to grant up to two 1-year extensions of the attainment date for a Moderate area that otherwise

[142] *See* "Procedures for Processing Requests to Redesignate Areas to Attainment," Memorandum from John Calcagni, USEPA Office of Air Quality Planning and Standards, Director, Air Quality Management Division, September 4, 1992.

could be found to have failed to attain the relevant $PM_{2.5}$ NAAQS, if the area can meet specific statutory criteria related to monitored air quality in the area and the implementation of measures in the attainment plan. Under CAA section 188(d), a state may apply to the EPA for an extension of a Moderate area's attainment date of 1 additional year (the "Extension Year") if "(1) the state has complied with all requirements and commitments pertaining to the area in the applicable implementation plan; and (2) no more than one exceedance of the 24-hour [NAAQS] level for PM_{10} has occurred in the area in the year preceding the Extension Year, and the annual mean concentration of PM_{10} in the area for such year is less than or equal to the standard level." Section 188(d) of the CAA also provides for the possibility that the EPA may grant a second 1-year extension if the Moderate area meets specific criteria. The proposal took comment on two ambiguous aspects of this language that warrant further interpretation through this rule.

First, the proposal addressed the statutory language explicitly setting ambient air quality conditions for an attainment date extension in terms that relate factually to the 24-hour PM_{10} NAAQS that was in effect at the time of the 1990 Amendments of the CAA, which has a statistical form that is substantially different from the 24-hour $PM_{2.5}$ NAAQS. The requirement in CAA section 188(d)(2) states that an extension may be granted if "no more than one exceedance of the 24-hour national ambient air quality standard level for PM_{10} has occurred in the area in the year preceding the Extension Year, and the annual mean concentration of PM_{10} in the area for such year is less than or equal to the standard level." The proposal noted that the form of the 2006 24-hour $PM_{2.5}$ NAAQS is a percentile-based form and not a "one expected exceedance" form as is the PM_{10} NAAQS, and therefore the statutory language requires some interpretation with regard to how it applies to the $PM_{2.5}$ NAAQS.

The EPA included a proposed option and requested comment on two other alternatives. The preferred proposed approach would only require a state to demonstrate that in the year prior to the applicable attainment date for the area, a Moderate area did not exceed the level of (*i.e.*, had clean data for) the specific $PM_{2.5}$ NAAQS for which the area is designated nonattainment (the "applicable NAAQS") and for which the state is seeking the extension of the attainment date. The second approach would require that a state demonstrate that in the year prior to the applicable attainment date for an area, the Moderate area did not exceed the level of the specific $PM_{2.5}$ NAAQS for which the area is designated nonattainment (the applicable NAAQS), and did not exceed the most stringent level of any other $PM_{2.5}$ NAAQS in effect nationally at the time the area was designated for the applicable NAAQS. The third approach would require that a state demonstrate that in the year prior to the applicable attainment date for an area, the Moderate area did not have more than one exceedance of the level of the 24-hour $PM_{2.5}$ standard, and that the annual mean concentration of $PM_{2.5}$ in the area for the attainment year was less than or equal to the annual standard, regardless of the NAAQS for which the state is seeking an attainment date extension.

Second, the proposal addressed how the language of CAA section 188(d)(2) should apply to the $PM_{2.5}$ NAAQS to the extent that it does not specify whether the air quality criteria for an attainment date extension apply equally for a Moderate area designated nonattainment for both the 24-hour and annual standards, or for just one of the standards. In practice, most areas designated nonattainment for the PM_{10} NAAQS following passage of the 1990 CAA Amendments were designated nonattainment only for the 24-hour PM_{10} NAAQS, with a few designated for only the annual PM_{10} NAAQS or for both the 24-hour and the annual PM_{10} NAAQS. The 24-hour NAAQS has served as the "controlling" (*i.e.*, functionally more stringent)

PM_{10} standard, such that the agency's experience to date in granting PM_{10} Moderate area attainment date extension requests has been limited to extending the attainment date for the 24-hour PM_{10} NAAQS.[143] The situation is distinctly different for $PM_{2.5}$ nonattainment areas, as the specific facts and circumstances of a particular area may warrant a nonattainment designation for either the 24-hour standard or the annual standard, but often not both. In most cases, for instance, the current nonattainment areas for $PM_{2.5}$ are designated either for the 1997 annual NAAQS or for the 2006 24-hour NAAQS, but not both.[144] For example, the EPA recently promulgated designations for areas violating only the annual $PM_{2.5}$ NAAQS revised in 2012, not the 24-hour NAAQS, which was retained at the level established during the 2006 PM NAAQS review. If a $PM_{2.5}$ nonattainment area is designated only for the 24-hour or only for the annual $PM_{2.5}$ NAAQS, this situation raises the question of how CAA section 188(d)(2) air quality criteria for both standards should apply to such a $PM_{2.5}$ NAAQS nonattainment area if the state seeks an extension of the applicable attainment date for such area.

Regarding the "requirements and commitments" criterion, the EPA proposed to interpret this provision to mean that the state has adopted and is implementing the control measures in the SIP submission it made to address the attainment plan requirements for the applicable $PM_{2.5}$ NAAQS. The proposal also described a second potential interpretation, in which the state would not be eligible for an attainment date extension unless it has adopted and submitted its Moderate area SIP *and* has received full approval from the EPA.

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[143] For examples of the EPA actions to extend attainment dates for Moderate PM_{10} areas, *see* 61 FR 20730 (May 8, 1996), 61 FR 66602 (December 18, 1996), and 66 FR 32752 (June 18, 2001).
[144] Nonattainment areas designated for both the 24-hour and annual $PM_{2.5}$ NAAQS are located in central and southern CA.

b. Final Rule. The EPA received a number of comments on the attainment date extension criteria. With respect to the criterion requiring compliance with all requirements and commitments in the applicable implementation plan, several commenters agreed with the EPA's proposed approach that the state must have adopted and submitted its Moderate area SIP but does not need to have full approval of the plan by the EPA in order to receive an extension. These commenters indicated that a state should not be penalized for a failure by the EPA to take timely action on the implementation plan. Some commenters opposed the proposed approach, stating that an area's attainment date is not predetermined as the end of the sixth calendar year after designation, but instead is to be "as expeditiously as practicable," and no later than the end of the sixth calendar year. For this reason, the commenters stated that the actual attainment date to be extended would not be known until after approval of the SIP by the EPA.

After considering the comments received on this issue, the EPA is finalizing an approach similar to the preferred option in the proposal. This interpretation is based on the plain language of CAA section 188(d) that does not explicitly require that the state comply with all requirements pertaining to the area in the CAA, but merely requires that the state comply with all requirements in the applicable SIP.[145] In other words, the EPA believes that CAA section 188(d)(1) should be interpreted to mean that so long as the state has submitted the necessary attainment plan for the area for the applicable $PM_{2.5}$ NAAQs and is implementing the control measures in the submission, the fact that the EPA has not yet acted on such submission to make it an approved part of the applicable SIP should not be a barrier to the state obtaining an extension of the

[145] This interpretation as applied to CAA section 188(e) for Serious area attainment date extensions was upheld by the Ninth Circuit Court of Appeals in *Vigil v. Leavitt*, 366 F.3d 1025, amended at 381 F.3d 826 (9th Cir. 2004).

attainment date under CAA section 188(d)(1). *See* section 51.1005(a)(1) of the CAA. For the same reason, the EPA also proposes to read this provision not to bar an extension if all or part of an area's Moderate area plan is disapproved or has been promulgated by the EPA as a FIP. In the case that the "applicable implementation plan" is a FIP (or combination of SIP and FIP), then the EPA requires the state to have implemented the control measures contained therein in order to meet the statutory criteria at CAA section 188(d)(1) for a Moderate area attainment date extension.

With respect to the air quality criterion, several commenters supported the EPA's preferred option because it would require an area to show clean data only for the specific standard for which it is seeking an extension year. Some commenters acknowledged that a literal reading of the statute may seem to require a showing of clean data for both the annual and 24-hour $PM_{2.5}$ standards in order to receive an extension, but suggested that this interpretation would not make sense under the circumstance where the two standards have different attainment dates. The commenter believed it would lead to absurd results if, in order to receive an extension for one standard, an area were required to show clean data for the other standard for which the attainment date had not yet passed. On the other hand, other commenters favored the option that would require clean data for both standards in order to obtain an extension for one standard because they believed that only requiring clean data for one standard would allow the area to avoid or delay achieving additional emissions reductions.

After considering the comments on the air quality criterion, the EPA has decided to finalize the approach that would require an area to show clean data during the attainment year only for the specific standard for which it is seeking an extension. *See* 40 CFR 51.1005(a)(1). Under this approach, the EPA interprets the requirement to demonstrate that the area had "no

more than one exceedance" of the 24-hour $PM_{2.5}$ NAAQS to mean that the state must simply demonstrate that the area had "clean data" in the attainment year. Thus, a state seeking an attainment date extension for a Moderate nonattainment area for a 24-hour $PM_{2.5}$ NAAQS would be required to demonstrate that the area had clean data with respect to the statistical form of that particular standard (i.e., for the 2006 $PM_{2.5}$ NAAQS, the 98^{th} percentile value did not exceed 35 $\mu g/m^3$) in the calendar year prior to the applicable attainment date for the area. The state would not have to demonstrate that the area also had clean data for any other $PM_{2.5}$ NAAQS, including any annual $PM_{2.5}$ NAAQS or later revision of the 24-hour $PM_{2.5}$ NAAQS. Likewise, a state seeking an attainment date extension for an annual $PM_{2.5}$ NAAQS would be required to demonstrate that the area had clean data for that particular standard (i.e., for the 2012 annual $PM_{2.5}$ NAAQS, the annual mean value did not exceed 12.0 $\mu g/m^3$) in the calendar year prior to the applicable attainment date for the area, but would not have to demonstrate that the area had clean data for any other $PM_{2.5}$ NAAQS.

The EPA believes this interpretation of CAA section 188(d)(2) is appropriate for two main reasons. First, while most PM_{10} nonattainment areas were designated nonattainment for either just the 24-hour PM_{10} NAAQS or for both the 24-hour and annual PM_{10} NAAQS, the majority of current $PM_{2.5}$ nonattainment areas are, in contrast, designated for either the 24-hour or the annual $PM_{2.5}$ NAAQS, and should arguably only need to demonstrate clean data for the NAAQS for which the area is designated nonattainment. For those few $PM_{2.5}$ nonattainment areas designated for both 24-hour and annual $PM_{2.5}$ NAAQS, the EPA believes it also is appropriate that a state must only demonstrate clean data for the specific NAAQS for which the state is seeking an attainment date extension because such an approach is consistent with the statute's overall approach to designating nonattainment areas and implementing control

strategies for each separate $PM_{2.5}$ NAAQS. Second, if an area is designated as nonattainment for both the 24-hour and annual $PM_{2.5}$ standards and receives an extension for one standard while still working toward a later attainment date for the other standard, public health protection would not be delayed because the state would still be subject to the ongoing mandate to adopt and implement measures to ensure expeditious attainment of the other standard.

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

2. Process for Attainment Date Extension Request Submissions

a. Summary of Proposal. The proposal recognized that CAA section 188(d) does not specify the process by which the state should submit a Moderate area attainment date extension request, nor how the EPA should evaluate and act upon such a request. The proposal described the elements that the state would be required to submit for the various options proposed regarding the CAA section 188(d) extension criteria for 1) compliance with requirements and commitments in the applicable SIP, and 2) air quality data. The proposal suggested that any Moderate area extension request should be submitted to the EPA by the attainment date for the area (*i.e.*, by December 31 of the attainment year), and it proposed requiring the state to submit certified air quality data for the attainment year to the EPA by February 28 of the following year in order for the EPA to issue a determination within 6 months of the attainment date regarding whether the area attained or failed to attain. The proposal stated that an attainment date extension should be granted only after the agency provides notice in the *Federal Register* and an opportunity for the public to comment. Lastly, the proposal clarified that any 1-year extension would extend from January 1 to December 31 for the year following the year including the December 31 attainment date.

b. Final Rule. As discussed in the previous section, in order for the EPA to make a decision on whether to grant a 1-year attainment date extension, the state needs to submit sufficient information to demonstrate that it has both complied with applicable requirements and commitments in the applicable implementation plan, and that it has clean data for the attainment year. Under the final rule, a state would have to demonstrate that control measures have been submitted in the form of a SIP revision, and that RACM and RACT and additional reasonable measures for sources in the area have been implemented. The SIP revision would need to have been adopted and submitted by the state, but it would not need to have been approved by the EPA in order for the state to qualify for an extension. *See* 40 CFR 51.1005(a)(1)(i). The state also would need to have "clean" air quality data in the attainment year, as explained in the previous section. *See* 40 CFR 51.1005(a)(1)(ii)-(iii). Any decision made by the EPA to extend the attainment date for an area would be based on facts specific to the nonattainment area at issue.

Some commenters suggested that in some cases a state will not know if it should seek an extension request until after the attainment date has passed, particularly for areas that commonly have higher air quality levels in the cooler months at the end of the calendar year. The commenter recommended that states should have until February 28 of the following year to submit an extension request along with certified air quality data. Other commenters stated that there is no legal basis for requiring the certification of monitoring data by February 28th of the following year, and therefore it should not be a requirement that could potentially disqualify a state from having an extension request be approved.

The EPA considered these comments in light of the EPA's obligation under the CAA to issue a determination of attainment or failure to attain within 6 months of the original attainment

date. After considering these comments, the EPA strongly recommends that a state should submit a Moderate area 1-year extension request to the appropriate EPA Regional Office by February 28 of the following year. In addition, the EPA strongly recommends that the state provide certified air quality data for the previous calendar year by this date or as close to this date as possible. The EPA understands that there may be certain situations that prevent the full certification of filter-based $PM_{2.5}$ monitoring data by this date. If air quality data for the previous full calendar year has not been fully certified by February 28, the extension request should include any available preliminary data the state can provide. Submission of the necessary air quality data must occur as soon as possible after the attainment date to enable the EPA to review the state's request expeditiously and take appropriate action on the request prior to the date by which the EPA is required to make a determination that the area failed to attain by its Moderate area attainment date, *i.e.*, within 6 months of the applicable attainment date (*see* the discussion of reclassification in Section V of this preamble).

As indicated in the proposal, the EPA believes that an attainment date extension should only be granted after the agency provides notice in the *Federal Register* and an opportunity for the public to comment. A notice-and-comment rulemaking allows for the EPA to adequately evaluate whether the area meets the air quality and program implementation criteria, and to consider other relevant facts and information presented by the state and the public in determining whether the extension request should be granted or denied. This process also is consistent with past practice by the EPA in granting attainment date extensions, most recently for ozone nonattainment areas.

Regarding the extension period, the EPA interprets CAA section 188(d) to authorize the EPA to stipulate that any extension would begin on January 1 and end on December 31 of the

extension year, and these dates would not depend on when the state submitted its request for an extension or was granted the extension by the EPA. The EPA is finalizing this interpretation at 40 CFR 51.1005(a)(4). The EPA believes this is a reasonable approach, as the original attainment date for the area will either be the end of the sixth calendar year following designation of the area, or the end of an earlier calendar year if the state demonstrated that it could advance attainment by at least 1 year. In addition, compliance with the relevant NAAQS will be evaluated based on monitored data collected over a full calendar year (*i.e.*, over the period beginning January 1 and ending December 31), so starting the extension year on January 1 is logical.

As noted earlier in this discussion of Moderate area attainment date extensions, CAA section 188(d) provides that a state may seek up to two 1-year extensions of the Moderate area attainment date if it meets the applicable criteria of CAA sections 188(d)(1) and 188(d)(2). The statute makes no distinction between the criteria that must be met for the first 1-year extension and the criteria for the second 1-year extension. Therefore, for a second 1-year attainment date extension request, the EPA intends to apply the same interpretations of the statutory criteria as described earlier in this section, including the recommended deadlines for the state to submit the extension request and the certified air quality data.

c. Comments and Responses. Comment: Some commenters described the situation where the EPA has approved a Moderate area attainment date that is earlier than the latest date allowed by the statute (for example, assume the approved attainment date is the end of the 5th calendar year after designation). The commenter suggested that if the area was unable to attain by its "earlier" approved attainment date, CAA section 188(d) should be interpreted in a way that would not require the state to submit a request for an attainment date extension. The commenter suggested that the state should only be required to meet the CAA section 188(d) requirements if

the area is seeking an extension beyond the latest Moderate area attainment date allowed by statute (i.e. the end of the sixth calendar year after designations).

Response: The EPA does not agree with the commenter because the statute appears to address this situation clearly. Section 188(c)(1) of the CAA states that the Moderate area attainment date is "as expeditiously as practicable but no later than the end of the sixth calendar year after the area's designation as nonattainment." If the area had provided an attainment demonstration supporting the approval of an earlier attainment date by the EPA, then that approved attainment date is then regarded as the "applicable attainment date" for that area. Section 188(d)(1) of the CAA of the statute then enables the EPA to grant a 1-year extension for the "date specified in paragraph (c)(1)," which in this case would be the earlier attainment date.

V. Reclassification of a $PM_{2.5}$ Moderate Nonattainment Area to Serious

As discussed elsewhere in this preamble, subpart 4, part D of title I of the CAA establishes a two-tier classification system for areas designated nonattainment for the $PM_{2.5}$ NAAQS. While all areas designated nonattainment are initially classified as Moderate, CAA section 188(b) describes two pathways by which the EPA has the authority and/or the duty to reclassify a Moderate nonattainment area to a Serious nonattainment area. Pursuant to CAA section 188(b)(1), the EPA has general discretionary authority to reclassify from Moderate to Serious any area that the Administrator determines cannot practicably attain the NAAQS by the applicable Moderate area attainment date. Pursuant to CAA section 188(b)(2), the EPA has a mandatory duty to reclassify from Moderate to Serious any area that fails to attain the NAAQS

by the applicable Moderate area attainment date. Both of these pathways are more fully described in the following sections.[146]

[146] Note that a reclassification for a multi-state nonattainment area will be done in a single action by the EPA; separate actions are not needed to reclassify the portion of each state comprising the multi-state nonattainment area.

A. Discretionary Authority

1. Summary of Proposal

The proposal provided background on the EPA's discretionary authority to reclassify a Moderate area to Serious. It proposed to interpret the statute to give EPA broad authority to reclassify based on available information, noting that the EPA could base this determination upon whatever factors are pertinent. The proposal sought comment on whether EPA should discretionarily reclassify an area without a request or submission from the affected state. The proposal also addressed the mandatory statutory timing for discretionary reclassification (i.e., within 18 months of the moderate area SIP due date), and took comment on the appropriateness of EPA acting to reclassify an area beyond 18 months after the Moderate area SIP due date, including right up to the Moderate area attainment date.

2. Final Rule

The final rule remains largely unchanged with regard to this issue. The EPA's discretionary authority to reclassify a Moderate area to Serious derives from language in section 188(b)(1) of the CAA, which provides that: "The Administrator may reclassify as a Serious PM_{10} nonattainment area… any area that the Administrator determines cannot practicably attain the [NAAQS]… by the attainment date… for Moderate Areas." The use of this discretionary authority thus would be triggered by the EPA making a determination that the Moderate area in question cannot practicably attain by its statutory attainment date.

The CAA does not specify the basis on which the EPA may make a determination that the area cannot practicably attain by the applicable attainment date. In the General Preamble, the EPA explained that the agency could base this determination upon whatever facts are pertinent, and could do so whether or not the state in question has submitted a Moderate area attainment

plan, and whether or not the state has made the demonstration contemplated in CAA section 189(a)(1)(B).[147] The EPA may make such a determination based on evaluation of the attainment plan for the Moderate area in question, or based on other facts known to the agency. As discussed earlier in this preamble, the attainment plan that a state would submit for a Moderate nonattainment area must include either a demonstration that the area will attain the NAAQS by the statutory Moderate area attainment date or a demonstration that attaining by the statutory Moderate area attainment date is impracticable. If the state makes and the EPA concurs with an impracticability demonstration submitted as part of the attainment plan, then the demonstration could serve as the basis for the EPA initiating a notice-and-comment rulemaking to reclassify the area to Serious.

However, the CAA does not specify the basis for the EPA's exercise of its discretionary authority and does not require the EPA to make its determination based on a submission from the state. Indeed, such a prerequisite would be illogical in the case of a state that fails to make any attainment plan submission or fails to address the issue of the need for reclassification in such submission. The EPA believes that while a Moderate area impracticability demonstration as contemplated in CAA section 189(a)(1)(B) is desirable in order to help the agency make a determination that the area cannot practicably attain by its attainment date, such a demonstration is not necessary to trigger action by the EPA to reclassify a Moderate area to Serious. The statute does not prohibit the EPA from using the weight of available evidence, including information available in the public record of a state, to make such a determination, even in the absence of a complete attainment plan submission.

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[147] *See* the *Federal Register* published on April 16, 1994 (57 FR 13498, 13537 and 13538).

Regarding the timing of discretionary reclassifications, CAA section 188(b)(1)(B) establishes timeframes by which EPA is to act if it intends to exercise its discretionary authority to reclassify areas as appropriate following the Moderate area attainment plan due date, stating that "the Administrator shall reclassify appropriate areas within 18 months after the required date for the state's submission of a SIP for the Moderate Area." In the case of areas designated nonattainment for the 2012 $PM_{2.5}$ NAAQS in the first round of designations, states will be required by statute to submit a Moderate area attainment plan within 18 months of the date of designation (April 2015), or no later than October 2016. Pursuant to CAA section 188(b)(1)(B), the EPA would then have until April 2018 (18 months following the Moderate area attainment plan submission deadline) to use its discretionary authority to reclassify any area that the EPA determines at that time cannot practicably attain by the Moderate area attainment date of December 2021.

However, as noted earlier, there may be situations in which it may be appropriate to reclassify an area at a point in time more than 18 months after the SIP due date. On this issue, the General Preamble stated that:

> "…under the plain meaning of the terms of section 188(b)(1), EPA has general discretion to reclassify at any time before the applicable attainment date any area EPA determines cannot practically attain the standards by such date. Accordingly, CAA section 188(b)(1) is a general expression of delegated rulemaking authority. In addition, subparagraphs (A) and (B) of CAA section 188(b)(1) mandate that the EPA reclassify at specified timeframes any areas it determines appropriate for reclassification at those dates. These subparagraphs do not restrict the general authority but simply specify that, at a minimum, it must be exercised at certain times."[148]

[148] *Ibid.* at 13537.

The EPA continues to consider this the correct interpretation of the statutory requirements concerning its authority to reclassify a Moderate nonattainment area to Serious at any time prior to the area's Moderate area attainment date, if the agency determines that the area cannot practicably attain the relevant $PM_{2.5}$ NAAQS by that date. *See* Section VI.A.2 of this preamble for a discussion of the due dates for submission of attainment plan elements for areas that receive a discretionary reclassification.

The EPA emphasizes that a state with an area designated as nonattainment for the $PM_{2.5}$ NAAQS is required to meet all Moderate area attainment plan requirements, even after the EPA reclassifies the area to Serious. Section 189(b)(1) of the CAA states clearly that "in addition to" the Moderate area attainment plan requirements, states with areas reclassified to Serious must also meet Serious area attainment plan requirements, *i.e.*, the reclassification does not eliminate the statutory obligation to meet Moderate area attainment plan requirements.[149] Thus, the EPA believes that reclassifying Moderate areas to Serious at any time under its discretionary authority does not provide incentives to delay development and implementation of control measures by excusing states from meeting substantive Moderate area attainment plan requirements or by extending the applicable attainment date. The EPA articulated this position in the General Preamble, explaining that this interpretation:

> … creates an incentive for the timely submittal and effective implementation of moderate area SIP requirements and facilitates the PM_{10} attainment objective. For example, if an area that fails to submit a timely moderate area SIP is reclassified, this does not obviate the requirement that the area submit and implement RACM consistent with the moderate area schedule. Accordingly, the area could be subject to sanctions for its delay in submitting the RACM SIP requirement… Further, reclassification before the applicable attainment date will ensure

[149] *See, Vigil v. Leavitt,* 366 F.3d 1025, amended at 381 F.3d 826 (9th Cir. 2004).

> that additional control measures (*i.e.*, in addition to RACM, serious areas must implement best available control measures (BACM)), are implemented sooner and will expedite the application of more stringent new source review requirements to the area… Similarly, where an area submits a timely moderate area SIP, EPA may not discover that the area cannot practicably attain until sometime after it begins implementing its moderate area control measures. The EPA then may want to reclassify the area in order to facilitate the development and implementation of BACM.[150]

The EPA considers this longstanding interpretation of CAA section 188(b)(1) to be the correct interpretation of the statutory requirements governing the discretionary reclassification of Moderate areas. The EPA will reclassify any area it determines cannot practicably attain by the Moderate area attainment date through notice-and-comment rulemaking. *See* 40 CFR 51.1002(b)(1).

3. Comments and Responses

Comment: Some commenters stated that while it may be desirable for a state or local agency to provide an impracticability demonstration to the EPA, the EPA is not prohibited from using the weight of available evidence to reclassify an area to Serious even before the Moderate area plan is due if it has a particularly challenging air quality situation. Other commenters did not agree with the EPA's interpretation of the statute, and believed that the EPA's authority should be limited to reclassification of areas that submit an impracticability demonstration.

Response: For the reasons described earlier, the EPA agrees with the first commenter and does not believe its authority is limited in the manner suggested by the second commenter.

[150] 57 FR 13498 (April 16, 1992), at page 13537.

B. Mandatory Duty

1. Summary of Proposal

The proposal provided background on the EPA's mandatory duty pursuant to CAA section 188(b)(2) to reclassify a Moderate area to Serious when the area fails to attain the standard by the attainment date. The CAA directs the EPA to reclassify an area from Moderate to Serious if the area fails to attain the relevant NAAQS by the applicable Moderate area attainment date (including any attainment date that had been extended by one or 2 years pursuant to CAA section 188(d)). Reclassification occurs by operation of law when the EPA determines that the area failed to attain the NAAQS by the applicable attainment date, in accordance with CAA section 188(b)(2)(A). Section 188(b)(2) of the CAA requires that "within six months following the applicable attainment date for a PM_{10} nonattainment area, the Administrator shall determine whether the area attained the standard by that date" and publish its determination in the *Federal Register*.

The EPA proposed that the date of reclassification would be the effective date of the *Federal Register* notice issued by the EPA that determines the area failed to attain by the attainment date. Thus, for example in the case of the 2012 $PM_{2.5}$ NAAQS, assuming a Moderate $PM_{2.5}$ nonattainment area fails to attain the standard by its approved attainment date of December 31, 2021, the EPA would be required to publish in the *Federal Register* no later than June 30, 2022 its determination that the area failed to attain the NAAQS and is therefore reclassified as Serious by operation of law. The actual date of reclassification for the area would be the effective date of the *Federal Register* document (e.g. in July or August 2022). To meet the requirements of CAA section 189(b)(2), the Serious area attainment plan for the area would be due within 18 months of the actual reclassification date (*i.e.*, in early 2024).

The proposal also discussed a possible alternative option, which would be to consider the date of reclassification to Serious to be the same as the Moderate area attainment date. Applying this approach in the example earlier would yield an earlier date of reclassification of December 31, 2021, and an earlier Serious area attainment plan due date of June 30, 2023.

2. Final Rule

Several commenters supported the EPA's proposed approach to interpret the date of reclassification as the effective date of the *Federal Register* notice announcing the area had failed to attain the standard by the Moderate area attainment date because this approach would allow adequate time for the EPA to evaluate air quality data and any exceptional events claims before making the determination that the area failed to attain. Some commenters opposed the proposed approach and supported interpreting the date of reclassification as being the same as the missed attainment date for the Moderate area. This commenter suggested that the proposed approach could introduce additional delay because the EPA does not always issue determinations of failure to attain promptly. They also claimed that the term "reclassified by operation of law" in CAA section 188(b)(2)(A) would have no meaning (i.e., surplusage) if the proposed approach was adopted.

After taking the comments received under consideration, the EPA has decided to retain the proposed approach. The date of reclassification is the effective date of the *Federal Register* notice issued by the EPA that determines the area failed to attain by the attainment date. For practical reasons, the EPA does not believe that as a general matter it can be expected to make a determination on December 31 that an area failed to attain. Because the $PM_{2.5}$ ambient monitoring method requires laboratory analysis of filters prior to determining the ambient mass

for each day, adequate time is needed after December 31 to ensure that the filter-based measurements have been evaluated and quality-assured in an accurate manner.

Although CAA section 188(b)(2) does not explicitly address this issue, the EPA believes that this approach is a reasonable interpretation of statutory ambiguity in CAA section 188(b)(2) and preferable over the alternative approach for two additional reasons. First, the statute at CAA section 189(b)(2) gives a state 18 months from the date of reclassification of an area to submit for the EPA's approval an attainment demonstration with air quality modeling and provisions to assure timely implementation of BACM and BACT on sources in the nonattainment area. The workload associated with developing a Serious area plan can be substantial, and the EPA believes that it is reasonable to resolve the statutory ambiguity in favor of providing the state with the full 18 months from the effective date of reclassification to develop and submit a thorough, complete and accurate Serious area attainment plan that will provide for expeditious attainment of the NAAQS.

Second, the statutory attainment date for a Serious area reclassified under any circumstances is as expeditious as practicable but no later than the end of the tenth year following designation of the area, and is thus independent of the date of reclassification of the area. Allowing a state some additional amount of time beyond 18 months from the missed attainment date to develop and submit a complete Serious area attainment plan, including adopting BACM and BACT, will not change the statutory obligation on the state for the area to attain the relevant NAAQS by the applicable attainment date. On the contrary, the EPA believes that the extra time may in fact help the area timely attain the relevant NAAQS by allowing the state to develop a more effective attainment plan for the area.

Thus, the EPA interprets the CAA such that the date of reclassification for an area reclassified under the EPA's mandatory duty is to be considered the effective date of the *Federal Register* document announcing that the area had not attained the relevant $PM_{2.5}$ NAAQS and is therefore reclassified by operation of law. The EPA intends to make determinations of whether an area attained the relevant NAAQS pursuant to CAA section 188(b)(2) by notice-and-comment rulemaking. *See* 40 CFR 51.1002(b)(2). Accordingly, the final rule establishes a definition of "date of reclassification" to mean the effective date of a $PM_{2.5}$ area reclassification from Moderate to Serious as promulgated by the Administrator. This definition is then used, for example, to establish the due date for the Serious area SIP. (*See* Section VI.A.1 of this preamble for more information on mandatory reclassification area SIP due dates.)

3. Comments and Responses

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

VI. Requirements for $PM_{2.5}$ Serious Nonattainment Area Plans

Sections 189(b) and (c) of the CAA include the following requirements for Serious area attainment plan submissions: (i) an attainment demonstration (CAA section 189(b)(1)(A)); (ii) provisions for the implementation of best available control measures (BACM) no later than 4 years after reclassification of the area to Serious (CAA section 189(b)(1)(B)); (iii) quantitative milestones that will be used to evaluate compliance with the requirement to demonstrate RFP (CAA section 189(c)); and (iv) regulation of $PM_{2.5}$ precursors (in general to meet attainment and control strategy requirements, and as specifically required for major stationary sources by CAA section 189(e)). Other subpart 1 requirements for attainment plans not otherwise superseded under subpart 4 also apply to Serious areas for the $PM_{2.5}$ NAAQS, including: (i) a description of

the expected annual incremental reductions in emissions that will demonstrate RFP (CAA section 172(c)(2)); (ii) emissions inventories (CAA section 172(c)(3)); (iii) other control measures (besides BACM and BACT) needed for attainment (CAA section 172(c)(6)); and (iv) contingency measures (CAA section 172(c)(9)).

Additionally, CAA section 189(b)(1) requires that "in addition" to the attainment plan requirements specific to Serious areas, states must also meet all Moderate area attainment plan requirements. The EPA interprets the statutory language of CAA section 189(b)(1) to require states with areas that are reclassified to Serious to meet Moderate area attainment plan requirements, including all areas that the EPA reclassifies through rulemaking under its discretionary authority, even if that occurs before the area has met all of its Moderate area attainment plan requirements.[151] The following section describes the EPA's final actions in this rule regarding Serious area attainment plan requirements in greater detail.

A. Plan Due Dates

The proposal discussed the statutory provisions that informed the options for the submission due dates for the various components of Serious area attainment plans. The timing of Serious area attainment plan elements is dictated by two provisions of the CAA: CAA section 189(b)(2) for certain subpart 4 elements and CAA section 172(b) for subpart 1 elements not superseded by subpart 4 requirements. Section 189(b)(2) of the CAA addresses the due dates for Serious area attainment demonstrations due under CAA section 189(b)(1)(A) and provisions for BACM and BACT implementation under CAA section 189(b)(1)(B). Specifically, section 189(b)(2) stipulates two alternative schedules for states to submit Serious area attainment

[151] *See Vigil v. Leavitt*, 366 F.3d 1025, amended at 381 F.3d 826 (9th Cir. 2004).

demonstrations, depending upon the statutory authority governing the reclassification action. For an area reclassified to Serious by operation of law under CAA section 188(b)(2) upon a determination by the EPA that the area failed to attain the relevant NAAQS by the applicable Moderate area attainment date, a state must submit a new attainment demonstration for the area no later than 18 months after reclassification. For an area reclassified to Serious pursuant to the agency's discretionary authority provided under CAA section 188(b)(1), a state must submit a new attainment demonstration no later than 4 years after reclassification of the area.[152] For all Serious nonattainment areas, CAA section 189(b)(2) requires a state to submit within 18 months of an area's reclassification "provisions to assure that the best available control measures [BACM] for the control of PM_{10} shall be implemented no later than 4 years after the date the area is classified (or reclassified) as a Serious Area."

When considering attainment plan due dates for areas that have been discretionarily reclassified, it is also important to keep in mind the requirements of CAA section 188(b)(1). Section 188(b)(1) of the CAA generally states that: "The Administrator may reclassify as a Serious PM_{10} nonattainment area… any area that the Administrator determines cannot practicably attain the [NAAQS]… by the attainment date… for Moderate Areas." In addition, CAA section 188(b)(1)(B) provides that "the Administrator shall reclassify appropriate areas within 18 months after the required date for the state's submission of a SIP for the Moderate Area." Since all Moderate area SIPs are due 18 months after designation, then this provision contemplates that EPA will typically exercise its discretionary reclassification authority within 3 years of the area's designation as nonattainment. Taken together with CAA section 189(b)(2),

[152] Section V of this preamble provides a more detailed discussion of the process for reclassifying areas with severe nonattainment problems to Serious.

which for discretionary reclassifications requires the state to submit the attainment demonstration within 4 years of reclassification to Serious, subpart 4 contemplates that attainment plans for discretionary reclassifications will be submitted no later than 7 years after designation. However, as noted in the previous section, the EPA believes it can discretionarily reclassify an area more than 18 months after the Moderate area SIP due date under certain circumstances, meaning that the Serious area attainment demonstration for such a plan could be submitted to EPA more than 7 years after designation. (*See* more discussion in Section V.A of this preamble on the timing of discretionary reclassifications.)

Lastly, because some of the Serious area plan requirements noted earlier are established in subpart 1 of the Act (CAA section 172), the proposal also noted that CAA section 172(b) provides the EPA discretion to set a due date for submission of these subpart 1 attainment plan elements that is no later than 3 years after *designation* of the area. In the Addendum, the EPA interpreted the date of reclassification of a Moderate area to Serious to be analogous to the date of designation of the area to nonattainment. Accordingly, some of the options presented in the proposal included 3 year SIP due dates for certain plan requirements that stem from subpart 1.[153]

1. Area Reclassified to Serious After Failing to Attain the $PM_{2.5}$ NAAQS

a. Summary of Proposal. The proposal noted that for an area reclassified to Serious after failing to attain the $PM_{2.5}$ NAAQS by the Moderate area attainment date, CAA section 189(b)(2) requires the state to submit both the attainment demonstration for an area and provisions to ensure timely BACM and BACT implementation to the EPA within 18 months after reclassification. The EPA proposed a straightforward codification of this 18 month deadline.

[153] Addendum to the General Preamble, 59 FR 41998 (August 16, 1994), at page 42015.

Assuming the effective date of the *Federal Register* reclassification notice is typically about 6 months after the end of the calendar year, this means that the attainment demonstration and BACM/BACT provisions would be required at about 8 years after designations. The notice also proposed that 1) in addition to BACM/BACT and the attainment demonstration, the emission inventory would also be required to be submitted within 18 months of the effective date of reclassification because it is essential for the development of BACM/BACT determinations; and 2) additional feasible measures (i.e., control measures that may be able to help the area attain by the attainment date or advance the attainment date by a year, and that may be implemented later than BACM/BACT but before the attainment date) would also be required to be submitted within 18 months of the effective date of reclassification because such measures would be identified as part of the overall control measures analysis. Regarding the SIP submission date for the remaining required plan elements (i.e., RFP, quantitative milestones and contingency measures), the proposal included two options: 1) no later than 18 months after reclassification (i.e., at about 8 years after designation, or 2 years prior to the Serious area attainment date; or 2) within 3 years after reclassification (i.e., at about 9.5 years after designation, or 6 months prior to the Serious area attainment date).

b. Final Rule. Some commenters opposed the proposed requirements for SIP elements other than BACM/BACT and the attainment demonstration to be due within 18 months of the effective date of reclassification because they favored providing states with as much time and flexibility as possible to provide their submissions. Other commenters suggested that having all elements – including RFP, quantitative milestones, and contingency measures -- be due at the same time would be more administratively efficient for states and would allow for EPA to conduct a single coordinated review of these plans, and should therefore all be due within 18

months of the effective date of reclassification. They also indicated that the alternative would not make sense because RFP, quantitative milestones, and contingency measures are all linked to the attainment demonstration.

After taking these comments into consideration, the EPA has decided to require all Serious area plan elements to be due within 18 months of the effective date of reclassification for any area reclassified due to a failure to attain by the Moderate area attainment date. The EPA believes that the proposed alternative 3 year deadline, which would have allowed some elements to be submitted as late as 6 months prior to the attainment date, would mean that the state would be required to submit two different SIPs and would require greater state government resources to conduct the administrative and public procedures required to submit the separate plans to the EPA. This approach also would not provide the EPA with sufficient time to appropriately review and take action on the state's submission prior to the attainment date. It also is appropriate to have the RFP, quantitative milestones, and contingency measures elements be developed and submitted at the same time as the attainment demonstration because they build from the information in the attainment demonstration. The EPA also maintains that requiring states to submit all elements of an attainment plan by the same date is reasonable because it allows for a complete review of the state submission by the EPA, regulated entities, and the general public, and it also should prove to be most efficient for states and the EPA. The EPA further agrees with commenters that a program requiring two submissions rather than one can generally be expected to be less administratively efficient because it will involve separate public hearings and comment periods at the state level, and separate proposed and final approval actions in the *Federal Register* by the EPA. Thus, the final rule requires any area that has been reclassified to Serious as a result of a failure to attain the standard by the Moderate area attainment date to submit all

the plan elements to the EPA within 18 months of reclassification: updated base year emission inventory (described in more detail in the next section); BACM/BACT determinations and adopted regulations; analysis of additional feasible measures (i.e., control measures that may be able to help the area attain by the attainment date or advance the attainment date by a year, and that may be implemented later than BACM/BACT but before the attainment date) and adopted regulations, as appropriate; attainment demonstration; RFP; quantitative milestones; and contingency measures. *See* 40 CFR 51.1003(b)(2)(ii).

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

2. Area Reclassified to Serious Because the EPA Finds in its Discretion That the Area Cannot Practicably Attain the NAAQS by the Statutory Moderate Area Attainment Date

a. Summary of Proposal. The proposal noted that for an area reclassified to Serious because the area cannot practicably attain the standard by the Moderate area attainment date, CAA section 189(b)(2) requires the state to submit its BACM/BACT analyses and any adopted regulations to the EPA within 18 months; and to submit the attainment demonstration within 4 years of reclassification. Similar to the proposal for mandatory reclassification areas, the notice also proposed that an updated emission inventory (required under section 172(b) of the CAA) be required to be submitted within 18 months of reclassification because it is essential for the development of BACM/BACT determinations.

The notice also discussed a potential control measure option (described in Section VI.D. of the proposal, Attainment Plan Control Strategy, at page 15410) that would closely link the BACM/BACT determinations to the attainment demonstrations (rather than consider BACM/BACT as an independent requirement). Therefore, to facilitate this linked approach to

BACM/BACT, an alternative option was proposed for submission of the attainment demonstration within 18 months of reclassification, instead of within 4 years.

The proposal also addressed the remaining plan elements: additional feasible measures (i.e., control measures that may be able to help the area attain by the attainment date or advance the attainment date by a year, and that may be implemented later than BACM/BACT but before the attainment date); RFP; quantitative milestones; and contingency measures. Two SIP submission due date options were proposed for the remaining plan elements: 1) no later than 3 years after reclassification[154]; or 2) no later than 4 years after reclassification. The proposal requested comments on all of the proposed options for the various elements of a Serious area attainment plan.

b. Final Rule. Most commenters opposed the option requiring the attainment demonstration to be due within 18 months, at the same time as the BACM/BACT submission. Some of these commenters suggested that a 4-year due date for the attainment demonstration and other elements would provide maximum flexibility to the states. While some commenters acknowledged the reasoning behind requiring submittal of the attainment demonstration and BACM/BACT at the same time if BACM/BACT is linked to the attainment demonstration, most commenters favored an approach that provided additional time for submittal of the attainment demonstration.

Some commenters stated that for an area that is reclassified to Serious because it cannot practicably attain the NAAQS by the Moderate area attainment date, CAA section 188(b)(1)(B)

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[154] Under the EPA's prior interpretation as described in the Addendum at 42015, the EPA had suggested that states could submit contingency measures no later than 3 years after reclassification of an area to Serious because of the language of CAA section 172(b).

requires the EPA to reclassify the area within 3 years of designation (i.e. within 18 months of the Moderate area SIP due date), and then per CAA section 189(b)(2) the attainment demonstration for such area would be due 4 years later (i.e., 7 years from designation). The commenter stated that, if the EPA finalizes any discretionary reclassifications beyond 3 years after designation, then it cannot allow the area to have the full 4 years for development of the attainment demonstration because it would undermine the deadlines and schedules that Congress was plainly trying to impose.

For discretionary reclassification areas, just as for mandatory reclassification areas, the EPA is finalizing the statutory due date of 18 months for the BACT/BACM submission. However, after considering comments received on the timing options for submission of the attainment demonstration, the EPA has determined that the attainment demonstration should generally be due later than 18 months for areas subject to discretionary reclassifications. Because the statutory provision in CAA section 189(b)(2) provides up to 4 years, the EPA believes that an appropriate default due date for the attainment demonstration should be 4 years after reclassification for areas reclassified within 3 years of initial designation. However, after further consideration of this issue, the EPA also believes that a due date of less than 4 years should be required for areas that are reclassified closer to the Moderate area attainment date (*i.e.*, reclassified between 4 and 6 years after initial designation). In considering what would be a reasonable submission deadline for the attainment demonstration in this situation, the EPA considered the provisions applicable to areas that fail to attain by the attainment date. Specifically, CAA section 189(b)(2) requires the attainment demonstration (and the rest of the plan) to be submitted no later than 8 years after designation. As explained further, the EPA

believes this requirement provides a reasonable outer bound for submission of Serious area plans for any area that is discretionarily reclassified to Serious.

The circumstance that one of the commenters identifies, where the EPA reclassifies an area to Serious at a point in time more than 3 years after designation, raises an important timing issue that was not explicitly addressed in the proposal. The EPA was aware that it might need to reclassify an area to Serious beyond 3 years after designation (e.g., for an area that fails to submit a Moderate area attainment plan at all; or for an area that is discretionarily reclassified by the EPA because it has very high air quality values). However, the proposal did not address the issue of when the attainment demonstration and other elements should be required for submission when this circumstance occurs. The comment raises the question regarding whether, in the most extreme example, it would be reasonable for an area to be reclassified just before the Moderate area attainment date (end of the sixth calendar year after designation) and then to have until just before the Serious area attainment date (end of the tenth calendar year after designation) to submit the attainment demonstration. This situation would provide little meaningful time for the state and relevant emissions sources to implement measures to reach attainment by the attainment date, nor would it provide sufficient time for the EPA to review and take action on the plan.

The EPA maintains that the statutory authority to "reclassify as a Serious PM-10 nonattainment area … any area that the Administrator determines cannot practicably attain [the NAAQS] by the attainment date … for Moderate Areas" includes the authority to make that determination and issue a discretionary reclassification any time before the Moderate area attainment date, as long as doing so does not otherwise unreasonably frustrate the primary goals of the statute. For example, the EPA must consider the timing for submission of Serious area SIP

requirements to ensure the state has sufficient time to implement an effective plan and the agency has sufficient time to review and act on the plan in advance of the outermost Serious area attainment date (i.e., the end of the tenth calendar year after initial designation as nonattainment). *See* CAA section 188(c)(2).

The EPA interprets the statute to provide authority to require submission of attainment plan requirements, including the attainment demonstration, by a date less than 4 years from reclassification to Serious when exercising its discretionary authority to reclassify an area to serious nonattainment pursuant to CAA section 188(b)(1). While the EPA generally prefers to give states as much time as possible to develop and submit plans, the agency concluded that allowing 4 years for submission of the attainment demonstration in all discretionary reclassification actions would potentially frustrate the goals of the statute.

To resolve this issue, EPA is finalizing a specific schedule for submission of the attainment demonstration following discretionary reclassification. As discussed earlier, the terms of the statute provide some guidance as to the appropriate schedule because, as explained earlier, a state would have until the end of the 7th calendar year to submit the attainment demonstration after a discretionary reclassification that follows the timing in CAA section 188(b)(1)(B), and a state would have until the end of the 8th calendar year after a mandatory reclassification to submit the attainment demonstration. *See generally* CAA sections 188(b) and 189(b).

While not dispositive, these provisions indicate that Congress believes that Serious area attainment plans should be submitted at least 2 years in advance of the outermost statutory attainment date for Serious areas to ensure expeditious attainment of the NAAQS. The EPA finds that a minimum of 2 years is appropriate because 1) it provides time for emission reduction measures adopted by the state to take effect and improve air quality; 2) it will allow the agency

sufficient time to evaluate and act on the Serious area attainment demonstration; and 3) for every other NAAQS, the CAA SIP submission dates are generally 2 years or more prior to the attainment date. If for example the plan is not submitted until just before year 10, and the agency determines the plan will not lead to attainment, there will be no time to take corrective action before the attainment date to ensure attainment of the NAAQS. Such a result would not be reasonable.

Therefore, the EPA believes that a reasonable attainment demonstration due date for any discretionary reclassification to Serious would be the earlier of 1) 4 years from the date of reclassification, or 2) the end of the eighth calendar year after designation. As an example, an area that is reclassified at the end of year 5 would have 3 years rather than four years to submit the attainment demonstration and other plan elements by the end of year 8. An area that is reclassified no later than the end of year 4 would have the full four years, and any area reclassified after this point would have less than 4 years. At the outer extreme, in the unlikely event that the EPA chooses to exercise its discretion to reclassify an area in the sixth calendar year after designation (i.e., within a year of the attainment date), the area would still have 2 years to submit the attainment demonstration, which is still no less than the timeframe Congress provided for a Moderate area that is reclassified because it fails to attain. *See* 40 CFR 51.1003(b)(2)(i).

Lastly, this section addresses appropriate SIP submission dates for the other required plan elements. Regarding the base year emission inventory, the EPA believes it is appropriate to require the updated base year emissions inventory at the same time that the BACM/BACT submission is due (18 months) because the updated inventory will be a critical element relied on for making control measure determinations. Regarding the remaining planning elements (i.e.,

additional feasible measures, RFP, quantitative milestones, contingency measures, and attainment projected inventory), the proposed options allowed for the possibility of up to three separate submissions under certain policy combinations, and we believe having such an outcome would be very inefficient. Thus, the EPA has determined that the remaining elements must be submitted at the same time as the attainment demonstration (*i.e.*, the earlier of 4 years from the date of reclassification, or the end of the eighth calendar year after designation). This approach will provide for the most efficient process and at the same time provide the states with the maximum reasonable time when they are reclassified pursuant to the EPA's discretionary authority in CAA section 188(b)(2).

With regard to the due date for submission of NNSR program revisions that may be required when an area is reclassified to Serious, such as revisions to meet nonattainment NSR program requirements to lower the ''major stationary source'' threshold from 100 tons per year (tpy) to 70 tpy (CAA section 189(b)(3)) and to address the control requirements for major stationary sources of $PM_{2.5}$ precursors [CAA section 189(e)][155], the Act does not specify a deadline for the State's submission following reclassification of a Moderate $PM_{2.5}$ nonattainment area as Serious nonattainment under subpart 4. Pursuant to EPA's gap-filling authority in CAA section 301(a) and to effectuate the statutory control requirements in section 189 of the Act, the final rule requires the state to submit these nonattainment NSR SIP revisions no later than 18 months after the effective date of final reclassification. This due date is also consistent with the due date for submission of BACM and BACT provisions and the emission inventory; thus, at

[155] Section 189(e) of the CAA requires that the control requirements applicable to major stationary sources of $PM_{2.5}$ also apply to major stationary sources of $PM_{2.5}$ precursors, except where the state demonstrates to the EPA's satisfaction that such sources do not contribute significantly to $PM_{2.5}$ levels that exceed the standard in the area.

most, a state will have two required SIP submissions after being reclassified. *See* 40 CFR 51.1003(b)(2)(i) and (ii).

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

B. Emissions Inventory Requirements

1. Summary of Proposal

The EPA proposed that the inventory requirements for Serious areas were the same as those for Moderate areas with some additions. In addition to the Moderate area requirements, the EPA proposed that Serious area inventory requirements would include using a major source threshold of 70 tons/year for reporting sources as point sources for both the base year inventory for the nonattainment area and the attainment projected inventory for the nonattainment area.

With regard to the due date for the attainment projected inventory for the nonattainment area, the EPA proposed two cases. In the case where the area is reclassified after failing to attain the NAAQS by the Moderate area attainment date, the attainment projected inventory for the nonattainment area was proposed to be submitted no later than 18 months after reclassification. In the case where the area is reclassified by the EPA because the area cannot practicably attain the NAAQS by the statutory attainment date, the EPA proposed that the attainment projected inventory for the nonattainment area would be due no later than 4 years after reclassification.

2. Final Rule

a. What Emissions Inventory Requirements Apply to Serious Area Attainment Plans? As with Moderate $PM_{2.5}$ nonattainment areas, Congress did not create a specific emissions inventory requirement in subpart 4 that would supersede the emissions inventory requirement under subpart 1 for Serious areas. Thus, the statutory emissions inventory requirements that apply for

Serious area attainment plans continue to be those of section 172(c)(3), which explicitly requires "a comprehensive, accurate, current inventory of actual emissions of the relevant pollutants" in the nonattainment area. In addition, the specific attainment plan requirements for the $PM_{2.5}$ NAAQS set forth in section 189(a) and associated modeling requirements make an accurate and up-to-date emissions inventory a critical element of any viable attainment plan. Finally, the additional attainment plan requirements for the $PM_{2.5}$ NAAQS for Serious areas contained in subpart 4 at section 189(b) have additional requirements that affect the emissions inventory requirements for Serious areas.[156]

As noted earlier in this preamble, states must use the best available, current emissions inventory information for attainment plan development, because complete, high quality emissions inventory data are essential for the development of an effective control strategy. To assist states in preparing complete, high quality inventories, the EPA provides guidance for developing emissions inventories in its SIP Emissions Inventory Guidance, available at *https://www.epa.gov/air-emissions-inventories/emissions-inventory-guidance-documents*. The EPA recommends that states consult this guidance while developing emissions inventories to meet requirements for Serious area attainment plans.

b. How do States Meet the Inventory Requirements for the $PM_{2.5}$ NAAQS for Areas Classified as Serious? As with Moderate $PM_{2.5}$ nonattainment areas, neither section 172(c)(3) nor the provisions specifically applicable to attainment plans for the $PM_{2.5}$ NAAQS in subpart 4 specify how states should meet statutory emissions inventory requirements for Serious $PM_{2.5}$ nonattainment areas. Section 172(c)(3) requires that states submit "a comprehensive, accurate,

[156] All definitions described in Section III.B of this preamble for areas classified as Moderate apply in this section.

current inventory of actual emissions from all sources of the relevant pollutant or pollutants in such area, *including such periodic revisions as the Administrator may determine necessary to assure that the requirements of this part are met"* (emphasis added). The EPA interprets this provision to authorize the agency to require states to revise their base year emissions inventories whenever the state is required to submit a new attainment plan because of a change in the nonattainment area's status (*e.g.* failure to attain by the applicable attainment date resulting in reclassification). In addition, pursuant to CAA section 301, the EPA has additional authority to promulgate regulations as necessary for the implementation of the $PM_{2.5}$ NAAQS, including requirements pertaining to emissions inventories. Accordingly, this rule includes specific emissions inventory requirements that the EPA considers necessary to effectuate the attainment plan requirements of the CAA for the $PM_{2.5}$ NAAQS.

Like Moderate areas, there are three key facets of the emissions inventory requirements: (i) the types of inventories required; (ii) the content of these inventories; and, (iii) the timing of submission of these inventories. The three facets are addressed in the following paragraphs.

First, the same two types of inventories required for Moderate areas are also required for Serious areas. While these inventories are the same types and names of inventories as for Moderate areas, they must be created specifically for Serious area attainment plans in accordance with the applicable Serious area requirements. The first type of inventory is called the "base year inventory for the nonattainment area," and the second type of inventory is called the "attainment projected inventory for the nonattainment area." *See* 40 CFR 51.1000. The attainment projected inventory is necessary to implement the attainment demonstration requirement of section 189(a)(1)(B), and it also may be used as part of the RFP requirement (s*ee* Section VI.F). For these reasons, this rule establishes a regulatory requirement that Serious area attainment plans

must include a base year inventory for the nonattainment area and an attainment projected inventory for the nonattainment area.

Second, the content of the inventories will follow the content requirements for Moderate area inventories, with two exceptions needed to meet the requirements of section 189(b)(3). The first exception for Serious areas stems from the Section 189(b)(3) definition of a separate emissions threshold for major sources in Serious nonattainment areas (70 tpy potential to emit of PM_{10}). This threshold is lower than the 100 tpy potential to emit general requirement for major sources of PM_{10}, $PM_{2.5}$ or one of its precursors that is used for Moderate area emissions inventories. Inventories for Serious area attainment plans must include these smaller sources as major stationary sources (rather than the nonmajor stationary source category that would apply for these in Moderate area plans) using the lower threshold specified in the CAA. Also as described earlier and in 40 CFR part 51, subpart A, this means that all other smaller stationary sources within the nonattainment area must be included in the base year inventory and projected attainment year inventory as nonpoint sources.

As described previously for Moderate areas, Appendix A of Table 1 of 40 CFR part 51, subpart A (the AERR) is required by this rule to define which sources must be reported as point sources for inventories associated with this rule (base year and projected attainment year inventories). To be consistent with the 70 tpy threshold finalized in this rule, this rule is also amending Table 1 of Appendix A of the AERR to include the 70 tpy threshold for $PM_{2.5}$, SO_2, NO_x, VOC and ammonia for point sources within nonattainment areas.

The second difference between the Serious area and Moderate area inventory requirements is a minor wording difference for the year that should be chosen for the base year inventory. The year should be one of the 3 years used for reclassification (rather than designation

for Moderate areas) or another technically appropriate inventory year. Another inventory year may be chosen under specific circumstances (*e.g.*, to account for a change in sources in the nonattainment area, changes in nonattainment area boundaries, or significant time lag between designations and preparation of the inventory) with consultation from the appropriate EPA Regional Office. This requirement is intended to ensure that the inventory will represent the emissions sources whose contributions resulted in a nonattainment designation for the area.

The third facet of the Serious area inventory requirements is the timing, which is somewhat different than for Moderate areas. Section VI.A of this preamble describes the requirement that states submit the base year inventory for a Serious nonattainment area at the same time that it submits provisions to implement BACM and BACT on sources in the area (due no later than 18 months from reclassification of the area pursuant to section 189(b)(2)). This is because the base year inventory serves as the starting point for conducting a BACM and BACT determination. In contrast to the base year inventory, the attainment projected inventory is more closely related to the Serious area attainment demonstration. Thus, the attainment projected inventory is most appropriately submitted with the attainment demonstration for a given Serious area to allow effective evaluation of the attainment plan as a whole.

Consequently, this rule requires that attainment projected emissions inventories be submitted at the same time as the Serious area attainment demonstration. This requirement gives rise to two possible deadlines for Serious areas to submit the attainment projected emissions inventory for the nonattainment area. For areas that are reclassified after failing to attain the NAAQS by the applicable Moderate area attainment date, the deadline is no later than 18 months after reclassification (same time period as for Moderate areas). For areas reclassified by the EPA because the area cannot practicably attain the NAAQS by the statutory Moderate area attainment

date, the deadline is the earlier of 4 years from the date of reclassification, or the end of the eighth calendar year after designation.

3. Comments and Responses

Comment: Some commenters noted that the proposal was unclear with regard to the inventory year for areas that are reclassified from Moderate to Serious, and whether the terms "reclassification" and "designation" are interchangeable in this regard.

Response: In the final rule, the EPA clarifies that for areas that are redesignated to Serious, the inventory year must be one of the 3 years used for reclassification.

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

C. Pollutants to be Addressed in the Plan

All $PM_{2.5}$ precursors are presumptively required to be addressed in any Serious area attainment plan. Section III of this preamble includes a detailed discussion about optional analyses that a state may provide to demonstrate that sources of a precursor do not significantly contribute to $PM_{2.5}$ concentrations in a particular nonattainment area. These demonstrations may be conducted for all sources of a precursor in an area (i.e., comprehensive precursor demonstration), or just for major sources of the precursor (i.e., major source precursor demonstration). It also discussed a similar demonstration that may be conducted for NNSR (i.e., NNSR precursor demonstration). These demonstrations may be used to justify the exclusion of certain types of precursor sources from certain SIP requirements in Serious area plans, just as in Moderate area plans. However, the expeditious attainment demonstration is not available for Serious area plans.

As noted in Section III of this preamble, if the EPA approves a state's precursor demonstration for the Moderate area plan, the state would need to re-evaluate whether the precursor contributes significantly to $PM_{2.5}$ levels that exceed the standard for the Serious area plan. The reason for this is that precursor emissions and air quality concentrations will have changed since the submission of the demonstration for the Moderate area, and precursor emissions technical information and scientific understanding of precursor emissions and interactions in the area should be better understood several years later, and the Serious area plan needs to be based on the best available information to date. If the state reevaluates a precursor for potential exclusion from one or more of the Serious area plan requirements, it should take into account factors such as increases or decreases in emissions since the last precursor demonstration; new ambient monitoring data for fine particle composition and concentrations of important gases (such as ammonia); and improved air quality modeling programs that reflect improved understanding of the role of precursors in atmospheric transformation processes. To the extent appropriate, this precursor demonstration can build off the analyses conducted for the Moderate area precursor demonstration.

If the EPA approves a comprehensive precursor demonstration for the Serious area plan, then the state would not be obligated to evaluate BACM/BACT measures for reducing that precursor in the nonattainment area, nor would it need to account for that precursor in the RFP plan, quantitative milestones, and contingency measures. If a major stationary source precursor demonstration is approved, then the state would not be obligated to evaluate BACM/BACT measures for reducing that precursor from major sources in the nonattainment area, nor would it need to account for emissions of that precursor from major sources in the RFP plan, quantitative milestones, and contingency measures. If a NNSR precursor demonstration is approved, then the

state would not be obligated to address LAER and emission offset requirements for that precursor in the NNSR program for that nonattainment area.

D. Attainment Plan Control Strategy

1. General Approach to Designing a Control Strategy for a Serious Nonattainment Area

The statutory attainment planning requirements of subparts 1 and 4 were established to ensure that states meet the following goals of the CAA: (i) implement measures that provide for attainment of the $PM_{2.5}$ NAAQS as expeditiously as practicable, and (ii) adopt emission reduction strategies that will be effective at reducing $PM_{2.5}$ levels in nonattainment areas. A state has discretion to require reductions from any source inside or outside of a $PM_{2.5}$ nonattainment area (but within the state's boundaries) in order to fulfill its obligation to demonstrate attainment in a $PM_{2.5}$ nonattainment area as expeditiously as practicable, in addition to having an obligation to meet the statutory requirements for specific control measures on sources located within a nonattainment area (*e.g.*, BACM and BACT). A state may need to require emissions reductions on sources located outside of a $PM_{2.5}$ nonattainment area if such reductions are needed in order to provide for expeditious attainment of the $PM_{2.5}$ NAAQS.

The following sections describe the recommended approach for a state to follow in order to identify and select the complete suite of measures needed for an approvable attainment plan submission for a Serious $PM_{2.5}$ nonattainment area.

2. Identification and Selection of BACM/BACT and Additional Feasible Measures

a. Summary of Proposal. The proposal provided background information on statutory requirements and existing guidance regarding Serious area control strategies, and then presented two broad approaches describing the steps for determining BACM/BACT and additional feasible measures (i.e. control measures that may be able to help the area attain by the attainment date or

advance the attainment date by a year, and that may be implemented later than BACM/BACT but before the attainment date). The first approach is consistent with current guidance for PM_{10} NAAQS implementation in the Serious Area Addendum. Under the first approach, the emphasis of the analysis would be on the identification of feasible control measures. The analysis would be considered to be "generally independent" of whether such measures are needed for expeditious attainment of the relevant NAAQS. However, this approach also would allow the state to identify *de minimis* source categories *before* conducting any further analysis of technologically feasible or economically feasible control measures. The proposal requested comment on inclusion of an ambient impact threshold of 3 percent for determining whether a source category impact would be *de minimis*. This proposed threshold level was similar to the *de minimis* ambient levels included in the Serious Area Addendum for implementation of the PM_{10} NAAQS, and the state would likely need to conduct air quality modeling to demonstrate *de minimis* impacts below a particular threshold. The proposal noted the challenges associated with providing a nationally consistent definition of what would be a "source category." For source categories found to be *de minimis*, the state would not be obligated to evaluate potential control measures. The basic analytical steps for proposed option 1 were presented as follows: 1) update base year emissions inventory for the area; 2) evaluate source category impacts; 3) identify existing and potential control measures; 4) determine whether an available control measure or technology is technologically feasible; 5) determine whether an available control measure or technology is economically feasible; 6) determine the earliest date by which a control measure or technology can be implemented in whole or in part.

Under the second proposed option, there would be a greater emphasis on linking the control strategy evaluation process with the attainment needs for the area. Accordingly, this

option would not include a "*de minimis*" step 2 early in the process. However, at the end of the process, the state would be able to choose to not adopt certain measures that would otherwise meet the criteria for BACM/BACT if those measures collectively would not be necessary to bring the area into attainment or to advance the attainment date by 1 year (similar to the approach that EPA uses, and has historically used, for RACM/RACT). The EPA requested comment on all aspects of these options, and indicated the agency may finalize either approach or various elements of each approach after evaluating the comments that had been received.

b. Final Rule. The EPA has considered the comments that were submitted on the two proposed options for determining BACM/BACT (and additional feasible measures), and has determined that the final rule should include aspects of each option. The following sections provide background information and guidance on the steps of the process for determining Serious area control measures for $PM_{2.5}$ nonattainment areas.

i. BACM and BACT.

A Serious area attainment plan must include provisions to implement BACM on sources in a Serious nonattainment area, as provided by section 189(b)(1)(B), no later than 4 years after reclassification. Under section 189(b)(2), a state has 18 months following reclassification to submit these BACM provisions.

Section 189(b)(1)(B) refers only to BACM, but the EPA has long interpreted this term to include BACT, just as the analogous term for RACM includes RACT for Moderate areas. For implementation of the $PM_{2.5}$ NAAQS, the EPA finds it reasonable to maintain the same interpretation. The legislative history for the 1990 Amendments to the CAA supports this

interpretation, as the EPA has explained in past guidance.[157] Additionally, the requirement for BACT for existing sources in the context of $PM_{2.5}$ NAAQS implementation in nonattainment areas is separate and distinct from the requirement for BACT for new and modified sources under the Prevention of Significant Deterioration (PSD) permitting program for new stationary sources in areas designated as attainment or unclassifiable for the $PM_{2.5}$ NAAQS. As described later in this section, however, the process and criteria that states have historically used to determine BACT for new and modified sources under the PSD program have also been referenced and applied to the process for determining BACT for PM_{10} NAAQS implementation, but these requirements are otherwise unrelated. Consistent with past policy, BACT determinations for $PM_{2.5}$ NAAQS implementation are to follow the same process and criteria that are applied to the BACT determination process for the PSD program.

Longstanding guidance in the General Preamble and Addendum, together with past practice associated with implementing the PM_{10} NAAQS under subpart 4, has helped to establish a general approach for states and the EPA to determine BACM and BACT for Serious PM_{10} nonattainment areas. This approach has served as the basis for developing a more stringent control strategy for a Serious PM_{10} nonattainment area than that developed for such area when it was classified as Moderate. Indeed, as BACM and BACT are required to be implemented when a Moderate nonattainment area is reclassified as Serious due to its actual or projected inability to attain the relevant NAAQS by the Moderate area attainment date through the implementation of "reasonable" measures, it is logical that "best" control measures should represent a more

[157] *Ibid.* at 42008-09.

stringent and potentially more costly level of control.[158] The level of stringency generally refers to the overall level of emissions reductions of a control measure or technology, or of such measures and technologies combined.

Congress first defined BACT in CAA section 169(3) for the PSD permitting program as: "an emission limitation based on the maximum degree of reduction of each pollutant… which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques . . ."

In the Addendum, the EPA provided guidance concerning the requirements for BACM and BACT for Serious area attainment plan requirements for the PM_{10} NAAQS.[159] The EPA discussed in the Addendum that when Congress amended the CAA, Congress selected the same "best" terminology for PM_{10} nonattainment areas as it did for the language selected for the PSD program in 1977. The EPA interpreted this word choice at the time to mean that PSD BACT and PM_{10} nonattainment area BACM should be generally analogous in definition and implementation, but with some differences due to different end policy goals between the PSD and nonattainment area programs.[160] The EPA thus defined BACM for PM_{10} Serious

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[158] *Ibid.* at 42009.
[159] *Ibid.* at 42009.
[160] *Ibid.* at 42010. "EPA will interpret PSD BACT and PM–10 BACM as generally similar because, despite the similarity in terminology, certain key differences exist between control measures applicable in the PSD and PM–10 serious nonattainment area programs. The BACT under the PSD program applies only in areas already meeting the NAAQS, while PM–10 BACM applies in areas which are seriously violating the NAAQS. The difference in policy goals, arguably, suggests that the PM–10 BACM control standard should be more stringent than that for PSD BACT . . . EPA considers it reasonable to use the approach adopted in the PSD BACT program as defined in section 169(3) of the Act as an analogue for determining appropriate PM–10 nonattainment control measures in serious areas, while at the same time retaining the

nonattainment area planning to be the maximum degree of emission reduction achievable from a source or source category which is determined on a case-by-case basis, considering energy, economic and environmental impacts and other costs.[161]

ii. BACM/BACT "Generally Independent" of Attainment.

As noted earlier, the issue of whether BACM/BACT should be considered generally independent of attainment or more closely tied to attainment for purposes of implementing the $PM_{2.5}$ NAAQS was a central issue distinguishing the two proposed options for determining BACM/BACT. Some commenters suggested that the overarching requirement of the CAA is to attain the standard expeditiously, and therefore the benefits of a "generally independent" BACM/BACT requirement are not clear. On the other hand, some other commenters supported maintaining the longstanding policy from the Serious Area Addendum that the BACM/BACT requirement is generally independent of attainment, citing the emphasis on "best" control measures and the statutory provision requiring BACM/BACT well before the attainment demonstration for certain reclassified areas. For the reasons discussed later in this section, the EPA has decided to maintain the policy that BACM/BACT determinations are to be "generally independent" of attainment for purposes of implementing the $PM_{2.5}$ NAAQS.

In the Serious Area Addendum, the EPA described BACM as a generally independent requirement, to be determined without regard to the specific attainment analysis (*i.e.*, attainment demonstration) for the area.[162] The EPA established that such an interpretation is in accordance

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discretion to depart from that approach on a case-by-case basis as particular circumstances warrant."

[161] *Ibid.*

[162] *Ibid.* at 42011.

with the structural scheme of the CAA, which by its definition requires that when an area is classified as Serious, BACM are implemented in addition to RACM. Because of the two types of measures employed, the EPA found it reasonable to interpret the statute as requiring a different analysis for determining BACM, *i.e.*, that while RACM emphasizes the attainment needs of the area, BACM has a greater emphasis on identifying measures that are feasible to implement. Keeping in mind that the overall objective of the implementation of BACM and BACT and additional feasible measures is to bring a Serious $PM_{2.5}$ nonattainment area into attainment as expeditiously as practicable, the General Preamble noted that the test for BACM puts a "greater emphasis on the merits of the measure or technology alone," rather than on "flexibility in considering other factors," in contrast to the approach for determining RACM and RACT.[163]

The view that BACM and BACT measures are generally independent of the attainment needs of the area is also consistent with the statutorily specified submission date for BACM and BACT control measures, contrasted against the statutorily specified submission date for the attainment demonstration for Serious areas. Specifically, states with Serious nonattainment areas must submit BACM and BACT measures within 18 months of reclassification of areas to Serious, whereas they are given up to 4 years from reclassification (for areas where it is impracticable to attain by the attainment date) to submit the attainment demonstration for such areas.

Additionally, the EPA believes that interpreting the Serious $PM_{2.5}$ nonattainment area BACM/BACT requirements to be "generally independent" of attainment is consistent with the structure and substance of the CAA control measure requirements for ground-level ozone

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[163] Ibid at 42011.

nonattainment areas with more serious air quality problems. In the CAA ozone implementation requirements, an area that is reclassified to a more serious category because it failed to attain the standard or because it is impracticable to attain by the attainment date is then subject to additional specific control measure requirements that are considered to be generally independent of attainment (for example, *see* CAA section 182(b) through (e)). The statute includes these specific requirements in order to ensure continued progress toward attainment for these areas with more difficult air quality problems. The EPA believes it is appropriate to have a similar interpretation of the $PM_{2.5}$ Serious area control measure requirements. In a similar manner, interpreting BACM/BACT to be generally independent of the attainment needs of a Serious $PM_{2.5}$ area will ensure continued progress toward attainment for those areas with more difficult air quality problems. The EPA also believes this more rigorous "independent control measure" approach for implementing the $PM_{2.5}$ standards in a manner similar to ozone is appropriate because the health effects of both standards are very significant (including premature mortality), and robust emission reduction programs are needed to bring about expeditious attainment and public health protection for citizens in these nonattainment areas.

iii. No de Minimis Source Category Analysis for $PM_{2.5}$ NAAQS Implementation.

Another central issue distinguishing the two proposed options for how to determine BACM/BACT was the issue of whether, before analyzing any potential BACM/BACT, the state should conduct technical analyses to identify whether there are any source categories having a *de minimis* contribution to $PM_{2.5}$ levels in the $PM_{2.5}$ nonattainment area. This *de minimis* analysis is part of the process described in the Serious Area Addendum for implementation of the PM_{10} standards. Under the proposal, for source categories found to be *de minimis*, the state would not be obligated to evaluate potential control measures.

As noted previously, the proposal requested comment on inclusion of an ambient impact threshold of 3 percent for determining whether a source category impact would be *de minimis*. This proposed threshold level was similar to the *de minimis* ambient levels included in the Serious Area Addendum for implementation of the PM_{10} NAAQS, and the state would likely need to conduct air quality modeling to demonstrate *de minimis* impacts below a particular threshold. The proposal noted the challenges associated with providing a nationally consistent definition of what would be a "source category."

The EPA also proposed a similar *de minimis* source category concept for the RACM/RACT process for Moderate area plans, and many of the comments received on the proposed Moderate area "upfront" *de minimis* source category analysis are also applicable when considering whether to include a *de minimis* source category analysis concept for Serious areas in the final rule. A number of commenters expressed concern about the analytical resources that might be needed to conduct air quality modeling to identify whether all the sources in a particular source category have an ambient air quality contribution exceeding an air quality threshold. Some commenters suggested that a *de minimis* source category approach for either Moderate or Serious areas would allow the state to ignore a set of control measures that later in the control measure evaluation process could be determined to provide for a more expeditious attainment date. They believe that allowing the exemption of *de minimis* source categories would undermine any analysis to evaluate whether a collection of measures could advance the attainment date by a year. For example, it would be possible for a state to identify multiple *de minimis* source categories at the beginning of the process, and then after all potential control measures are identified, the state and the EPA would be unable to determine whether the collective reductions and air quality impact of the exempted categories could actually be

sufficient to advance the attainment date. Other commenters noted that providing a source category exemption in one nonattainment area would lead to inconsistent treatment within a state or across states because it would give the exempted companies a competitive advantage over the same types of sources in other areas.

A number of commenters supported the *de minimis* source category concept because they believed it could result in a reduced burden in the control measure evaluation stage and help avoid regulating sources with limited impact on $PM_{2.5}$ levels. Some commenters supported the *de minimis* concept only if controls on the source are not needed for expeditious attainment. Some commenters suggested that the EPA include an emissions-based threshold (e.g. tons per day) rather than an air quality based threshold to reduce potential analytical burden associated with *de minimis* source category analyses. However, in their comments they did not address the fact that the air quality impact of a specific tons per day rate could vary greatly from one pollutant to another within a particular nonattainment area, or across different nonattainment areas. One state commenter noted that the NAICS system does not provide categories for nonpoint sources, and that this issue would need to be addressed if the NAICS approach were to be included in the final rule. Other commenters suggested that the rule not have a *de minimis* threshold at all but include the ability for the state to propose *de minimis* source categories to the EPA on a case-by-case basis.

After taking the range of comments on the *de minimis* source category concept into consideration, the EPA has decided to not finalize a *de minimis* source category approach for the purposes of implementing the $PM_{2.5}$ NAAQS. The EPA is persuaded by commenters who argued it is not necessary, and believes that without this concept the final rule will nevertheless provide sufficient flexibility in the Serious area control measure analysis and attainment demonstration

process, due to the availability of provisions enabling states to identify sources that should not be subject to control measures, including the ability to develop precursor demonstrations to exclude certain precursors from control requirements, and to consider case-specific factors in determining technical and economic feasibility of potential control measures. If the final rule were to include an explicit step to conduct a *de minimis* source category analysis on the entire inventory early in the control measure identification process, the EPA believes that there is a risk that such an analysis may bring about investment of scarce time and analytical resources on analysis of categories to exclude rather than on the identification of the most beneficial control measures for reducing $PM_{2.5}$ and its precursors to achieve expeditious attainment of the standard. In addition, the EPA finds merit in comments suggesting that an upfront exemption of multiple *de minimis* source categories in an area would undermine the ability of the state (or other interested parties) to evaluate, after the identification of potential control measures, whether the area could advance the attainment date in order to attain "as expeditiously as practicable."

Moreover, as noted in Section IV.D of this preamble on Moderate areas, the EPA also finds that from a technical perspective, it would be very challenging to implement a *de minimis* source category process in a consistent manner nationally without clear guidelines describing how narrowly or how broadly a *de minimis* exemption could apply to a "source category," or how the technical analysis would need to be performed. For example, should a source category consist of all industrial boilers? Or all industrial boilers that burn a particular fuel? Or all industrial boilers that burn a particular fuel and are within a specific size range? The NAICS codes do not provide an appropriately comprehensive approach for defining source categories for all stationary, mobile, and area sources for this purpose. It has been noted that a *de minimis* source category exemption process is described in the 1994 PM_{10} NAAQS implementation

guidance (the Serious Area Addendum). In PM_{10} areas, however, it may have been relatively straightforward to identify what were the predominant source categories contributing to the NAAQS violations (such as direct $PM_{2.5}$ emissions from dust or wood smoke), and therefore to be able to identify what categories might be considered as not predominant contributors (or *de minimis*). However, implementation of the $PM_{2.5}$ NAAQS presents much more complex challenges. Precursors and their contribution to secondarily formed PM play a much greater role in $PM_{2.5}$ nonattainment areas than in PM_{10} nonattainment areas. In addition, the relative impact of each precursor to local $PM_{2.5}$ concentrations varies from area to area, and even within sections of the same area. To appropriately implement an approach allowing for *de minimis* source category impacts, the EPA believes that a nationally consistent source category definition would be needed, along with sophisticated air quality modeling to evaluate the relative impacts of precursors emitted from different "source categories." The resources needed to conduct such analyses could be substantial, and would ultimately not help identify what control measures would be needed to solve the air quality problem. For all of these reasons, a *de minimis* source category concept is not included in the final rule for Serious areas.

iv. Additional Feasible Measures.

While the proposed approaches and criteria for identifying appropriate control measures for a Serious area are necessarily different than for a Moderate area, it is important to note two similarities: first, that the EPA interprets the requirement under CAA section 172(c)(6) for a state to adopt "other measures" needed for attainment to apply to sources located inside and outside of any $PM_{2.5}$ nonattainment area (but within the state's boundaries), whether the area is classified as Moderate or Serious; and second, similar to the RACM requirement for Moderate nonattainment

areas under subpart 4, CAA section 189(b)(1)(B) requires that BACM must be implemented no later than 4 years after a Moderate area is reclassified to Serious.

Taking these two statutory provisions together, the EPA proposed that the other measures required under CAA section 172(c)(6) must include "additional feasible measures," which would be those measures and technologies that otherwise meet the criteria for BACM/BACT but that can only be implemented in whole or in part beginning 4 years after reclassification of an area, but no later than the statutory attainment date for the area. *See* proposed 40 CFR 51.1000.

Some commenters agreed that an area must also consider adopting control measures that cannot be implemented within the 4-year deadline for implementation of BACM and BACT. Some commenters suggested that additional feasible measures should only be tied to expeditious attainment.

In the final rule, additional feasible measures would necessarily be implemented by sources in the nonattainment area, and a state is required to implement them if they are needed in addition to BACM and BACT to bring the area into expeditious attainment. The state must also adopt other emission reduction measures for sources within the state but outside the nonattainment area if such measures in conjunction with other control measures would enable the area to attain the standard by the attainment date, or enable the area to advance the attainment date by at least 1 year.

These "additional feasible measures" would be analogous to the "additional reasonable measures" in the RACM and RACT analysis process, which are technologically and economically feasible measures that cannot qualify as RACM or RACT because they cannot be implemented within 4 years of designation of a Moderate nonattainment area. Under the approach for determining BACM and BACT for sources in a Serious nonattainment area

described later in this section, a state would identify additional feasible measures as part of the BACM and BACT determination process, just as additional reasonable measures would be identified as part of the state's RACM and RACT determination process.

The EPA recognizes that with regard to Serious areas, only a nonattainment area that is reclassified under the agency's discretionary authority might have sufficient time between the date for implementing BACM and BACT and the statutory Serious area attainment date to implement additional measures beyond BACM and BACT. BACM and BACT must be implemented no later than 4 years after reclassification of the area; areas reclassified to Serious because they cannot practicably attain the relevant NAAQS by the applicable attainment date could potentially have significantly more than 4 years between the date of reclassification and the statutory Serious area attainment date, during which time the area could continue to implement additional feasible measures to bring the area into attainment.

By way of illustration, for areas designated in the first round of designations for the 2012 $PM_{2.5}$ NAAQS, the statutory Moderate area attainment date will be no later than December 31, 2021. If a state submits a Moderate area attainment plan by the statutory attainment plan due date (18 months after designation, or in this example, October 2016) and the plan demonstrates that the area cannot practicably attain the NAAQS by December 31, 2021, then the EPA has a statutory duty to reclassify such an area within 18 months of the attainment plan due date (*i.e.*, by April 2018). The statutory Serious area attainment date would be the end of the tenth year following designation, or December 31, 2025. In such a case, the state would need to implement BACM for the area within 4 years of reclassification, or by April 2022, leaving over 3.5 years between the statutory deadline for implementing BACM and the statutory attainment date for the area. The requirement for the state to identify and adopt additional feasible measures for the area

would mean that the state would need to identify those control measures and technologies that are feasible (according to the proposed BACM and BACT criteria described later in this section) and that can be implemented between April 2022 and December 2025. The EPA expects that while such a long span of time may be available only to a very few Serious nonattainment areas, it would be appropriate to require such areas to implement measures in addition to BACM and BACT if, taken together, they can provide for attainment by the attainment date or advance the attainment date for the area by at least 1 year. Accordingly the EPA has codified a definition of "additional feasible measures" and specified the conditions under which such measures would need to be included in a serious area plan submission. *See* 40 CFR 51.1000 and 40 CFR 51.1010(a)(4)(ii).

v. Steps of the BACM/BACT Selection Process.

In addition to the regulatory decisions earlier, the EPA summarized and sought comment on further guidance for states to follow in selecting BACM/BACT. The guidance was primarily derived from the Addendum. This section reviews that guidance, clarifies and updates it for purposes of $PM_{2.5}$, and responds to significant comments on the guidance discussion included in the proposal.

The BACM/BACT selection process for implementation of the $PM_{2.5}$ NAAQS is designed to take into account the local facts and circumstances and the nature of the air pollution problem in a given nonattainment area. The following sections describe the steps of the process, including: (i) develop a comprehensive inventory of sources and source categories of directly emitted $PM_{2.5}$ and $PM_{2.5}$ precursors; (ii) identify existing and potential control measures for the sources in the inventory; (iii) evaluate the technological feasibility of potential control measures; (iv) evaluate the economic feasibility of potential control measures; and (v) determine the

earliest date by which a control measure or technology can be implemented in whole or in part.[164] These steps are described more fully in the following subsections.

Step 1: Develop a comprehensive inventory of sources and source categories of directly emitted $PM_{2.5}$ and $PM_{2.5}$ precursors. As with any control strategy analysis for a nonattainment area, the EPA recommends that the state begin with a current detailed emissions inventory of the various sources that emit direct $PM_{2.5}$ and $PM_{2.5}$ precursors in the Serious area. The inventory should identify major stationary sources (i.e., sources with the potential to emit 70 tpy of direct $PM_{2.5}$ or any precursor), nonmajor stationary sources, mobile sources, and area sources. The inventory also should identify both anthropogenic and nonanthropogenic emissions sources.[165] The EPA expects the state to start with the base year emissions inventory submitted with the Moderate area attainment plan as required under CAA section 172(c)(3), and update it as necessary to reflect new source construction, facility shutdowns, growth in certain source categories, and any other relevant changes. This inventory should be the most comprehensive and accurate inventory available, and it should be consistent with the emissions inventory requirements for Serious area plans as described in Section VI.B of this preamble.

Step 2: Identify potential control measures. The state should identify potential control measures for all sources and source categories in the latest base year emission inventory for the nonattainment area. The list of existing and potential control measures should include options not previously considered as RACM/RACT for the area, as well as additional measures not previously evaluated in the RACM/RACT analysis. For purposes of identifying new measures to consider in its BACM/BACT analysis, the EPA recommends that the state obtain and evaluate a

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[164] For additional information, *see ibid.* at 42012–13.
[165] Addendum to the General Preamble, 59 FR 41998 (August 16, 1994), at page 42012.

wide range of sources of information on existing and potential control measures. Other nonattainment areas in the same state, and other states across the country are important sources of information about control measures that are currently being implemented. Regional planning organizations, and state and local air quality consortiums have in the past developed summaries of control measures that should provide useful information for this process.[166]

The EPA's RBLC provides a central data base of air pollution technology information that may be highly relevant to states seeking information on stationary source control technology that may qualify as BACT for $PM_{2.5}$ NAAQS implementation, and is available online at *http://cfpub.epa.gov/RBLC/*. There are also other resources available to assist states in identifying other potential control measures and control technologies for their BACM and BACT determinations. The EPA encourages states with Serious $PM_{2.5}$ nonattainment areas to visit the agency's Web site to find links to other online sources of information on potential control measures for states to consider.[167]

The state must incorporate appropriate measures into the list of potential control measures for the source categories in the Serious nonattainment area. The EPA would expect the state to identify an array of existing and potential new measures at least as broad as the list identified for the same area as part of the RACM and RACT analysis, in order to ensure that the state has a sufficiently expansive and comprehensive set of potential measures to evaluate. The

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[166] Add cite to 2006 STAPPA ALAPCO document and other control measure summaries. Add cite to menu of measures. Specific to potential control measures for mobile source emissions, the EPA's past guidance has indicated that where mobile sources contribute significantly to $PM_{2.5}$ violations, "the state must, at a minimum, address the transportation control measures listed in CAA section 108(f) to determine whether such measures are achievable in the area considering energy, environmental and economic impacts and other costs."[166]

[167] Links are provided to a number of national, state and local air quality agency sites from the EPA's $PM_{2.5}$ Web site: *http://www3.epa.gov/pm/measures.html*.

list of potential measures must include all measures identified as potential control measures for the nonattainment area when it was classified as Moderate or, for a given source category, one or more alternative control measures that would control emissions even more stringently than the measures included in the RACM/RACT analysis. In this way, the state will begin its BACM/BACT determination with a list of potential control options that is as complete and up-to-date as possible.

Step 3: Determine whether an available control measure or technology is technologically feasible. After developing a list of existing and potential new measures to evaluate for BACM and BACT, the state would then need to determine the technological feasibility of each identified control measure in light of a number of considerations, including each measure's individual energy and environmental impacts.[168]

1) Stationary sources. As described under the technological feasibility criteria for the control measures analysis for Moderate area attainment plans in Section IV.D of this preamble, the EPA's prior guidance on factors to consider for judging whether a particular control technology is technologically feasible should include a source's processes and operating procedures, raw materials, physical plant layout and potential environmental impacts such as increased water pollution, waste disposal and energy requirements. For example, the EPA recognizes that the process, operating procedures and raw materials used by a source can affect the feasibility of implementing process changes that reduce emissions and can also affect the selection of add-on emission control equipment. The feasibility of modifying processes or

[168] *Ibid.* at 42012.

applying control equipment also can be influenced by the physical layout of the particular plant, if the physical space available in which to implement such changes limits the choices.[169]

2) Area and mobile sources. With respect to determining whether a given control measure might not be technologically feasible as BACM for an area or mobile source, a state may consider factors in conducting its analysis that are similar to factors the state may have considered during the RACM and RACT determination process, such as local circumstances, the condition and extent of needed infrastructure, or population size or workforce type and habits, which may prohibit certain potential control measures from being implementable. However, in the instance where a given control measure has been applied in another NAAQS nonattainment area (for $PM_{2.5}$ or other pollutant), the state will need to provide a detailed justification for rejecting any potential BACM measure as technologically infeasible. Furthermore, if the state identifies a certain control measure for area or mobile sources that has been implemented in another nonattainment area and may qualify as BACM or BACT, the state must provide a reasoned justification if it deems it technologically infeasible to implement the same control measure to the same extent or magnitude as it was applied in the other nonattainment area.

Step 4: Determine whether an available control technology or measure is economically feasible. The fourth step of this process is to evaluate the costs of implementing each of the technologically feasible control measures and technologies in order to eliminate from further consideration any measures determined to be economically infeasible. In assessing "best" control measures and technologies, states with Serious $PM_{2.5}$ nonattainment areas must identify a control strategy for the area that overall is more stringent than that identified for the area when the state

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[169] *Ibid.* at 42013.

considered only the "reasonableness" of potential control measures for purposes of the RACM/RACT analysis. States need to consider emission reduction measures with higher costs per ton when assessing the economic feasibility of BACM and BACT controls (and, where applicable, additional feasible measures) as compared to the economic feasibility criteria applied in their RACM and RACT analysis (and analysis for additional reasonable measures) for the same nonattainment area.

Indeed, consistent with prior guidance on evaluating costs of a potential BACM/BACT, the EPA maintains that while the economic feasibility of a control measure is as important as its technological feasibility under the RACM and RACT determination process, economic feasibility is a less significant factor in the BACM and BACT determination process. In other words, a state must apply a higher standard for eliminating a technologically feasible control measure from further consideration as BACM due to cost alone.

In the Addendum, the EPA stated that "for PM_{10} BACM purposes, it is reasonable for similar sources to bear similar costs of emission reduction."[170] Additionally, the EPA indicated that "economic feasibility for PM_{10} BACM purposes should focus upon evidence that the control technology in question has previously been implemented at other sources in a similar source category without unreasonable economic impacts."[171] Thus, a state may not eliminate a particular control measure from further consideration as potential BACM if similar sources have successfully implemented such a measure. That is, a state must at a minimum continue to consider as potential BACM any technologically feasible control measures or technologies implemented by similar sources.

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[170] *Ibid.*
[171] *Ibid.*

In addition, a state may not automatically eliminate a particular control measure merely because other sources have not implemented the measure. In other words, a state must continue to consider technologically feasible measures that have not been implemented by similar sources but that can nonetheless effectively reduce emissions from the source category in question at a cost that is not cost prohibitive.

As with the EPA's approach for evaluating economic feasibility of potential reasonable measures for Moderate area attainment plans, for each technologically feasible control measure or technology, a state must evaluate the economic feasibility of the measure through consideration of the capital costs, operating and maintenance costs, and cost effectiveness (*i.e.*, cost per ton of pollutant reduced by that measure or technology) associated with such measure or control. While the EPA is not establishing a fixed dollar per ton cost threshold for economic feasibility of controls identified as potential BACM and BACT, the cost per ton of an acceptable measure for the BACM and BACT analysis generally would be higher than it was for the RACM and RACT analysis for the same nonattainment area. In addition, if a source contends that a source-specific control level should not be established because the source cannot afford the control measure or technology that is demonstrated to be economically feasible for purposes of BACM for other sources in its source category, the source should make its claim known to the state and support the claim with information regarding the impact of imposing the identified control measure or technology on the following financial indicators,[172] to the extent applicable:

[172] These longstanding factors were established in the EPA guidance in 1992 and are applicable to implementation programs for all of the NAAQS pollutants. *See* the appendices to the General Preamble, 57 FR 18070 (April 28, 1992).

1. Fixed and variable production costs ($/unit);

2. Product supply and demand elasticity;

3. Product prices (cost absorption vs. cost pass-through);

4. Expected costs incurred by competitors;

5. Company profits;

6. Employment costs;

7. Other costs (e.g., for BACM implemented by public sector entities).

Step 5: Determine the earliest date by which a control measure or technology can be implemented in whole or in part. Section 189(b)(1)(B) of the CAA requires that Serious area attainment plans provide for the implementation of BACM no later than 4 years after reclassification of the area to Serious. As with the EPA's proposed approach to RACM and RACT, the EPA proposes the term "implement" to mean that the control measure or technology has not only been adopted into the SIP for the area but has also been built, installed and/or otherwise physically manifested and the affected sources are required to comply. The EPA thus expects a state with a Serious nonattainment area to take timely action to implement BACM and BACT in the area.

A state must identify those technologically and economically feasible control measures and technologies that it can implement fully or partially within 4 years of reclassification of its Serious $PM_{2.5}$ nonattainment area. These measures will be considered BACM and BACT for the area. If a state evaluates a potential BACM or BACT measure and determines that it can be implemented only partially within 4 years after reclassification, the state must adopt the partial measure as BACM.

Where the earliest date that a measure can be implemented is beyond the 4 year mark following reclassification to Serious, the measure may still be needed as an "additional feasible measure" if the 4 year mark occurs before the Serious area attainment date. "Additional feasible measures" would be "best"-level, feasible measures that a state could implement in whole or in part on sources in the area sometime after the fourth year following reclassification and prior to the statutory attainment date for the area.

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

3. BACM and BACT Submission Requirements

a. Summary of Proposal. The proposal further specified the submission requirements once a state has determined the BACT/BACM requirements in its plan. The proposal required the state to submit a list of emissions sources, an emissions inventory for such sources, and several pieces of information regarding potential control measures for these sources.

b. Final Rule. The final rule remains relatively unchanged from the proposal. To ensure that attainment plan submissions contain the necessary supporting information for EPA review and approval of the state's selected BACM and BACT and additional feasible measures as applicable, 40 CFR 51.1010(a)(1)-(5) require the state to submit the following information as part of its Serious area attainment plan submission:

1) A list of all emissions source categories, sources and activities in the nonattainment area that emit direct $PM_{2.5}$ or any $PM_{2.5}$ precursor (for multi-state nonattainment areas, this would include source categories, sources and activities from all states which make up the area);

2) For each source category, source or activity in the nonattainment area, an inventory of direct $PM_{2.5}$ and all $PM_{2.5}$ precursor emissions;

3) For each source category, source or activity in the nonattainment area, a comprehensive list of potential control measures considered by the state for the nonattainment area;[173, 174]

4) For each potential control measure considered by the state but eliminated from further consideration due to a determination by the state that the control measure or technology was not technologically feasible, a narrative explanation and quantitative or qualitative supporting documentation to justify the state's conclusion;

5) For each technologically feasible emission control measure or technology, the state must provide the following information relevant to economic feasibility: (i) the control efficiency by pollutant; (ii) the possible emissions reductions by pollutant; (iii) the estimated cost per ton of pollutant reduced; and, (iv) a determination of whether the measure is economically feasible, with narrative explanation and quantitative supporting documentation to justify the state's conclusion;

6) For each technologically and economically feasible emission control measure or technology, the date by which the technology or measure can be implemented.

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[173] The EPA believes that it is not necessary to identify every possible variation of every type of control measure, or all possible combinations of technologies and measures that would apply to a given source or activity, as long as the state has properly characterized the potentially available emissions reductions and their costs. For example, the EPA believes that the state can conduct a thorough analysis of VMT reduction measures without including every possible level or stringency of implementation of certain possible measures or combinations of measures for reducing VMT, so long as those measures would not affect the overall assessment of VMT reduction capabilities and the associated costs.

[174] The Menu of Control Measures document is available at: *http://www3.epa.gov/ttn/naaqs/pdfs/MenuOfControlMeasures.pdf*.

As with a Moderate area attainment plan submission, the EPA recognizes that the base year emissions inventory that the state submits for the area in conjunction with its Serious area attainment plan will likely contain the information required under the first two items in this list. However, the EPA believes that it is incumbent on the state to ensure that the information needed for the EPA to evaluate the state's BACM and BACT and additional feasible measures analysis is presented as part of that analysis and in a format that provides transparency, consistency and the ability for another party to evaluate the state's analysis effectively and to duplicate the state's results. For this reason, the EPA is requiring the state to include the base year emissions inventory information with the BACM and BACT submission and as one element of the state's attainment plan due 18 months after reclassification of the area to Serious.

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

4. Criteria for Effective Regulations to Implement BACM and BACT and Additional Feasible Measures

a. Summary of Proposal. The proposal described the four main criteria for effective control measure regulations: such regulations must be quantifiable, enforceable, replicable, and accountable.

b. Final Rule. Guidance on effective control measure regulations is provided in the control strategy discussion for Moderate areas. *See* section IV.D.9 of this preamble, criteria for effective regulations to implement RACM and RACT and additional reasonable measures.

5. Relevance of prior BACT, LAER and BART determinations

a. Summary of Proposal. The preamble of the proposed rule stated that it should not be assumed that past control technology determinations would automatically be deemed to meet the

Serious area control measure requirements (BACM, BACT, or additional feasible measures) for an area.

b. Final Rule. The guidance on this issue in the preamble to the final rule remains largely unchanged. The EPA believes that BACT or lowest achievable emission rate (LAER) provisions for new sources (as distinct from BACT for existing sources), or best available retrofit technology (BART) for existing sources, could potentially qualify as BACM or BACT for purposes of meeting the Serious area attainment plan requirements. However, the EPA does not believe it is appropriate for a state to assume that just because a certain control technology was determined to meet BACT, LAER, or BART criteria for a new source sometime in the past, that such a control will also automatically meet the criteria for BACM or BACT or additional feasible measures for attainment planning purposes because the regulated pollutant or source applicability may differ and the analyses may be conducted many years apart. Thus, a state may not simply rely on prior BACT, LAER or BART analyses for the purposes of showing that a source has also met BACT for the relevant $PM_{2.5}$ NAAQS. Rather, the EPA expects that in Step 2 of the BACM and BACT determination process, the state would identify such measures as "existing measures" that should be further evaluated as potential BACM or BACT or additional feasible measures. At the same time, the EPA notes that the presence of previously installed control technology, and the technical and economic considerations that would be associated with upgrading to a measure that achieves greater reductions, is something that should be considered in the assessments of technological and economic feasibility of the newer measure.

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

6. Multi-state Nonattainment Areas

a. Summary of Proposal. The preamble to the proposed rule provided general guidance on coordination between states in multi-state nonattainment areas to ensure they adopt sufficient BACM/BACT and additional feasible measures to ensure expeditious attainment of the standard.

b. Final Rule. The guidance in the final rule remains largely unchanged. States that share a multi-state Serious $PM_{2.5}$ nonattainment area must consult with one another on BACM and BACT and additional feasible measures that will be required for the nonattainment area in the different states. This requirement would be consistent with the overall requirements for BACM and BACT and additional feasible measures determinations, as all states with Serious areas need to consider implementing BACM and BACT-level measures that have been implemented in other states, even if those measures incur higher costs. The EPA anticipates that states may potentially adopt controls that differ from state to state, based upon each state's determination of what qualifies as "best" given the mixture of sources and potential controls in the state portions of relevant nonattainment areas, subject to EPA approval. If the state can adequately demonstrate that its chosen BACM and BACT and additional feasible measures fully meet the EPA's proposed criteria for such measures, then the agency may consider approving individual state plans that differ in implementation of control measures.

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

7. Environmental Justice Considerations for Developing the Attainment Plan Control Strategy for a Serious $PM_{2.5}$ Nonattainment Area

a. Summary of Proposal. The proposal provided general guidance for ensuring that overburdened populations are appropriately protected.

b. Final Rule. The guidance in the final rule remains largely unchanged. The EPA strongly urges states to consider the environmental justice aspects of any control measures they have identified as BACM and BACT or additional feasible measures in order to provide health protection for overburdened populations. Please *see* Section XI of this preamble, which discusses possible approaches for states to address environmental justice concerns associated with implementation of the $PM_{2.5}$ NAAQS in their SIP development process and attainment plans.

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

E. Modeling for Attainment Demonstrations

1. Due Dates for Submission of Serious Area Attainment Demonstrations

a. Summary of Proposal. Section IV.E of this preamble describes the EPA's attainment demonstration and modeling requirements for Moderate area plans. The EPA proposed that the same general attainment demonstration and modeling requirements for Moderate area plans should apply to Serious area attainment demonstrations. However, Serious area plans have additional statutory requirements.

Attainment demonstrations are due 18 months after reclassification if the EPA reclassifies the area to Serious after failure of the area to attain the applicable Moderate area deadline. Alternatively, CAA section 189(b)(2) requires states with designated Serious nonattainment areas to submit attainment demonstrations no later than 4 years after reclassification of the area to Serious if the reclassification occurs before the Moderate area attainment deadline. The EPA proposed an approach for determining an appropriate attainment plan control strategy for a Serious $PM_{2.5}$ nonattainment area that requires the state to submit the

attainment demonstration for the area within 18 months after reclassification, regardless of when or the authority under which an area was reclassified to Serious.

b. Final Rule. The statutory attainment demonstration provisions for Serious areas are as follows: Section 189(b) of the CAA requires a state with a designated Serious nonattainment area to submit an attainment plan for such area. As discussed earlier, CAA section 189(b)(1)(A) more specifically requires the state to submit an attainment demonstration including air quality modeling to establish either: (i) that the area will attain the relevant NAAQS by the applicable attainment date, or (ii) if the state is seeking an extension of the attainment date, that it is impracticable for the area to attain the relevant NAAQS by the statutory Serious area attainment date. For Serious nonattainment areas, the attainment date is as expeditiously as practicable, but no later than the end of the tenth calendar year after designation as nonattainment. A demonstration that shows that it is impracticable for the area to attain within this timeframe must also provide for attainment of the NAAQS by the most expeditious alternative date practicable, but no later than 5 years after the maximum statutory Serious area attainment date (based on the criteria specified in CAA section 188(e)).

The EPA is not finalizing the proposed approach of requiring all Serious area attainment demonstrations to be due 18 months after reclassification. If the EPA reclassifies the area to Serious after failure of the area to attain the applicable Moderate area deadline, the attainment demonstration will be due in 18 months. States with Serious nonattainment areas that were reclassified before the Moderate area attainment deadline must submit attainment demonstrations the earlier of 4 years after reclassification of the area to Serious or the end of the eighth calendar year after initial designation. However, these areas are still required to submit BACT/BACM measures within 18 months of being reclassified as Serious. Sections VI.A and VI.D of this

preamble describe more fully the EPA's approach for plan due dates and control strategy analyses for all elements of a Serious area attainment plan. Section VI.J of this preamble provides a complete discussion of the EPA's criteria for granting a Serious area attainment date extension.

c. Comments and Responses. Any comments received on this section are addressed in the Response to Comments document found in the docket for this action.

2. Attainment Demonstration Requirements for Serious Areas

a. Summary of Proposal. The proposal described the attainment demonstration and impracticability demonstration requirements for Serious nonattainment areas. The EPA proposed that a serious area plan must include an attainment demonstration that demonstrates how a state will attain the $PM_{2.5}$ NAAQS by the applicable attainment date, must include analyses supporting the state's determination of its proposed attainment date, and must show that the area will attain the NAAQS as expeditiously as practicable, but not later than the tenth calendar year after designation. The proposal indicated that in order to establish that the attainment date is as expeditious as practicable, the state must explain why the control measures adopted in the attainment plan provide for the most expeditious attainment and must include all BACM and BACT controls in the analysis.

b. Final Rule. The final rule requirements for Serious area attainment demonstrations are generally unchanged from the proposal. As described in Section IV.E of this preamble, an attainment demonstration is a plan that demonstrates how a state will attain the $PM_{2.5}$ NAAQS by the applicable attainment date. The EPA is finalizing a requirement that the demonstration for Serious areas must consist of: (i) technical analyses such as base year and future year modeling of emissions which identify sources and quantify emissions that are contributing to violations of

the $PM_{2.5}$ NAAQS; and, (ii) analyses of future year projected emissions reductions and air quality improvement resulting from existing (*i.e.* already-adopted or "on the books") national, regional and local programs, and potential new local measures needed for attainment, including RACM and RACT and BACM and BACT controls for the area, as well as other measures either inside the nonattainment area or outside the nonattainment area but within the state that could potentially accelerate attainment. Each state with a Serious nonattainment area must submit an attainment plan with an attainment demonstration that includes analyses supporting the state's determination of its proposed attainment date. In all cases, the state must show that the area will attain the NAAQS as expeditiously as practicable, but not later than the tenth calendar year after designation. In order to establish that the attainment date is as expeditious as practicable, the state must explain why the control measures adopted in the attainment plan provide for the most expeditious attainment and must include all BACM and BACT controls in the analysis.

A state with a Serious nonattainment area can also submit an impracticability demonstration (under CAA section 189(b)(1)(A)(ii)) as part of seeking an extension of the attainment date under CAA section 188(e). The impracticability demonstration for a Serious area would be similar to an impracticability demonstration for Moderate areas because it must show that the area will not be able to attain the $PM_{2.5}$ NAAQS by the latest possible statutory attainment date, which in this case is by the end of the tenth calendar year following designation.

In order to support a Serious area impracticability demonstration, the state must show (through modeling) that attainment cannot be reached by the latest statutory Serious area attainment date, even if all RACM and RACT and BACM and BACT controls, as well as other measures either inside the nonattainment area or outside the nonattainment area but within the state (as may be necessary to meet the requirements of 172(c)(6)), were implemented before the

attainment date. Moreover, in addition to the Serious area impracticability demonstration, to support an extension of the attainment date, the Serious area plan must demonstrate (again, using air quality modeling) that it provides for attainment by the most expeditious alternative date practicable employing MSM, as specified in CAA section 188(e). (MSM are discussed in more detail in Section VI.J of this preamble). As a result, the required plan in the case of a Serious area that cannot attain by the statutory attainment date is both an impracticability demonstration (to justify an extension beyond the statutory attainment date) and an attainment demonstration that serves as the basis for proposing an appropriate alternative attainment date. Note that this is different from a Moderate area impracticability demonstration, which is not required to serve as the basis for proposing a new area attainment date.

c. Comments and Responses. Any comments received on this section are addressed in the Response to Comments document found in the docket for this action.

3. Air Quality Modeling Required for Serious Area Attainment Demonstrations and Impracticability Demonstrations

a. Summary of Proposal. The EPA proposed to require air quality modeling in support of both a Serious area attainment demonstration and a Serious area impracticability demonstration.

b. Final Rule. The EPA is finalizing a requirement for states to submit air quality modeling in support of both attainment demonstrations and impracticability demonstrations for Serious $PM_{2.5}$ nonattainment areas. Unlike the impracticability demonstration for Moderate areas described in CAA section 189(a)(1)(B)(ii), the impracticability demonstration for Serious areas in CAA section 189(b)(1)(A)(ii) also requires air quality modeling establishing the most expeditious alternative attainment date practicable. Therefore, air quality modeling is a required element in all attainment demonstrations for Serious areas.

Some commenters believed that both Moderate and Serious area impracticability demonstrations must include air quality modeling. The EPA does not agree and believes the statute only requires air quality modeling for Serious area impracticability demonstrations. This stems from the slightly different statutory construction in CAA section 189(b)(1)(A) compared to CAA section 189(a)(1)(B). Section 189(b)(1)(A) of the CAA specifies an air quality modeling requirement as a parenthetical, which the EPA interprets to apply to both the requirements in CAA section 189(b)(1)(A)(i) [attainment demonstrations] and CAA section 189(b)(1)(A)(ii) [impracticability demonstrations]. Additionally, the fact that a Serious area impracticability demonstration must also include an attainment demonstration with an alternative attainment date logically supports the final rule conclusion that a Serious area impracticability demonstration must include air quality modeling. Modeling is needed to demonstrate attainment and to propose an alternative attainment date for the Serious area. This differs from a Moderate area impracticability demonstration, which only serves to demonstrate that attainment cannot be reached by the Moderate area attainment date. A Moderate area impracticability demonstration does not require a demonstration of attainment or setting of an alternative future attainment date. It merely starts the process of reclassifying an area to Serious and the eventual required submission of a Serious area implementation plan.

Other than the timing of plan submissions and additional required elements of a Serious area plan (such as BACM and BACT), the relevant air quality modeling procedures and guidance for Moderate and Serious area plans are the same. *See* Section IV.E of this preamble for more details on the modeling requirements and guidance for all $PM_{2.5}$ nonattainment areas.

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

4. Attainment Demonstrations Required to be Submitted by an Area Reclassified to Serious

a. Summary of Proposal. The proposal discussed the attainment demonstration requirements for Moderate nonattainment areas that subsequently are reclassified to Serious nonattainment. The EPA proposed that states with Moderate nonattainment areas that get reclassified to Serious nonattainment areas must first submit a Moderate area plan and then a separate Serious area plan.

b. Final Rule. The EPA is finalizing requirements for states to submit a Moderate area attainment demonstration (or impracticability demonstration) and then if reclassified to Serious nonattainment, a separate Serious area attainment demonstration. Under CAA section 189(a)(1)(B), a state with a Moderate nonattainment area is required to submit a demonstration that the area either will attain or cannot practicably attain the NAAQS by the statutory attainment date. Regardless of whether the state submits an attainment demonstration or an impracticability demonstration for a Moderate area, if such an area is reclassified to Serious prior to or after failing to attain the applicable NAAQS, the state is required under CAA section 189(b)(1)(A) to submit a new attainment demonstration as part of an area's Serious area attainment plan. The separate statutory requirements for Moderate and Serious nonattainment areas anticipate two separate attainment plan submissions, and the EPA's existing guidance in the General Preamble and Addendum further support this expectation. While the state is required to submit a separate Serious area attainment plan, the EPA anticipates that certain control strategies may build upon those previously adopted and implemented as part of the Moderate area plan. For example, an area dominated by wood smoke emissions may not attain the standard by the statutory Moderate

area attainment date because all necessary woodstove change-outs could not occur in that timeframe, but additional woodstove change-outs could occur by the statutory Serious area attainment date.

c. Comments and Responses.

Comment: Some commenters agreed with the EPA that areas seeking to be reclassified from moderate to serious must submit two separate attainment plan submissions. The commenter stated the Act promises that all areas, even the most polluted, will implement reasonably available controls and provide at least some interim health protections while preparing a serious area plan containing more protective requirements.

Response: The EPA agrees with the comment. In the final rule, an area that is reclassified to Serious must submit both Moderate and Serious area plans, and all statutory requirements for a Moderate area (including RACT and RACM) must be met by the statutory deadline.

5. Future Year(s) to be Modeled in Attainment Demonstrations

a. Summary of proposal. A state performing a modeling analysis for an attainment demonstration or a Serious area impracticability analysis must select a future year for the analysis. The EPA proposed that for an attainment demonstration, a state should select the future modeling year such that all emissions control measures relied on for attainment will have been implemented by the beginning of that year. The EPA recommended the last year of the statutory attainment date as a starting point for Serious nonattainment area modeling demonstrations.

b. Final Rule. The EPA is finalizing a requirement that all emissions control measures relied on for attainment must have been implemented by the beginning of the attainment year. *See* 40 CFR 51.1011(b)(6). To demonstrate attainment, the modeling results for the nonattainment area must predict that emissions reductions implemented by the beginning of the

last calendar year preceding the attainment date will result in $PM_{2.5}$ concentrations that meet the level of the standard.[175]

While states should choose the future modeling year based on a number of factors, the EPA recommends the last year of the statutory attainment date as a starting point for modeling for two reasons. First, a state with a Serious area for which it submits an attainment date extension request under CAA section 188(e) must show that the area cannot practicably attain the NAAQS by the end of the tenth calendar year following designation of the area. Therefore, the appropriate future modeling year for making such a demonstration is the tenth year after designations. Even if a state does not submit (or does not intend to submit) a Serious area attainment date extension request, modeling the tenth year is a logical starting point to determine if attainment by year ten is likely. If attainment-level concentrations of $PM_{2.5}$ are not expected in the tenth calendar year after designations, then the area must also, as a requirement to receive an extension of the Serious area attainment date, submit a demonstration (using air quality modeling) that provides for attainment by the most expeditious alternative date practicable, but no later than the end of the fifteenth year after designation, with the implementation of MSM (*see* Section VI.J of this preamble for details about MSM determinations).

Second, even though attainment of any $PM_{2.5}$ NAAQS is determined by averaging 3 years of ambient data, states do not have to model 2 years before the attainment date to show modeled attainment. Since the design value is an average of the annual or 98^{th} percentile value for 3 consecutive years, attainment can still be shown even if concentrations exceed the NAAQS

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[175] Note that for purposes of the $PM_{2.5}$ NAAQS, a determination of attainment (or failure to attain), which the EPA is required to make after the attainment date has passed, is based on ambient data from the most recent 3 years prior to the attainment date for the area.

in one or more of the 3 years used to determine attainment (as long as the average of the three annual values is less than the NAAQS). Therefore, it is appropriate to model any of the 3 years used to determine attainment. For these reasons, it is acceptable, and may in fact be most efficient, for a state to begin the Serious area attainment demonstration process by modeling the final year of the statutory attainment date to determine future year modeled $PM_{2.5}$ concentrations in the tenth year after designations.

Because an area must attain "as expeditiously as practicable," additional considerations are necessary before an attainment date can be established. Criteria for establishment of the Serious area attainment date are discussed in Section VI.I of this preamble. In evaluating such considerations, the question arises as to whether additional future modeling is required beyond the recommended final year modeling just discussed. For purposes of determining the attainment date that is as expeditious as practicable, the state must conduct future year modeling that takes into account growth and known controls (including any controls that were previously determined to be RACM and RACT for the area). For example, for an area designated nonattainment for the 2012 $PM_{2.5}$ NAAQS in 2015 and subsequently reclassified to Serious in 2021, a future case scenario for the year 2025 (10 years after the initial nonattainment designation) would be needed to examine whether existing federal, state, and local measures (including previously identified and implemented RACT/RACM controls for the area) plus the BACM and BACT identified by the state would result in attainment. Since the EPA is finalizing the requirement that BACM and BACT must be determined independent of the attainment demonstration for the area, the future case scenario must include BACM and BACT controls in the analysis plus any additional measures on sources inside and outside of the nonattainment area (but within the state) that the state has identified as feasible to implement by the attainment date. Note that similar to RACM

and RACT, BACM and BACT controls must be implemented within 4 years after reclassification to Serious nonattainment. In order to justify an extension of the attainment date beyond the end of the tenth year after designation, the state must show that attainment by that date (including the anticipated emissions reductions from RACM and RACT and additional reasonable measures, and BACM and BACT and additional feasible measures) would be impracticable. Any proposed attainment date after the 10 year period must include modeling of BACM and BACT controls plus the most stringent measures that are included in the implementation plan of any state and can be feasibly implemented in the area. The attainment date extension beyond 10 years can be for up to 5 additional years, but the proposed attainment date must also be shown to be as expeditious as practicable. Section VI.J of this preamble provides a complete discussion of the EPA's proposed interpretation of the statutory requirements for a Serious area attainment date extension under CAA section 188(e).

As with Moderate area attainment demonstrations, the EPA believes that it is not necessary or reasonable to require states to model each and every year to determine the appropriate attainment date for a Serious $PM_{2.5}$ nonattainment area given the resource demands associated with modeling.[176] In some cases it may be reasonable to model one additional interim year before the maximum statutory attainment date. However, in most cases, the air quality benefits of an identified set of reasonable control measures, BACM and BACT and additional feasible control measures can be estimated through model sensitivity analyses and the development of sensitivity factors (factors to relate tons of emissions reductions in the area to

[176] States with Serious areas that request an attainment date extension beyond 10 years must model the tenth year after designation of the area as part of an impracticability demonstration, plus an additional year beyond that which represents the attainment date.

$PM_{2.5}$ concentration changes in the area). For example, states can model across the board percentage reductions in direct $PM_{2.5}$ and/or precursor emissions (in separate model runs or using advanced modeling techniques such as DDM) to determine the impact of emissions reductions on $PM_{2.5}$ concentrations in the area. This modeling can be performed with a single attainment year modeling platform, which is much less resource intensive than modeling multiple additional future years. The EPA strongly recommends that states discuss the selection of the future year(s) to model with their respective EPA Regional Office as part of the modeling protocol development process prior to embarking on the modeling.

c. Comments and Responses. Any comments received on this section are addressed in the Response to Comments document found in the docket for this action.

6. Attainment Year Motor Vehicle Emissions Budgets

As with Moderate areas, the transportation conformity rule requires that Serious area attainment plans establish motor vehicle emissions budgets for the area's attainment year. Therefore, once a Serious area's attainment date has been established, the state is required to establish motor vehicle emissions budgets for direct $PM_{2.5}$ and any relevant $PM_{2.5}$ precursor for the attainment year.[177] If a state's SIP submission demonstrates that a Serious area cannot attain by the end of the tenth calendar year after the area's designation, motor vehicle emissions budgets are not required for that tenth calendar year, but are required for the year that the state demonstrates to be the area's attainment year. A motor vehicle emissions budget for the purposes of a Serious area $PM_{2.5}$ attainment plan is that portion of the total allowable emissions within the

[177] For more information on $PM_{2.5}$ precursor requirements, *see* CAA section 93.102(b)(2)(iv) and (v) of the transportation conformity rule. *See also* the May 6, 2005, final transportation conformity rule that addressed requirements for $PM_{2.5}$ precursors. (70 FR 24280).

nonattainment area allocated to on-road sources as defined in the submitted attainment plan.[178] Such motor vehicle emissions budgets would be calculated using the latest planning assumptions and the latest approved motor vehicle emissions model available at the time that the attainment plan is developed, unless EPA approves the state's use of an alternative model.[179]

F. RFP Requirements

1. General Approach to RFP

a. Summary of the Proposal. The EPA generally proposed that a state must submit an RFP plan as part of any attainment plan submission for a Serious nonattainment area in order to satisfy the statutory requirements for RFP, similar to a Moderate area attainment plan. The EPA proposed that the applicable baseline year must be the same year as that represented by the latest base year inventory for the Serious area. The EPA proposed that the state must include in its RFP analysis the anticipated emissions reductions expected to be achieved through the implementation of control measures required by the control strategy explained in Section VI.D of this preamble (BACM and BACT, additional feasible measures and MSM if applicable). As with RFP plans for Moderate areas, the EPA proposed that a state must submit RFP projected emissions as part of the RFP plan for any Serious $PM_{2.5}$ nonattainment area following the same guidance that applies to emissions inventories for attainment plans (*see* Section VI.B of this preamble for a complete discussion of emissions inventories for Serious area attainment plans). The EPA also proposed that motor vehicle emissions budgets must also be established for direct

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[178] A state would also establish motor vehicle emissions budgets for an area's attainment year. Those budgets would be the motor vehicle emissions that the SIP establishes as being necessary to attain the NAAQS.

[179] If an area includes re-entrained road dust in the motor vehicle emissions budget, the latest approved version of AP-42 should be used unless the EPA has approved an alternative model for the area.

$PM_{2.5}$ and any $PM_{2.5}$ plan precursor using the latest planning assumptions and the latest approved motor vehicle emissions model available at the time that the Serious area attainment plan is developed.[180] It was not necessary to propose that RFP plans for Serious areas include motor vehicle emissions budgets for direct $PM_{2.5}$ and any $PM_{2.5}$ plan precursor because, as stated in the section of this rule that addresses RFP requirements for Moderate $PM_{2.5}$ areas, the transportation conformity rule already requires that RFP plans establish motor vehicle emissions budgets. RFP plans would therefore be required to establish motor vehicle emissions budgets for direct $PM_{2.5}$ and any relevant $PM_{2.5}$ plan precursor. The EPA also proposed that guidance found in the Moderate nonattainment areas RFP section of the proposal should also apply to Serious nonattainment areas.

b. Final Rule. The EPA is finalizing rule provisions for Serious areas that essentially mirror the approach to Moderate areas found in Section IV.F of this preamble. The EPA is further clarifying application of those provisions by providing guidance that closely follows the Moderate area guidance regarding how to prepare an RFP plan, RFP projected emissions, geographic coverage of emission sources for RFP, and RFP requirements for multi-state nonattainment areas.

As with a Moderate area attainment plan, the EPA is finalizing that a state must submit an RFP plan as part of any Serious area attainment plan in order to satisfy the statutory requirements for RFP. The plan must contain appropriate information to demonstrate that adequate emissions reductions will be achieved through control measures in the attainment plan in order to meet the statutory definition of RFP. The plan must include three components: (1) an

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[180] *Ibid.*

implementation schedule for control measures on sources in the nonattainment area, (2) RFP projected emissions for each applicable quantitative milestone year determined in Section VI.G of this preamble, based on the anticipated control measure implementation schedule; and (3) an analysis that demonstrates that this schedule of aggregate emissions reductions achieves sufficient progress toward attainment between the applicable baseline year to the attainment year. For additional discussion of each of the components of the RFP plan, refer to Section IV.F of this preamble. *See* 40 CFR 51.1012(a).

The EPA requires that the applicable baseline year must be the same year as that represented by the latest base year inventory for the Serious area. The projected attainment year may be up to the end of the tenth year following designation for a Serious area that can demonstrate attainment pursuant to CAA section 189(b)(1)(A), or up to the end of the fifteenth year following designation for a Serious area that sought an extension of the statutory attainment date pursuant to CAA section 188(e).[181] As with Moderate areas, the RFP analysis must clearly convey how the schedule for implementing the control strategy will provide for generally linear or stepwise progress towards attainment. If stepwise progress is more appropriate for the specific nonattainment area, the state is required to submit a clear rationale and supporting information to explain why generally linear progress towards attainment in the area is not appropriate (*e.g.*, due to the nature of the nonattainment problem, the types of sources contributing to $PM_{2.5}$ levels in the area, and the ability to perform timely implementation of control measures). For a Serious area, the EPA requires that the state must include in its RFP analysis the anticipated emissions

[181] As noted in Section V.B of this preamble, depending upon when the area is reclassified from Moderate to Serious, this base year inventory may need to be more recent than the inventory submitted with the Moderate area attainment plan.

reductions expected to be achieved through the implementation of control measures required by the control strategy described in Section VI.D of this preamble (BACM and BACT, additional feasible measures and MSM, if applicable). Similar to Moderate areas, the optional air quality analysis discussed in Section IV.F of this preamble is also available for use by a state preparing a Serious area RFP plan.

Additionally, the EPA requires that motor vehicle emissions budgets must also be established for direct $PM_{2.5}$ and $PM_{2.5}$ plan precursors using the latest planning assumptions and the latest approved motor vehicle emissions model available at the time that the Serious area attainment plan is developed.[182] *See* 40 CFR 51.1012(a).

Finally, similar to Moderate areas, Serious areas that are multi-state or multi-jurisdictional shall provide RFP plans for each state represented in the nonattainment area that demonstrate RFP on the basis of common multi-state inventories. The states or jurisdictions within which the area is located must provide a coordinated RFP plan. For further information, *see* Section IV.F.5 of this preamble. *See* 40 CFR 51.1012(b).

c. Comments and Responses. Any additional comments received related to RFP are addressed Section IV.F of this preamble or in the Response to Comments document found in the docket for this action.

G. Quantitative Milestones

[182] If an area includes re-entrained road dust in the motor vehicle emissions budget, the latest approved version of AP-42 should be used unless the EPA has approved an alternative model for the area.

1. Summary of the Proposal

The EPA proposed that a Serious area plan for an area that can demonstrate attainment by the statutory Serious area attainment date must also include quantitative milestones to be reached 7.5 and 10.5 years from designation, to help assess the state's progress toward attaining the $PM_{2.5}$ NAAQS in the event the area fails to attain by the applicable attainment date. For a Serious area that cannot demonstrate attainment by the statutory Serious area attainment date, the EPA proposed that the state must include in the Serious area attainment plan quantitative milestones to be achieved at 7.5, 10.5 and 13.5 years from the area's date of designation.

The EPA proposed that the general approach to selecting quantitative milestones outlined in the Moderate nonattainment area section of the proposal should apply to any attainment plan for a $PM_{2.5}$ nonattainment area, independent of its classification. Specifically, the EPA proposed that states be allowed to select the quantitative milestones that they identify as appropriate and quantifiable and that will provide for objective evaluation of progress toward attainment in their Serious $PM_{2.5}$ nonattainment area, and that the EPA, in its attainment plan approval process, will determine if they satisfy the statutory requirements of CAA section 189(c). Additionally, the EPA proposed to require that, at a minimum, states must include in all attainment plans for Serious $PM_{2.5}$ nonattainment areas a measure to confirm that some specific portion of BACM and BACT for the area has been implemented as appropriate in order to comply with the statutory requirement at CAA section 189(b)(1)(B).

2. Final Rule

The final rule provisions for Serious area quantitative milestones are similar to such provisions for Moderate areas discussed in Section IV.G of this preamble. As required for Moderate areas, Serious area attainment plans must include quantitative milestones that

demonstrate RFP towards attainment to be achieved every 3 years until the area is redesignated to attainment. To account for variations in the timing of possible additional plans that may be required beyond the Serious area attainment plan (such as a plan revision under CAA section 189(d) for a Serious area that fails to attain) the EPA is also clarifying, consistent with the requirements discussed in Section IV.G of this preamble for Moderate areas, that all Serious area attainment plans must contain one additional quantitative milestone to be met in the 3-year period beyond the applicable Serious area attainment date. This will provide the EPA with appropriate tools necessary to continue to monitor the area's continued progress toward attainment in the event that the area fails to attain and develops a new attainment plan.

For an area that is discretionarily reclassified to Serious under the provisions of CAA section 188(b)(1), the Serious area plan must contain quantitative milestones to be achieved by 7.5 years from the area's date of designation as nonattainment. In this case, the 7.5 year quantitative milestone that was submitted with the Moderate area plan may still be sufficient to demonstrate RFP or may have to be adjusted to reflect the difference in actual progress from the projections of the Moderate area plan. For an area that is reclassified to Serious under CAA section 188(b)(2) due to failure to attain, the 7.5 year quantitative milestones that were submitted with the Moderate area plan are still required and would be sufficient for the EPA to evaluate the area's progress toward attaining the NAAQS while the Serious area plan is being developed. All Serious area plans must also include quantitative milestones to be achieved 10.5 years from designation, to help assess the state's progress toward attaining the $PM_{2.5}$ NAAQS in the event the area fails to attain by the applicable attainment date. Finally, for a Serious area that cannot demonstrate attainment by the statutory Serious area attainment date, the state must include quantitative milestones to be achieved every 3 years, such that the final milestone falls within the

3 years after the applicable Serious area attainment date. For example, if a state requests an attainment date extension to 14 years after designation pursuant to CAA section 188(e), the attainment plan should contain not only the 7.5 and 10.5 year milestones, but also milestones to be achieved 13.5 and 16.5 years from designation.

The Addendum included guidance that recommended milestones "should be addressed by quantifying and comparing the annual incremental emissions reductions which result from implementation of BACM and BACT (required within 4 years after the area is reclassified as serious) and from additional measures included in the final serious area SIP to those reductions which were identified in the SIP as quantitative milestones necessary to achieve the NAAQS by the applicable attainment date."[183] The final rule does not specify that the milestones must be expressed in terms of emissions reductions. While the EPA notes that the Addendum contains this fundamental concept, it is impractical to expect that a state will always be able to quantify and compare real and projected emissions reductions, and submit a report to the EPA within 90 days of a given milestone, as required under CAA section 189(c)(2). Therefore, the final rule requires that states selecting quantitative milestones for a Serious area plan should use the approach outlined for Moderate areas, as described in Section IV.G of this preamble. This approach applies to any attainment plan for a $PM_{2.5}$ nonattainment area, independent of its classification. Specifically, the final rule requires that states be allowed to select the quantitative milestones that they identify as appropriate and quantifiable and that will provide for objective evaluation of progress toward attainment in their Serious $PM_{2.5}$ nonattainment area, and that the

[183] Addendum to the General Preamble, 59 FR 41998 (August 16, 1994), at page 42016.

EPA, in its attainment plan approval process, will determine if they satisfy the statutory requirements of CAA section 189(c). *See* 40 CFR 51.1013(a)(2).

In addition to this general approach for selecting quantitative milestones and similar to what the final rule requires for Moderate area attainment plans, the final rule requires that, at a minimum, states must ensure that the quantitative milestones for Serious $PM_{2.5}$ nonattainment areas assure RFP is being met by demonstrating that BACM and BACT have been implemented, as appropriate considering the timing of the milestone report, in order to comply with the statutory requirement at CAA section 189(b)(1)(B). The agency is further finalizing a corresponding requirement for Serious $PM_{2.5}$ nonattainment areas that receive an attainment date extension. For these areas, the quantitative milestone should assure that RFP is being met by demonstrating that MSM for the area has been implemented as required pursuant to CAA section 188(e). This requirement was not specifically outlined in the proposal. However, while considering the requirements that were proposed for Serious areas, the EPA determined that including this additional provision within quantitative milestones would enable the agency to better evaluate progress toward attainment in areas that receive a Serious area extension. The EPA acknowledges that the precise quantifiable metric for a quantitative milestone (*e.g.*, 50 percent of BACM and BACT measures implemented by milestone date 7.5 years from designation) would need to be determined on a case-by-case basis, as it would depend upon the date of reclassification of the area, which quantitative milestone (*i.e.*, 7.5 or 10.5 years from designation), and the anticipated implementation timing and nature of the BACM and BACT controls themselves. Nonetheless, the EPA believes it is appropriate to include confirmation that such control measures and technologies are implemented as a metric that any state with a Serious nonattainment area must adopt as a quantitative milestone to demonstrate RFP (and thus must

demonstrate compliance with when they submit their milestone report), as it derives from a statutory provision that applies to all Serious areas and thus represents a milestone that all Serious nonattainment areas must meet.

Additional provisions discussed in the Moderate area quantitative milestones requirements in Section IV.G of the preamble also apply to Serious areas. Specifically, if a Serious area submitted the optional air quality targets with the RFP plan then an air quality based milestone (i.e., one that is expressed in terms of an ambient $PM_{2.5}$ level) is strongly recommended to be included in order to confirm that the air quality target has been met for the quantitative milestone year. If used, this milestone will be compared to the most recently certified monitored ambient air data as part of the milestone report due after the area reaches each quantitative milestone date. For additional details on this optional provision, refer to Section IV.G of this preamble.

Finally, the quantitative milestone report requirements outlined in Section IV.G of this preamble apply to Serious areas as well. Specifically, the requirements associated with the timing and contents of the quantitative milestone report submission for a Moderate area also requirements in a Serious area. For additional details on these requirements, refer to Section IV.G of this preamble. *See* 40 CFR 51.1013(b).

3. Comments and Responses

Any additional comments received on this section are addressed in Section IV.G of this preamble or in the Response to Comments document found in the docket for this action.

H. Contingency Measures

1. Summary of the Proposal

In the proposal, the EPA proposed that the criteria for identifying and selecting contingency measures for a Serious area attainment plan should be the same as those for Moderate area plans. The EPA also proposed that, as with Moderate areas, a state may elect to rely on contingency measures that achieve emissions reductions not only from sources within the nonattainment area, but also from sources located outside the nonattainment area but within the state, provided that the measures on sources outside the designated nonattainment area are demonstrated to produce the appropriate air quality impact within the nonattainment area. As with contingency measures for Moderate area attainment plans, the EPA proposed that the emissions reductions associated with contingency measures for Serious area plans must be equal to approximately 1 year's worth of emissions reductions necessary to achieve RFP for the area, unless the state adequately demonstrates that some smaller amount of reductions is appropriate while the state is revising its attainment plan for the area. The agency also proposed options for submission deadlines for Serious area contingency measures.

2. Final Rule

As noted in Section IV.G of this preamble, all $PM_{2.5}$ nonattainment areas must include in their attainment plans contingency measures consistent with CAA section 172(c)(9). Contingency measures are additional control measures to be implemented in the event that an area fails to meet RFP requirements, fails to meet any quantitative milestone, fails to submit a quantitative milestone report or fails to attain the $PM_{2.5}$ standard by the applicable attainment date. These measures must be fully adopted rules or control measures that are ready to be

implemented quickly upon a determination by the EPA that a failure occurred, and such measures are required to take effect without significant further action by the state or the EPA.

The statutory contingency measure requirement at CAA section 172(c)(9) is not superseded or subsumed by any requirement under subpart 4, nor does it apply only to Moderate area attainment plans. Thus, contingency measures are required for Serious $PM_{2.5}$ nonattainment areas as part of a state's Serious area attainment plan submission. Accordingly, the final rule requires the criteria for identifying and selecting contingency measures for a Serious area attainment plan that are the same as those for Moderate area plans. Specifically, the EPA is finalizing that the following requirements must be met in order for contingency measures to be approvable as part of a state's Serious area attainment plan submission:

1) Contingency measures must be fully adopted rules or control measures that are ready to be implemented quickly upon a determination by the Administrator of the nonattainment area's failure to meet RFP, failure to meet any quantitative milestone, failure to submit a quantitative milestone report or failure to meet the standard by the applicable attainment date.
2) The SIP must contain trigger mechanisms for the contingency measures, specify a schedule for implementation, and indicate that the measures will be implemented without significant further action by the state or by the EPA.
3) Contingency measures should consist of control measures that are not otherwise included in the control strategy for the SIP, or that achieve emissions reductions not otherwise relied upon in the control strategy for the area.
4) Contingency measures should provide for emissions reductions equivalent to 1 year's share of reductions needed to demonstrate attainment (*i.e.*, the overall needed reductions

divided by the number of years from the base year to the attainment year), or approximately equivalent to 1 year's worth of air quality improvement or emissions reductions proportional to the overall amount of air quality improvement or emissions reductions to be achieved by the area's attainment plan.

The EPA is also finalizing its proposal to allow a state to rely on contingency measures that achieve emissions reductions on sources located outside the nonattainment area, but within the state provided that the measures on sources outside the designated nonattainment area are demonstrated to produce the appropriate air quality impact within the nonattainment area.

As with contingency measures for Moderate nonattainment areas, the EPA allows a state under these circumstances to rely on additional reductions from federal or local measures already scheduled for implementation as part or all of their contingency measures. The EPA could consider such measures as meeting the contingency measure requirement as long as they produce emissions reductions in excess of those required to meet other statutory nonattainment provisions (such as to meet BACM/BACT requirements) and they can be relied on to achieve a sufficient portion of the actual emissions reductions necessary to reduce emissions in the area while the state develops a new plan to bring the area into attainment.[184] As with contingency measures for Moderate area attainment plans, the EPA requires that the emissions reductions associated with contingency measures for Serious area plans should be approximately equivalent to 1 year's worth of emissions reductions necessary to achieve RFP for the area, unless the state adequately demonstrates that some smaller amount of reductions is appropriate while the state is revising its attainment plan for the area. *See* 40 CFR 51.1014(b)(2).

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[184] *See LEAN v. EPA*, 382 F.3d 575 (5th Cir. 2004).

The Addendum provided guidance related specifically to the selection and implementation of contingency measures for Serious nonattainment areas. First, the guidance indicated that "for those moderate areas reclassified as serious, if all or part of the moderate area plan contingency measures become part of the required serious area control measures (*i.e.*, BACM), then additional contingency measures must be submitted whether or not the previously submitted contingency measures had already been implemented. Further, the affected states must ensure that serious areas have adequate contingency measures considering, among other things, new information about the potential attainment shortfall for the newly reclassified serious area."[185] The EPA continues to believe that this approach to the statutory contingency measure requirement is appropriate and is finalizing it for purposes of implementing the $PM_{2.5}$ NAAQS in Serious nonattainment areas. *See* 40 CFR 51.1014.

With regard to the timing for implementing contingency measures, the EPA reiterates that the purpose of contingency measures is to ensure that corrective measures are put in place automatically at the time that the EPA makes a determination that an area has failed to meet RFP, failed to meet any quantitative milestone, failed to submit a quantitative milestone report or failed to meet the NAAQS by the applicable attainment date. For any nonattainment area, the EPA is required to determine within 90 days after receiving a state's RFP demonstration, and within 6 months after the attainment date for an area, whether the state has met their statutory obligations for demonstrating RFP or attaining the standard, as appropriate. As with Moderate areas, the EPA expects that contingency measures should become effective for Serious areas

[185] Addendum to General Preamble, 59 FR 41988 (August 16, 1994), at 42015.

within 60 days of the EPA making its determination that the area failed to meet RFP or attain the NAAQS.

3. Comments and Responses

Comment: One commenter supported the proposal that contingency measures may be approved if they will result in the equivalent air quality improvement as would be obtained by implementing measures obtaining 1 year's worth of emissions reductions needed to demonstrate attainment.

Response: In the case where a state selected the optional RFP analysis that includes air quality targets, the EPA expects that an area contingency measures may be approved if they will result in approximately 1 year's worth of air quality improvement.

I. Attainment Dates

1. Summary of Proposal

Section 188(c) of the CAA states that the attainment date for a Serious area is to be the end of the tenth calendar year after designation. The EPA proposed to interpret the reference to "designation" in section 188(c) as meaning the "effective date of designation."

2. Final Rule

As explained earlier, section 188 establishes the attainment dates for both Moderate and Serious areas. For a Serious area, CAA section 188(c)(2) provides that "the attainment date shall be as expeditiously as practicable but no later than the end of the tenth calendar year beginning after the area's designation as nonattainment." [186] For example, for an area initially designated as

[186] The EPA believes that there is no real effect on attainment date determinations due to the small difference in statutory language in CAA section 188(c) basing the Moderate area attainment date on the "sixth calendar year after the area's designation" and the Serious area

a Moderate nonattainment area effective in April 2015 that is reclassified to Serious at some future date, the Serious area attainment date, absent any approved Serious area attainment date extension, would be no later than December 31, 2025 (the end of the tenth calendar year after designation). As discussed in Section IV.I of this preamble, the EPA interprets the references to "designation" in CAA section 188(c) as meaning "effective date of designation," consistent with the agency's prior approach for implementing the previous $PM_{2.5}$ NAAQS under subpart 1 and other NAAQS.

3. Comments and Responses

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

J. Attainment Date Extensions

Background. Section 188(e) of the CAA provides that the EPA may grant a Serious area one attainment date extension of no more than 5 years "upon application by any state . . . if attainment by the [original Serious area attainment date] would be impracticable, the state has complied with all requirements and commitments pertaining to that area in the implementation plan, and the state demonstrates to the satisfaction of the Administrator that the plan for that area includes the most stringent measures that are included in the implementation plan of any state or are achieved in practice in any state, and can feasibly be implemented in the area."

The statute also includes factors that the EPA may consider in determining whether to grant the extension and the length of the extension, including "the nature and extent of

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attainment date on the "tenth calendar year *beginning* after the area's designation," (emphasis added).

nonattainment, the types and numbers of sources or other emitting activities in the area (including the influence of uncontrollable natural sources and transboundary emissions from foreign countries), the population exposed to concentrations in excess of the standard, the presence and concentrations of potentially toxic substances in the mix of particulate emissions in the area, and the technological and economic feasibility of various control measures."[187]

The proposal described the four main elements the state must submit when requesting a Serious area attainment date extension: 1) a demonstration that attainment by the statutory Serious area attainment date is impracticable; 2) a demonstration that the area is complying with all requirements and commitments in the applicable attainment plan; 3) a demonstration that the plan includes the MSM that are included in the implementation plan of any state, or are achieved in practice in any state; and 4) a demonstration of attainment by the most expeditious alternative date practicable. The proposal also included a discussion about the timing of extension request submissions, and how to interpret the second element in cases where the extension request is submitted after the state has already submitted an initial Serious area attainment plan. These topics are addressed in the following sections.

1. Demonstration That Attainment by the Statutory Serious Area Attainment Date is Impracticable

[187] Notably, these statutory criteria do not include specific ambient air quality criteria like the criteria that need to be met in the year prior to a Moderate area attainment date in order for the area to qualify for an attainment date extension under CAA section 188(d).

a. *Summary of Proposal*. The proposed rule discussed the requirements for a demonstration to show that it is impracticable for a Serious area to attain by the attainment date. This demonstration involves evaluating through air quality modeling whether all best available control measures will enable the area to attain the standard by the attainment date.

b. Final Rule. This section remains relatively unchanged from the proposal. In order to demonstrate that it is impracticable for an area to attain by the attainment date, the state would have to show that the implementation of all BACM/BACT (and additional feasible measures) will not bring the area into attainment by the statutory Serious area attainment date (*i.e.*, by no later than the end of the tenth calendar year after designation).[188] The statutory provision for demonstrating that it is impracticable to attain by the Serious area attainment date requires that the demonstration be based on air quality modeling (*see* CAA section 189(b)(1)(A)). Additional guidance on this demonstration is provided in Section VI.E of this preamble.

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

[188] This proposed approach parallels the EPA's proposed approach, described earlier in this preamble, for the impracticability option for Moderate areas under CAA section 189(a)(1)(B) in which all measures that qualify as RACM and RACT and all additional reasonable measures are required before a Moderate area plan could show impracticability of attainment by the statutory Moderate area attainment date (the end of the sixth calendar year after designation).

2. Demonstration That the Area is Complying With all Requirements and Commitments in the Applicable Implementation Plan

a. Extension Request Submitted at the Same Time as the Serious Area Attainment Plan.

i. Summary of Proposal.

The EPA proposed to interpret the criterion under CAA section 188(e) that requires a state to have "complied with all requirements and commitments pertaining to that area in the implementation plan" simply to mean that the state has implemented the control measures in the SIP revisions it has submitted to address the applicable requirements in CAA sections 172 and 189. For a Serious area attainment date extension request being submitted contemporaneously with the "original" Serious area attainment plan for the area, the EPA proposed to read CAA section 188(e) not to require the area to have a fully approved attainment plan that meets the CAA's requirements for Moderate areas. The EPA also proposed to read this provision not to bar an extension if all or part of an area's Moderate area plan is disapproved or has been promulgated as a FIP, provided the area has complied with all of the requirements in the applicable FIP, or in the applicable SIP and FIP.[189]

ii. Final Rule.

Some commenters stated that an area should only be able to receive an extension if the Moderate area plan had been fully approved by the EPA. Other commenters agreed with the EPA's proposed approach. They suggested that if a part of the Moderate plan had been disapproved, but it was clear that the area could not practicably attain by the Serious area

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[189] In Vigil v. Leavitt, 366 F.3d 1025, amended at 381 F.3d 826 (9th Cir. 2004), the court indicated that an area that had previously failed to meet a requirement of the CAA could still be eligible to receive an attainment date extension: "Nowhere does the provision limit extensions to those states that never made a misstep in their efforts to comply with the Act."

attainment date, then the area should be able to receive an extension. Other commenters suggested that an area should not be deprived an extension if the approval of all or part of the Moderate area attainment plan is delayed due to logistical reasons or the EPA's inability to take final action in a timely manner.

The final rule does not require the area to have a fully approved Moderate area plan when the attainment date extension request is submitted at the same time as the Serious area plan. An extension is allowed if the area is complying with all Moderate area requirements and commitments pertaining to that area in the state's submitted Moderate area implementation plan, but the plan does not need to be fully approved by EPA. The EPA considers this to be a reasonable interpretation of the statute because, as noted by commenters, there may be various reasons why an area may not have a fully approved Moderate area SIP by the time an extension request may be granted.

iii. Comments and Responses.

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

b. Extension Request Submitted After Submission of an "Original" Serious Area Attainment Plan.

i. Summary of Proposal.

For a Serious area extension request that was submitted after submission of an "original" Serious area attainment plan that contained an attainment demonstration meeting the requirements of CAA section 189(b)(1)(A)(i), the EPA proposed to read CAA section 188(e) not to require the area to have a fully approved attainment plan that meets the CAA's requirements for Serious areas, but to have a fully approved Moderate area attainment plan. The EPA stated

that this proposed interpretation of this criterion would apply whether the area was reclassified to Serious under the EPA's discretionary authority (CAA section 188(b)(1)) or by operation of law upon failing to attain by the Moderate area attainment date (CAA section 188(b)(2)).

The proposal also requested comment on an "alternative interpretation" that, as pointed out by some commenters, appears to also have mistakenly required the same thing as the first option: that the state would need to have a fully approved Moderate area attainment plan in order to receive an extension.

The EPA notes that Section VI.C of this preamble, Timing of Extension Request Submission, also discusses this issue. It requested comment on whether, for areas that had already submitted Serious area attainment plans, it would be appropriate that the state must have complied with all requirements and commitments in the area's initial Serious area plan (the EPA's preferred option), or in the Moderate area plan.

ii. Final Rule.

After considering the comments received on this issue, the EPA is finalizing an approach that requires that, where a Serious area attainment date extension is being submitted *after* the initial Serious area attainment plan has been submitted, the state would need to demonstrate that it was complying with all Serious area requirements and commitments pertaining to the area in the plan it had initially submitted. However, it would not need a fully approved Serious area attainment plan. The EPA believes the state should not be prevented from obtaining an attainment date extension in the event the EPA is unable to take final action on a submitted plan in a timely manner. The original proposal did not specify Serious area provisions implementing this approach, but commenters noted the proposed analogous provisions for Moderate areas seeking 1-year extensions, and suggested that EPA should adopt a similar approach for Serious

areas. Under this approach, the state would not need a fully approved Serious area plan; it would be able to receive an extension if it had already submitted the Serious area plan but had not received EPA approval yet, and if it was complying with all Serious area requirements and commitments pertaining to the area in the state's implementation plan. The EPA also considered an alternative option wherein the state would be able to receive an extension only if it had a fully approved Serious area attainment plan. The commenters did not favor this option, nor does the EPA.

iii. Comments and Responses.

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

3. Demonstration That the Plan Includes the MSM That are Included in the Implementation Plan of Any State, or are Achieved in Practice in Any State

To qualify for any extension of a Serious area attainment date, CAA section 188(e) requires a state to "demonstrate to the satisfaction of the Administrator that the plan for the area includes the most stringent measures that are included in the implementation plan of any state, or are achieved in practice in any state, and can feasibly be implemented in the area." In its prior guidance in the Addendum, the EPA interpreted the term ''most stringent measures'' (MSM) to mean the maximum degree of emission reduction that has been required or achieved from a source or source category in any other attainment plans or in practice in any other states and that can feasibly be implemented in the area seeking the extension, such as what LAER represents for new or modified sources under the NNSR permit program.[190]

[190] Addendum to the General Preamble, 59 FR 41998 (August 16, 1994), at page 42010.

a. Summary of Proposal. The proposal suggested that a state would need to follow a process for determining MSM for a Serious nonattainment area that is generally similar to proposed Option 2 for BACM/BACT described in Section VI.D of this preamble, which would include exemptions from MSM for sources in *de minimis* source categories if such measures did not collectively advance the attainment date for the area by at least 1 year. The EPA also proposed an alternative approach for determining MSM for a Serious nonattainment area that would provide for *de minimis* source category exemptions for MSM only for those source categories that do not contribute significantly to ambient $PM_{2.5}$ concentrations in the Serious nonattainment area, an approach more closely aligned with proposed Option 1 for determining BACM/BACT.

For each approach, the proposal described a five step process for determining MSM: 1) update the emissions inventories for the nonattainment area; 2) identify *de minimis* source categories through modeling; 3) identify potential MSM; 4) compare MSM to control measures already adopted in the SIP for the nonattainment area; and 5) adopt and implement any MSM that are more stringent than any measures that are already approved into the SIP. The proposal requested comment on whether the two proposed approaches are sufficiently consistent with the agency's respective proposed approaches to BACM/BACT determinations.

b. Final Rule. Almost all comments received on this section involved the issue of whether the rule should allow for *de minimis* source categories to be exempted in the process of determining MSM. A few commenters supported the identification of *de minimis* source categories and their exemption from the MSM requirement. These commenters were split in terms of their preference for the two *de minimis* approaches that were presented. Some commenters suggested that under any approach, an area could still exclude a measure from MSM

based on the inability to feasibly implement the measure in the area. Some commenters stated that it would be too burdensome to require a state to evaluate whether a particular source category had a "significant" or *de minimis* impact on air quality, while others supported the approach. One group of commenters disagreed with the notion that a Serious area could exempt *de minimis* sources from the MSM requirement in the first place. They stated that *de minimis* exemptions would not be appropriate for MSM, for which the CAA has expansive language requiring the most stringent measures required in any SIP or achieved in practice in any state.

After considering the comments received on the *de minimis* source category issue, the EPA is adopting a final rule that does not include an explicit *de minimis* source category exemption in determining MSM. The agency's reasons for not allowing a *de minimis* source category or *de minimis* impact concept, articulated in prior sections on determining RACM/RACT (Section IV.D) and BACM/BACT (Section VI.D), apply equally here. Moreover, the EPA believes it would be particularly inappropriate to allow for a *de minimis* source category approach for MSM. The statute requires MSM to be implemented because the area is unable to attain the standard within 10 years of designation and has a more severe air quality problem. Congress clearly intended for such areas to more widely explore potential control measure possibilities, and a *de minimis* source category exclusion would be contrary to that intent.

The EPA believes the rule provides sufficient flexibility in the MSM area control measure analysis and attainment demonstration process enabling states to identify sources that should not be subject to control measures, including the ability to develop precursor demonstrations to exclude precursors from control requirements, and to consider case-specific factors in determining technological and economic feasibility of potential control measures. If the final rule were to include an explicit step to conduct a *de minimis* source category analysis on

the entire inventory early in MSM process, the EPA also believes that there is a risk that such an analysis may bring about investment of scarce time and analytical resources on analysis of categories to exclude rather than on the identification of the most stringent control measures necessary to attain the standard. As noted in Section IV.D of this preamble on Moderate areas, and again in [serious area section] the EPA also finds that from a technical perspective, it would be very challenging to implement a *de minimis* source category process in a consistent manner nationally without clear guidelines describing how narrowly or how broadly a *de minimis* exemption could apply to a "source category," or how the technical analysis would need to be performed. For all of these reasons, a *de minimis* source category concept is not included in the final rule for MSM.

Process for determining MSM. The following sections describe the process for determining MSM that is finalized in this rule: a) update emissions inventories; b) identify potential MSM; c) compare MSM to control measures already adopted in the SIP for the nonattainment area; and d) adopt and implement any MSM that are more stringent than any measures that are already approved into the SIP. (*See* 40 CFR 51.1010(b)(1)-(4).)

i. *Update Emissions Inventories.*

The first step would be for the state to update as needed the emissions inventory of direct $PM_{2.5}$ and $PM_{2.5}$ precursor sources and source categories in the Serious nonattainment area required under CAA section 172(c)(3) for any attainment plan submission. The EPA expects that the state would meet this inventory requirement as part of its Serious area attainment plan submission without any additional work if the state submits the Serious area attainment date extension request simultaneously with the plan itself. However, in the event the attainment date extension request is submitted after the "original" Serious area attainment plan for the area (*i.e.*,

toward the end of the Serious area attainment period), then the state must submit a more recent, complete and accurate emissions inventory that meets the same emissions inventory requirements for Moderate and Serious $PM_{2.5}$ nonattainment areas pursuant to CAA section 172(c)(3), as well as an attainment projected inventory as part of the new Serious area attainment plan for the area. The inventories submitted to support a Serious area attainment plan must also include point sources meeting the lower major stationary source threshold in 40 CFR part 51, subpart A.

ii. Identify Potential MSM.

The second step in determining MSM involves identifying the potentially MSM in other state implementation plans for $PM_{2.5}$ or other NAAQS, or that are used in practice in other states for controlling emissions from sources similar to those listed in the emissions inventory. This information can be obtained from a number of sources, including state regulations on the books, state summaries of control measures, state permitting databases, the RACT/BACT/LAER Clearinghouse, and control measure compilations developed by regional or state/local organizations. Elsewhere in this preamble, the EPA recommends that a state identify potential measures for consideration as RACM/RACT or BACM/BACT by evaluating control measures implemented by other states to meet $PM_{2.5}$ NAAQS or other NAAQS. Thus, a state seeking to identify MSM should be able to start its process using the work already undertaken for the nonattainment area's RACM and BACM determinations and to make updates to the list of potential control measures accordingly.

For each measure, the state is required to determine its technological and economic feasibility for sources in the area. States should apply more stringent criteria for determining the feasibility of potential MSM than that described for BACM and BACT in Section VI.D of this

preamble. In some situations, MSM could involve increasing the coverage of measures that were already adopted and implemented as BACM and BACT (for example, changing out an even greater percentage of woodstoves in an area, if such sources were major contributors to the air quality problem in the nonattainment area).

However, because BACM and BACT represent the "best" level of control feasible for an area, in some cases it may be possible for the MSM requirement to result in no more controls and no more emissions reductions in an area than result from the implementation of BACM and BACT. Stated another way, there may be sources or categories for which no other feasible controls exist beyond what a state has already adopted as BACM or BACT. Given the strategy in the nonattainment provisions of the CAA to offset longer attainment timeframes with more stringent control requirements, the EPA therefore interprets the MSM provision so as to increase the potential that it will result in additional controls beyond the set of measures adopted as BACM and BACT. In the MSM analysis, in addition to identifying additional candidate MSM, the state is required to reanalyze any measures that were rejected during the state's BACM and BACT analysis for the area to see if they are now feasible for the area given the potentially longer attainment date (up to 5 years after the statutory Serious area attainment date), or given the changes that have occurred in the interim that improve the feasibility of previously rejected measures.

iii. Compare MSM to Control Measures Already Adopted in the SIP for the Nonattainment Area.

The third step requires the state to compare the potential MSM that have been identified for each source type or source category against the measures, if any, already adopted into the Serious area SIP for that source category to determine if such MSM would provide any

additional reductions. This comparison will be used in determining what measures to adopt in the next step.

iv. Adopt and Implement Any MSM That are More Stringent Than Any Measures That are Already Approved Into the SIP.

The fourth step requires the adoption of any MSM that are more stringent than existing measures as a regulation, and requires submission of the regulation as part of the SIP, as well as expeditious implementation of the regulation. For any measures that the state determines cannot be feasibly implemented in the area, it should provide a reasoned justification for rejecting the potential MSM.

The EPA notes that CAA section 188(e) does not identify a deadline for a state to implement MSM, whereas elsewhere the statute establishes a deadline for implementing RACM and RACT and BACM and BACT [*see* CAA sections 189(a)(1)(C) and 189(b)(1)(A)], respectively). However, because the clear intent of CAA section 188(e) is to minimize the length of a Serious area attainment date extension, the EPA requires that the implementation of MSM must be as expeditious as practicable but no later than 1 year prior to the alternate Serious area attainment date identified by the state in its extension request.

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

4. Demonstration of Attainment by the Most Expeditious Alternative Date Practicable

Section 189(b)(1)(A) of the CAA requires that a Serious area plan demonstrate attainment, using air quality modeling, by the most expeditious date practicable after the statutory Serious area attainment date. This demonstration is the final criterion that must be met before the EPA may consider granting an extension. The agency's determination of whether the

plan provides for attainment by the most expeditious date practicable would depend on whether the plan provides for implementation of BACM and BACT by the statutory implementation deadline and MSM as expeditiously as practicable. In no case would a state be able to seek an extension of a Serious area attainment date to a date more than 5 years past the statutory attainment date for Serious areas. Section VI.E of this preamble describes the EPA's proposed requirements for attainment demonstration modeling for Serious area attainment plans.

5. Apply for an Attainment Date Extension

The state would have to apply to the EPA for any extension of a Serious area attainment date. The request would have to accompany an attainment plan submission containing an attainment demonstration showing attainment by the most expeditious alternative date practicable, and the state would need to submit modeling as part of the attainment demonstration in accordance with Section VI.E of this preamble. Furthermore, the state would have to provide the public reasonable notice and a public hearing on the attainment date extension request before submitting it to the EPA, as the EPA would consider it an integral part of the attainment demonstration and part of the revised SIP submission which is subject to the requirements of the CAA and federal regulations for public notice and hearing on SIP revisions.

6. Timing of Extension Request Submission

The EPA has identified two potential Serious area attainment date extension scenarios: (1) the more straightforward scenario where the attainment date extension is included with the initial Serious area plan, and (2) the scenario where a state may prepare and fully implement a timely Serious area plan that includes a modeling analysis that demonstrates the area would attain no later than the statutory Serious area attainment date (the end of the tenth calendar year following designation), and yet the state may see as the attainment date nears that the Serious

area will in fact fail to attain by its projected attainment date. While the statute provides a remedy to be instituted immediately upon failure of a Serious area to attain the standard (through contingency measures and other measures stipulated in CAA section 189(d)), the EPA also believes that the criteria of CAA section 188(e) could be applied after a state submits a Serious area attainment plan but prior to the area failing to attain (as long as the area had not already been granted a prior Serious area attainment date extension under CAA section 188(e)).

In the first scenario, there is no need to specify any further timing requirements beyond those previously described for Serious area plan submission. However, for the second scenario the final rule needs to specify a due date for the request. The EPA believes that it would be acceptable for a state to submit a Serious area attainment date extension request (as described earlier) together with a new Serious area attainment plan meeting all of the statutory requirements that apply to such plans. The state should submit the extension request and new implementation plan to EPA as early as possible, but the final rule requires that it must be submitted no later than 60 days prior to the approved attainment date for the area or, in the absence of an approved attainment date, no later than 60 days prior to the applicable statutory attainment date for Serious areas (i.e., the end of the tenth year after designation). *See* 40 CFR 51.1005(b)(6). The EPA believes that this deadline is necessary due to its statutory obligation to determine whether the area attained by the attainment date. In order to preserve the possibility that EPA could review and take action on the new attainment plan for the area and the accompanying attainment date extension request prior to its deadline for making the attainment determination the EPA estimates that the 60-day deadline provides the minimum amount of necessary time. The EPA notes that during this time, it would have to ascertain the status of compliance with all requirements and commitments in the Moderate and initial Serious area

attainment plans for the area, evaluate the state's justification for the selection of the alternate attainment date (including modeling), and review provisions for the implementation of MSM).

VII. Requirements under CAA Section 189(d) for $PM_{2.5}$ Serious Areas that Fail to Attain the NAAQS by the Applicable Attainment Date

Background. In the event that a Serious area fails to attain the $PM_{2.5}$ NAAQS by the applicable attainment date, CAA section 189(d) requires that "the state in which such area is located shall, after notice and opportunity for public comment, submit within 12 months after the applicable attainment date, plan revisions which provide for attainment of the …standard and, from the date of such submission until attainment, for an annual reduction in PM_{10} or PM_{10} precursor emissions within the area of not less than 5 percent of the amount of such emissions as reported in the most recent inventory prepared for such area."

In addition to the requirement for the submission of control measures providing for a 5 percent reduction in emissions of certain pollutants on an annual basis, the EPA interprets CAA section 189(d) as requiring the State to submit an attainment plan that includes the same basic statutory plan elements that are required for other attainment plans. Because section 189(d) does not include a specific provision specifying a new attainment date, the EPA relies on sections 179(d)(3) and 172(a)(2) of the CAA to establish the attainment date for such plans to be as expeditiously as practicable, and no later than five years from the effective date of the EPA's determination that the area failed to attain. Pursuant to those provisions, the Administrator may also extend the attainment date to the extent the Administrator deems appropriate, for a period no greater than 10 years from the effective date of the EPA's determination that the area failed to attain, considering the severity of nonattainment and the availability and feasibility of pollution

control measures. The state must submit as part of the new attainment plan a justification explaining that it represents an attainment date that is as expeditious as practicable.

A state must submit to the EPA its plan to meet the requirements of CAA section 189(d) in the form of a complete attainment plan submission that includes the following elements: (i) Base year and attainment projection year emissions inventory requirements; (ii) additional attainment plan control strategy requirements, including control measures and a demonstration that each year the area will achieve at least a 5 percent reduction in emissions of direct $PM_{2.5}$ or a 5 percent reduction in emissions of a $PM_{2.5}$ plan precursor based on the most recent emissions inventory for the area; (iii) attainment demonstration and modeling; (iv) RFP plan and quantitative milestones; and (v) contingency measures. A state with a Serious $PM_{2.5}$ nonattainment area that fails to attain the NAAQS by the applicable Serious area attainment date must also address any statutory requirements relevant to Moderate nonattainment areas and Serious nonattainment areas under CAA sections 172 and 189 of the CAA that have not already been satisfied. These elements are discussed in more detail in the following sections.

A. Plan Due Dates

1. Summary of Proposal

The proposed rule indicated that under CAA section 189(d), the state would be required to submit the attainment plan for a Serious area that failed to attain the NAAQS by the Serious area attainment date within 12 months after the applicable attainment date.

2. Final Rule

The final rule remains unchanged from the proposal. Section 189(d) of the CAA requires a state with a Serious PM_{10} nonattainment area that failed to attain the NAAQS by the applicable Serious area attainment date to submit a new attainment plan submission for the area within 12

months after the missed "applicable attainment date." The EPA finds that the most straightforward interpretation of the statutory language is that the state must submit a new attainment plan for the area – with all required elements – within 12 months after the missed applicable attainment date. Although the EPA may take up to 6 months to make a determination that the area failed to attain, the text of the statute ties the 12-month SIP due date to the missed attainment date, not to the date that the EPA determines that the area failed to attain. Because all attainment dates for implementation of the $PM_{2.5}$ NAAQS under subpart 4 are expressed in terms of the end of a calendar year, the new due date for a SIP required under CAA section 189(d) also would be due on December 31 – of the year following the area's Serious area attainment date. This requirement is consistent with the manner in which the CAA section 189(d) SIP submission date has been interpreted for implementation of the PM_{10} NAAQS in the past. The EPA recognizes that this statutory timeline is shorter than for Moderate or Serious area attainment plans, but expects that, given the prior planning history for such areas, much of the analyses to support these new attainment plan submissions will be based on updates to previous analyses, which would require less time than generating new analyses. In any event, it is clear from the face of the statute that Congress intended that states with areas that fail to attain the NAAQS by the outermost statutory attainment date for Serious areas must proceed more quickly to revise their SIPs to provide for attainment of the NAAQS.

3. Comments and Responses

Any comments received on this section are addressed in the Response to Comments document found in the docket for this action.

B. Emissions Inventory Requirements

1. Summary of Proposal

The EPA also proposed that the inventory requirements under section 189(d) for Serious areas that fail to attain by the attainment date should be the same as those for Moderate and Serious areas, but with a change to the appropriate year for the inventory. The EPA proposed that for these areas, the inventory year must be one of the 3 years from which monitored data was used to determine that the area failed to attain the $PM_{2.5}$ NAAQS by the applicable Serious area attainment date. In addition, the EPA proposed an alternative approach that would allow the state to use an earlier year than one of the 3 years used to determine that the area failed to attain. As proposed, this alternative approach would require written justification that included an explanation of how the inventory modifications adequately incorporate emissions reductions projected to be achieved through the implementation of BACM and BACT, and additional feasible control measures submitted with the original Serious area attainment plan for the area, and through implementation of MSM if appropriate.

2. Final Rule

The statute requires states to use an emissions inventory that meets the requirements of section 172(c)(3). The final rule recommends using an inventory for one of the 3 years for which air quality data were used to determine that the area failed to attain in order to meet this requirement. However it also allows the state to use an earlier inventory year under certain circumstances.

As with all other attainment plan submissions required for Moderate and Serious $PM_{2.5}$ nonattainment areas, a state must develop its submission to meet CAA section 189(d) based on "the most recent inventory prepared for such [nonattainment] area." This inventory must meet

the same requirements that would apply to any other emissions inventory submitted for a $PM_{2.5}$ nonattainment area to meet the requirements of CAA section 172(c)(3), which requires "a comprehensive, accurate, current inventory of actual emissions of the relevant pollutants" in the nonattainment area. Therefore this rule requires that the inventory submitted with an attainment plan to meet CAA section 189(d) requirements must also meet the EPA's regulatory requirements for such emissions inventories as described earlier in this preamble under Section IV.B of this preamble (for Moderate area attainment plans) and Section VI.B of this preamble (for Serious area attainment plans).

One important aspect of the emissions inventory required to be submitted with an attainment plan under CAA section 189(d) is its role as the basis for calculating the emissions reductions of direct $PM_{2.5}$ or any $PM_{2.5}$ plan precursor necessary to satisfy the 5 percent annual reduction criterion of CAA section 189(d). For this reason, the "most recent inventory" for the area must not only meet the criteria described for a base year inventory submitted pursuant to CAA section 172(c)(3) and in Section VI.B of this preamble, but it also must fully account for emissions reductions achieved to date through the implementation of all RACM and RACT, BACM and BACT, additional reasonable and feasible measures, and MSM (as applicable) submitted with the Moderate and original Serious area attainment plans for the area. In this way, the state will calculate the additional reductions that the nonattainment area will need beyond those already required in order to fulfill the requirements of CAA section 189(d) and bring the area into attainment as expeditiously as practicable.

To ensure that the inventory is representative of the nonattainment problem in the area current at the time of the CAA section 189(d) submission, the EPA strongly recommends that the inventory year be one of the 3 years from which monitored air quality data were used to

determine that the area failed to attain the $PM_{2.5}$ NAAQS by the applicable Serious area attainment date. The EPA believes that associating the inventory with one of these 3 years is reasonable in light of the fact that some control measures (e.g., BACM and BACT controls and additional feasible measures) for sources in the area may not be implemented until the beginning of the attainment year. Thus, using an emissions inventory for one of those 3 years will help ensure that the inventory adequately captures the emissions reductions already achieved through the prior implementation of control measures for Moderate and Serious areas.

The EPA recognizes that the timing and resource requirements for inventory preparation may make it challenging in some cases for a state to use an inventory for a year that is one of the 3 years from which monitored data were used to determine that the area failed to attain the NAAQS by the applicable attainment date. To address such cases, the final rule allows states to use an earlier inventory year in the plan, provided that (1) the year is selected in consultation with the appropriate EPA Regional Office, and (2) the state provides a written justification for selecting the earlier year in its SIP submission. *See* 51.1008(c)(1). At a minimum, the inventory must adequately incorporate emissions reductions projected to be achieved through the implementation of BACM and BACT, and additional feasible control measures submitted with the original Serious area attainment plan for the area, and MSM if appropriate. Because these emissions reductions may have occurred after the inventory year the state intends to use, adjustments to the original inventory for that year would need to be made to reflect those reductions. The written justification must also include an explanation of how those reductions have been incorporated into the inventory. In considering use of an "older" inventory, the EPA recommends that states weigh the possible impact of using an older inventory that could have higher emissions than a more current inventory. The state may be obligated to achieve a larger

annual emissions reduction to satisfy the 5 percent annual reduction criteria of CAA section 189(d) than would otherwise be required if a newer inventory were used with lower emissions.

3. Comments and Responses

Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

C. Pollutants to be Addressed in the Plan

1. Summary of Proposal

The proposed rule indicated that to determine what pollutants need to be addressed in the attainment plan and 5 percent requirement in CAA section 189(d), the state could provide a demonstration to the EPA showing that a particular precursor does not significantly contribute to $PM_{2.5}$ levels that exceed the standard. The proposal suggested that if the precursor demonstration is approved by the EPA, then the state would not be required to evaluate or adopt control measures for that precursor, nor would the state need to address the precursor in meeting the 5 percent annual emissions reduction requirement in section 189(d). The proposal indicated that Section III of the preamble further discussed options describing optional precursor demonstrations.

2. Final Rule

The final rule remains relatively unchanged with respect to this issue. Section 189(d) of the CAA requires states to develop a new attainment plan for an area that failed to attain by the applicable Serious area attainment date that provides for "an annual reduction in PM_{10} or PM_{10} precursor emissions within the area of not less than 5 percent of the amount of such emissions" reported in the latest emissions inventory for the area. In Section III of this preamble, the EPA describes optional approaches by which a state could demonstrate that a $PM_{2.5}$ precursor does not

contribute significantly to $PM_{2.5}$ levels that exceed the standard in the area, and thereby would not need to adopt control measures for that precursor in the area. The EPA also interprets the CAA generally to allow a state to provide such a "precursor demonstration" for the attainment plan required under section 189(d), even if the area has previously failed to attain the relevant NAAQS by the applicable Serious area attainment date. If the state has provided a demonstration with the previous Serious area attainment plan to establish that a precursor does not significantly contribute to $PM_{2.5}$ levels for purposes of the attainment plan for the area, and it seeks to maintain the status of that precursor as not significantly contributing to $PM_{2.5}$ levels in the area, the state would still need to provide an updated precursor demonstration for the new section 189(d) SIP because emissions and atmospheric conditions will have changed since the previous demonstration was submitted, and the conclusions from any previous precursor demonstration may no longer be appropriate. *See* Section III of this preamble for more information about potential precursor demonstrations that could be conducted to show that a particular precursor does not contribute significantly to $PM_{2.5}$ levels that exceed the standard.

3. Comments and Responses

Any comments received on this section are addressed in the Response to Comments document found in the docket for this action.

D. Attainment Plan Control Strategy

1. Background

As for other $PM_{2.5}$ NAAQS attainment demonstrations, the overarching requirement for the CAA section 189(d) control strategy is that it needs to provide for attainment of the standard as expeditiously as practicable. The strategy must include any additional measures (beyond those already adopted in previous SIPs for the area as RACM/RACT, BACM/BACT, MSM (if

applicable), for example) that are needed for the area to attain expeditiously. The plan must also demonstrate that the new attainment plan will at a minimum achieve an annual 5 percent reduction in emissions of direct $PM_{2.5}$ or any $PM_{2.5}$ plan precursor from sources in the area, based on the most recent emissions inventory for the area. However, it is important to emphasize that a CAA section 189(d) plan must require other control measures (even if beyond those sufficient to meet the annual 5 percent reduction requirement) that are needed in order to meet the overarching goal of attaining the standard as expeditiously as practicable.

2. 5 Percent Annual Reduction in Direct $PM_{2.5}$ or Any $PM_{2.5}$ Plan Precursor.

a. Summary of Proposal. Section 189(d) of the CAA requires an "annual reduction in PM_{10} or PM_{10} precursor emissions within the area of not less than 5 percent of the amount of such emissions as reported in the most recent inventory prepared for such area." Because the statute is ambiguous with regard to how this language should apply for the $PM_{2.5}$ NAAQS, the EPA proposed two options for interpreting this provision. One option interpreted this language to require a 5 percent annual reduction in all pollutants that contribute to $PM_{2.5}$, meaning direct $PM_{2.5}$ *and* the four precursors (SO_2, NO_x, VOC, and ammonia), or those precursors that are necessary to control in the area. A second option interpreted the language more literally, meaning that it required a 5 percent annual reduction of *either* direct $PM_{2.5}$ or $PM_{2.5}$ precursor emissions on an annual basis, and that a state could elect to control either direct $PM_{2.5}$ or $PM_{2.5}$ precursor emissions in a given year. (Note that under either proposed option, a precursor still could be excluded from control requirements if the state submitted a new precursor demonstration as part of the revised CAA section 189(d) implementation plan showing that the precursor does not contribute significantly to levels that exceed the relevant $PM_{2.5}$ NAAQS, and such demonstration is approved by the EPA).

b. Final Rule. One group of commenters supported the inclusion of direct $PM_{2.5}$ and all precursors in the calculation of the annual emission reduction requirement because precursors typically play a significant role in $PM_{2.5}$ formation, and they believed that allowing states to be able to pick and choose which pollutants to reduce would undermine efforts to attain most expeditiously. Other commenters supported the second option because they believe it follows a plain reading of the statute (i.e., it uses the word "or"), and because it would allow a state to devote resources toward achieving emissions reductions in those pollutants that are most effective in reducing $PM_{2.5}$ concentrations and thus in attaining the NAAQS most expeditiously.

After considering comments on this issue, the EPA agrees that the second option is the more appropriate reading of the statute. When paired with the overarching requirement for the area to reach attainment of the NAAQS as expeditiously as practicable, and with provisions in the rule allowing a state to demonstrate that a precursor does not provide a significant contribution to $PM_{2.5}$ levels, the EPA believes that such an interpretation is reasonable and would authorize states to focus emission reduction efforts on those pollutants that will be most effective for purposes of attainment in a given area. For example, interpreting the statutory provision to require emissions reductions in a specific precursor merely for purposes of meeting a 5 percent requirement, without regard to whether the reductions would be effective for purposes of attainment, could be counterproductive to reducing the emissions of other pollutants that could result in earlier attainment. This interpretation of CAA section 189(d) is also consistent with past EPA actions for an area that failed to attain the PM10 Serious area attainment date.[191]

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[191] For example, *see* 69 FR 30006 (May 26, 2004). Approval and Promulgation of Implementation Plans for California- San Joaquin Valley PM-10 Nonattainment Area; Serious Area Plan for Attainment of the 24-Hour and Annual PM-10 Standards.

Thus, in applying the statutory language to implementation of the $PM_{2.5}$ NAAQS in the final rule, the EPA interprets an "annual reduction in PM_{10} or PM_{10} precursor emissions within the area of not less than 5 percent of the amount of such emissions" to mean that an attainment demonstration for a Serious area that failed to attain by the attainment date must include control measures providing for a 5 percent annual reduction in direct $PM_{2.5}$ emissions *or* in the emissions of any $PM_{2.5}$ plan precursor. The EPA considered whether the statutory phrase "precursor emissions" requires a 5 percent reduction of each individual plan precursor in each year, but determined that such an interpretation was unnecessarily restrictive in light of the overarching requirement for states to adopt the control measures that will result in attainment as expeditiously as practicable, and is not compelled by the wording of the 5 percent requirement in the statute. Accordingly, the final rule requires an annual reduction of either direct $PM_{2.5}$ or any single $PM_{2.5}$ precursor.

Because this requirement is an annual one, the final rule also authorizes the state to meet the 5 percent requirement to vary between direct $PM_{2.5}$ and $PM_{2.5}$ precursors, or among precursors, from year to year throughout the duration of the section 189(d) attainment plan, so long as the attainment plan provides for expeditious attainment and meets the other applicable attainment plan requirements. For example, in year 1 a state could provide for a 5 percent reduction of direct $PM_{2.5}$, and in year 2 could provide for a 5 percent reduction in a precursor, and so on.

c. Comments and Responses. Comment: Some commenters suggested that a more appropriate approach would be to require a 5 percent annual reduction in $PM_{2.5}$ ambient concentrations (rather than in pollutant emissions), and allow the state to meet this air quality target with any combination of emissions reductions.

Response: The EPA does not find that this approach would be consistent with the statutory language in CAA section 189(d), which clearly expresses the requirement in terms of emissions reductions (i.e., "annual reduction in PM_{10} or PM_{10} precursor emissions within the area of not less than 5 percent of the amount of such emissions as reported in the most recent inventory prepared for such area.") Moreover, the EPA is concerned that this approach would necessitate, on an annual basis, a complex modeling analysis or at the very least some other analytical approach to translate emissions to ambient concentrations. The burdens of such analysis could be significant, and it is unclear what benefit would be realized from such an approach. States are already obligated to provide a modeled attainment demonstration as part of the new SIP submission to meet the requirements of section 189(d), and the 5 percent requirement is a separate requirement that the statute explicitly imposes in addition to that modeled attainment demonstration. For these reasons, the EPA is not adopting the commenter's suggested air quality approach in the final rule.

3. Calculating the 5 Percent Annual Reductions

a. Summary of Proposal. The proposed rule provided an example of how annual reductions would be tracked under this provision, and it also provided another example describing how reductions in excess of the 5 percent requirement in 1 year could be "carried forward" to help meet the requirement in a future year.

b. Final Rule. The previous section 2 explains that the EPA interprets the statute to require a 5 percent annual reduction in direct $PM_{2.5}$ emissions *or* in the emissions of any one $PM_{2.5}$ plan precursor in each year, until attainment. The requisite minimum 5 percent emissions reduction level for any pollutant must be calculated from the total emissions of the pollutant contained in the most recent inventory for the area, as described earlier in this section. The

requirement for a 5 percent annual reduction in any one pollutant, calculated based on the emissions levels in the most recent inventory, must then be achieved every year between the CAA section 189(d) plan submission date and the new projected attainment date for the area.

For example, assume it is 2026, and based on monitoring data from years 2023-2025, a Serious area has failed to attain the 2012 $PM_{2.5}$ NAAQS within 10 years of designation. Assume also that the most recent inventory available for an area subject to CAA section 189(d) is for the year 2023. This inventory would serve as the base inventory for determining the 5 percent emissions reduction requirement under CAA section 189(d). If the state elects to reduce direct $PM_{2.5}$ emissions each year of the plan (*i.e.*, instead of choosing to reduce a precursor), and the most recent inventory ("base inventory") indicates that emissions of direct $PM_{2.5}$ from all sources in the area are 10,000 tons/year, then the area at a minimum would need to reduce emissions of direct $PM_{2.5}$ by 5 percent of the 2023 base inventory, or 500 tons, each year until the area attains the NAAQS. Thus, in the first year following submission of the CAA section 189(d) plan for the area, emissions of direct $PM_{2.5}$ could not exceed 9500 tons/year; in the second year, emissions could not exceed 9000 tons/year; and so forth. Note that if the area needs emissions reductions beyond this amount (i.e., in direct $PM_{2.5}$ or in $PM_{2.5}$ plan precursors) in order to meet the overarching requirement of attaining the standard as expeditiously as practicable, then it must adopt and implement such control measures.[192]

Although CAA section 189(d) requires that a state develop measures that will obtain annual emissions reductions of "not less than 5 percent" from the most recent inventory, the EPA interprets this language to authorize states to maximize emissions reductions in earlier years and

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[192] *See* Section IV.D.3 of this preamble for a discussion on sources of information for control measures.

still meet the 5 percent per year requirement for subsequent years. The EPA notes that interpreting the statute in this way will encourage states to implement measures earlier, where possible, rather than delay implementation of measures merely to assure that the 5 percent requirement can be met in later years. Thus, using the example described earlier, the annual reduction requirement for the area would be 500 tons/year from a base year emissions level of 10,000 tons/year. The required level after year 1 would be 9500 tons/year, after year 2 the level would be 9000 tons/year, and so on. If the area reached a level of 8100 tons/year by the end of year 3, then by the end of year 4 it would only need to reduce emissions by 100 tons/year to yield an emissions level of 8000 tons/year. Thus, this approach will allow states to carry forward any emissions reductions beyond the required minimum 5 percent in a given year to the next year as a means to encourage states to achieve emissions reductions as quickly as possible, as long as those emissions reductions are realized after the Serious area attainment date.[193]

The previous example addresses a situation where the state chooses to reduce only direct $PM_{2.5}$. In that example, the 5 percent annual reduction amount for any year would be 5 percent of the 2023 $PM_{2.5}$ emission inventory amount of 10,000 tons. The final rule allows the state to meet its 5 percent reduction each year in terms of reducing direct $PM_{2.5}$ or any $PM_{2.5}$ plan precursor. Thus, if the area had a 2023 emission inventory that included 5000 tons of each of the four $PM_{2.5}$ precursors, and if the state chose to meet its "5% reduction" obligation in a particular year by reducing SO_2, it would need to achieve emissions reductions of 250 tons of SO_2 in that year.

The EPA is also clarifying its interpretation of the statutory language under CAA section 189(d) that requires a state to submit a new attainment plan to achieve annual reductions "from

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[193] 69 FR 30006 (May 26, 2004).

the date of such submission until attainment," to mean annual reductions beginning from the due date of such submission until the new projected attainment date for the area based on the new or additional control measures identified to achieve at least 5 percent emissions reductions annually. This clarification is intended to make clear that even if a state is late in submitting its CAA section 189(d) plan, the area must still achieve its annual 5 percent emissions reductions beginning from the date by which the state is required to make its CAA section 189(d) plan submission, not by some later date. Because attainment dates for $PM_{2.5}$ nonattainment areas established under subpart 4 occur at the end of the calendar year, any CAA section 189(d) plan, which is required within 12 months of the missed attainment date for the area, would also be due by the end of the calendar year.

c. Comments and Responses. Any additional comments received on this section are addressed in the Response to Comments document found in the docket for this action.

4. Additional Guidance on CAA Section 189(d) Control Measures

The EPA believes that an appropriate starting point for a state to identify measures to provide for attainment and to meet the requisite minimum 5 percent annual emissions reductions of direct $PM_{2.5}$ and $PM_{2.5}$ precursors is the list of potential control measures initially required to be identified as part of the RACM and RACT determination process, the BACM and BACT determination process, or the MSM determination process (if appropriate) for the area. The EPA anticipates that a state should be able to rely on much of the work it previously undertook to develop this list of potential control measures and analyze their technological and economic feasibility, and the time required to implement them. Control measures that the state identified but did not previously adopt may be likely measures for inclusion in an attainment plan to meet the requirements of section 189(d). However, for purposes of meeting the requirements of CAA

section 189(d), the EPA recommends that the state first identify any additional potential measures not previously identified for the area, and then analyze any new or additional measures that the state has not already adopted in a previous attainment plan for the area.

In addition, a state may include in the CAA section 189(d) plan control strategy for the area any control measures triggered as contingency measures after the area failed to attain the $PM_{2.5}$ NAAQS by the applicable attainment date. In order to be included as control measures that will help the area meet its requisite minimum 5 percent reductions in direct $PM_{2.5}$ emissions or in emissions of any one $PM_{2.5}$ plan precursor, such measures would have to meet the same requirements as all other approvable control measures for being quantifiable, enforceable, replicable and accountable. The EPA believes that reliance on triggered contingency measures may be appropriate given the short timeline provided for in the statute for states to revise and submit their SIP revisions (12 months from the missed attainment date) and the fact that the contingency measures included in the prior attainment plan for the area under CAA section 172(c)(9) must be activated once the EPA publishes its finding of the area's failure to attain the NAAQS by the applicable attainment date. As explained previously, however, the EPA interprets the statute to require that any new 189(d) submission must meet all the statutory requirements applicable to all submissions, including the requirement to identify contingency measures. Thus, if contingency measures from the Serious area attainment plan are relied on in the new attainment demonstration as part of the control strategy, then the state must submit additional contingency measures for the CAA section 189(d) attainment plan. *See* 40 CFR 51.1003(c)(1)(vii).

5. Control Strategy Submission Requirements

To ensure that attainment plan submissions contain the necessary supporting information for the EPA to review and approve the state's new control strategy to achieve at least 5 percent annual reductions in emissions of direct $PM_{2.5}$ or any $PM_{2.5}$ plan precursor, the final rule requires that a state must submit information about the new control strategy for an area subject to section 189(d) in a manner consistent with the requirements described in section VI.D.3.

As with other $PM_{2.5}$ attainment plan submissions, the EPA believes that it is incumbent on the state to ensure that the information needed for the EPA to evaluate the state's analysis of new control measures – which in the case of 189(d) plans is also needed to achieve annual 5 percent reductions -- is presented separately as part of the control strategy analysis, and in a format that provides transparency, consistency and the ability for another party to evaluate the state's analysis effectively and to duplicate the state's results. For this reason, the EPA is including the CAA section 189(d) plan base year emissions inventory information as a necessary part of the control strategy submission and as one element of the state's CAA section 189(d) plan due 12 months after the missed attainment date for the area. In addition, the state must provide information as part of any attainment plan submitted to meet the requirements of CAA section 189(d) consistent with the criteria described in Section VI.D.5 of this preamble to ensure that a state adopts effective regulations to implement the control measures identified as being needed to meet those requirements. Specifically, all control measures must be quantifiable, enforceable, replicable and accountable.

E. Modeling for Attainment Demonstrations

Section 189(d) of the CAA requires a state with a Serious nonattainment area that failed to attain the relevant NAAQS by the applicable Serious area attainment date to submit a new

attainment plan for such area within 12 months after the missed attainment date. The same general requirements for attainment demonstrations and modeling that apply to Moderate area plans and Serious area plans due under CAA sections 189(a) and 189(b) should also apply to CAA section 189(d) attainment plans. However, the EPA is including additional requirements in the final rule specific to plans submitted pursuant to CAA section 189(d), as described in the following sections.

1. Attainment Demonstrations for Serious Areas That Fail to Attain the NAAQS by the Applicable Attainment Date

a. Summary of Proposal. The EPA proposed attainment demonstration modeling requirements for Serious areas that fail to attain the NAAQS by the applicable attainment date. *See* Section VI.E of this preamble, for more details on Serious area attainment demonstrations.

b. Final Rule. The final rule requirements are unchanged from the proposal with respect to this requirement. Attainment demonstrations for Serious areas subject to CAA section 189(d) requirements must consist of: (i) technical analyses such as base year and future year modeling of emissions that identify sources and quantify their emissions that are contributing to violations of the $PM_{2.5}$ NAAQS; (ii) analyses of future year projected emissions reductions and air quality improvement resulting from national, regional and local programs already implemented as part of previous Moderate and/or Serious area attainment plans for the area (including reasonable control measures, BACM and BACT and additional feasible measures), and (iii) additional measures needed for expeditious attainment, including measures needed to achieve 5 percent emissions reductions on an annual basis. Each state with a nonattainment area subject to the requirements of CAA section 189(d) must submit an attainment plan with an attainment demonstration that includes analyses supporting the state's determination of its proposed new

attainment date. In all cases, the state must show that the area will attain the NAAQS as expeditiously as practicable.

c. Comments and Responses. Any comments received on this section are addressed in the Response to Comments document found in the docket for this action.

2. Air Quality Modeling Required for Serious Areas Subject to the Requirements of CAA Section 189(d)

a. Summary of Proposal. The EPA proposed that states are required to submit air quality modeling in support of an attainment demonstration for a nonattainment area subject to the requirements of CAA section 189(d).

b. Final Rule. The final rule requirements are unchanged from the proposal with respect to this issue. States are required to submit air quality modeling in support of an attainment demonstration for a Serious nonattainment area subject to the requirements of CAA section 189(d). The modeling demonstration must show how and when the area will attain the NAAQS. Other than the timing of plan submissions and requirement to achieve 5 percent emissions reductions in direct $PM_{2.5}$ or any $PM_{2.5}$ plan precursor, the relevant air quality modeling procedures and guidance for all $PM_{2.5}$ nonattainment area plans are the same. *See* Sections IV.E. and VI.E of this preamble for more details on proposed modeling requirements and guidance for Moderate and Serious $PM_{2.5}$ nonattainment areas, respectively.

c. Comments and Responses. Any comments received on this section are addressed in the Response to Comments document found in the docket for this action.

3. Future Year(s) to be Modeled in Attainment Demonstrations

a. Summary of Proposal. The EPA proposed that a state performing a modeling analysis for a plan submitted under CAA section 189(d) must select a future modeling year such that all

emissions control measures relied on for attainment will have been implemented by the beginning of that calendar year. To demonstrate attainment, the modeling results for the nonattainment area must predict that emissions reductions implemented by the beginning of the last calendar year preceding the attainment date will result in $PM_{2.5}$ concentrations that meet the level of the standard.

b. Final Rule. As discussed more fully in Section VII.I of this preamble, the EPA must establish a new attainment date for a $PM_{2.5}$ nonattainment area subject to CAA section 189(d) and must do so according to the provisions of CAA sections 179(d)(3) and 172(a)(2), which require that the new attainment date must be as expeditious as practicable, but no later than 5 years from the date of publication in the *Federal Register* of the EPA's determination that the area failed to attain the relevant NAAQS. In addition, the EPA may extend the attainment date by up to 5 additional years (thus up to 10 years from the date of publication of the notice of finding of failure to attain by the applicable attainment date for the area) if the EPA deems it appropriate "considering the severity of nonattainment and the availability and feasibility of pollution control measures."

For purposes of determining the attainment date that is as expeditious as practicable, the state must conduct future year modeling that takes into account emissions growth, known controls (including any controls that were previously determined to be RACM and RACT, BACM and BACT, and MSM if appropriate, for the area), the 5 percent per year emissions reductions required by CAA section 189(d), plus any other emissions controls that are needed for expeditious attainment of the NAAQS. A state performing a modeling analysis for a plan submitted under CAA section 189(d) must select a future modeling year such that all emissions control measures relied on for attainment will have been implemented by the beginning of that

year. To demonstrate attainment, the modeling results for the nonattainment area must predict that emissions reductions implemented by the beginning of the last calendar year preceding the attainment date will result in $PM_{2.5}$ concentrations that meet the level of the standard.[194]

For a $PM_{2.5}$ nonattainment area subject to CAA section 189(d), the state must adopt any control measures necessary to demonstrate expeditious attainment within 5 years of the area failing to attain the NAAQS by the applicable Serious area attainment date.

c. Comments and Responses. Any comments received on this section are addressed in the Response to Comments document found in the docket for this action.

4. Attainment Year Motor Vehicle Emissions Budgets

As with all other $PM_{2.5}$ NAAQS attainment plans, the transportation conformity rule requires that attainment plans for areas subject to CAA section 189(d) establish motor vehicle emissions budgets for the area's attainment year. Therefore, for such an area, the state would first determine the new attainment date as described in Section VII.I of this preamble. Once an area's attainment date has been established, the state would establish motor vehicle emissions budgets for direct $PM_{2.5}$ and any relevant $PM_{2.5}$ precursor for the attainment year.[195] A motor vehicle emissions budget for the purposes of a $PM_{2.5}$ attainment plan is that portion of the total allowable emissions within the nonattainment area allocated to on-road sources as defined in the submitted

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[194] Note that for purposes of the $PM_{2.5}$ NAAQS, a determination of attainment (or failure to attain), which the EPA is required to make after the attainment date has passed, is based on an average of the most recent 3 years of ambient data prior to the area's attainment date.

[195] For more information on $PM_{2.5}$ precursor requirements, *see* CAA section 93.102(b)(2)(iv) and (v) of the transportation conformity rule. *See* also the May 6, 2005, final transportation conformity rule that addressed requirements for $PM_{2.5}$ precursors. (70 FR 24280).

attainment plan.[196] Such motor vehicle emissions budgets would be calculated using the latest planning assumptions and the latest approved motor vehicle emissions model available at the time that the attainment plan is developed, unless the EPA approves the state's use of an alternative model.[197]

F. RFP Requirements

1. Specific Requirements

a. Summary of the Proposal. The EPA proposed to determine that a state has satisfied the RFP requirement if the state submits an approvable control strategy under CAA section 189(d) that demonstrates that the state will achieve at least 5 percent reductions in direct $PM_{2.5}$ or $PM_{2.5}$ precursor emissions from sources in the area annually until attainment. Additionally, the EPA proposed that motor vehicle emissions budgets must also be established as part of any RFP plan for direct $PM_{2.5}$ and for any relevant $PM_{2.5}$ plan precursor using the latest planning assumptions and the latest approved motor vehicle emissions model available at the time that the plan is developed for a Serious area subject to 189(d).[198]

b. Final Rule. The EPA is finalizing RFP requirements for attainment plans required pursuant to CAA section 189(d) that are similar to other Serious area RFP requirements discussed in section VI.F of this preamble. The EPA is providing similar guidance regarding how

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[196] A state would also establish motor vehicle emissions budgets for an area's attainment year. Those budgets would be the motor vehicle emissions that the SIP establishes as being necessary to attain the NAAQS.

[197] If an area includes re-entrained road dust in the motor vehicle emissions budget, the latest approved version of AP-42 should be used unless the EPA has approved an alternative model for the area.

[198] *Ibid.*

to prepare an RFP analysis, RFP projected emissions, geographic coverage of emission sources for RFP, and RFP requirements for multi-state nonattainment areas.

The RFP analysis must contain appropriate information to demonstrate that the state will achieve the emissions reductions from the control strategy necessary to result in generally linear reductions in emissions and provide for expeditious attainment as discussed in Section VII.D of this preamble. As with other Serious area RFP analyses , the state may consider $PM_{2.5}$ plan precursor emissions reductions in the aggregate for RFP purposes in a 189(d) area.

The state's RFP analysis must include three components: (1) an implementation schedule for control measures on sources in the nonattainment area, (2) RFP projected emissions for each applicable quantitative milestone year (discussed in Section VII.G of this preamble), based on the anticipated control measure implementation schedule; and (3) an analysis that demonstrates that this schedule of aggregate emissions reductions achieves sufficient progress toward attainment between the applicable baseline year to the attainment year. For additional discussion of each of the components of the RFP analysis, refer to Section IV.F of this preamble. *See* 40 CFR 51.1012(a).

In the proposal, the EPA proposed an option to require at least 5 percent emissions reductions in direct $PM_{2.5}$ and all $PM_{2.5}$ plan precursor from sources in the area annually until attainment to meet the separate RFP requirement for attainment plans. However, some commenters did not agree that EPA should consider an area meeting the 5 percent requirement under CAA section 189(d) to automatically have satisfied the RFP requirement. The EPA agrees with this comment and is therefore not finalizing an approach to the RFP requirement that is tied to the 5 percent requirement. Instead, the final RFP requirement will be tied to progress toward expeditious attainment (which the EPA recommends should be generally linear but may also be

stepwise with appropriate justification), just as it is for all other types of Moderate and Serious area plans for $PM_{2.5}$ as summarized in the previous paragraph. The emissions reductions that a state achieves for purposes of meeting the 5 percent requirement may also be counted towards meeting the separate RFP requirement, but the EPA does not believe that meeting the 5 percent requirement would automatically equate to meeting the RFP requirement. That determination requires the separate evaluations required for the RFP analysis.

The EPA requires that the applicable baseline year for the RFP analysis must be the same year as that represented by the latest base year inventory for the Serious area. The projected attainment date should be as expeditiously as practicable and is discussed further in Section VII.I of this preamble. The RFP analysis must clearly convey how the schedule for implementing the control strategy will provide for generally linear or stepwise progress towards attainment. If stepwise progress is more appropriate for the specific nonattainment area, the state is required to submit a clear rationale and supporting information to explain why generally linear progress towards attainment in the area is not appropriate (*e.g.*, due to the nature of the nonattainment problem, the types of sources contributing to $PM_{2.5}$ levels in the area, and the ability to perform timely implementation of control measures). Further, if a stepwise approach is needed, this does not relieve the state of the requirements of CAA section 189(d). As stated earlier, the EPA requires that a section 189(d) plan must include in its RFP analysis the anticipated emissions reductions expected to be achieved through the implementation of control measures required by the control strategy described in Section VII.D of this preamble. Further, the optional air quality analysis discussed in Section IV.F of this preamble is also available for use by a state preparing a section 189(d) plan.

Additionally, the EPA requires states to establish motor vehicle emissions budgets for direct $PM_{2.5}$ and $PM_{2.5}$ plan precursors using the latest planning assumptions and the latest approved motor vehicle emissions model available at the time that the 189(d) plan is developed.[199] *See* 40 CFR 51.1012(a).It is also important to note that if a section 189(d) area is multi-state or multi-jurisdictional, the states or jurisdictions comprising the area must provide a coordinated approach to meeting the RFP requirement for the shared area. For further information, *see* Section IV.F.5 of this preamble. *See* 40 CFR 51.1012(b).

c. Comments and Responses. Any additional comments received on RFP are addressed in the Response to Comments document found in the docket for this action.

G. Quantitative Milestones

1. Specific Requirements

a. Summary of the Proposal. The proposal indicated that quantitative milestones would need to be achieved every 3 years until the area attains the relevant NAAQS, similar to proposed requirements for Moderate area plans and other types of Serious area plans. In the proposal, the EPA stated that, at a minimum, quantitative milestones selected for an attainment plan submitted under CAA section 189(d) would need to demonstrate a reduction of at least 15 percent (i.e., 5 percent for each year in the 3-year period) in emissions of direct $PM_{2.5}$ and $PM_{2.5}$ plan precursors below those emissions reported in the most recent inventory for the area. The proposal identified requirements for direct $PM_{2.5}$ and precursors, to be consistent with the RFP proposal. The EPA proposed that attainment plans developed pursuant to CAA section 189(d) would have to contain

[199] If an area includes re-entrained road dust in the motor vehicle emissions budget, the latest approved version of AP-42 should be used unless the EPA has approved an alternative model for the area.

quantitative milestones beginning at 13.5 years or 16.5 years from designation (depending on whether the section 189(d) plan would be due before or after the 13.5 year mark), and every 3 years thereafter until the attainment date for the area.

The EPA also proposed that the requirements for quantitative milestones, described in Section VI.G of this preamble, should also apply to quantitative milestones submitted with any revised Serious area attainment plan pursuant to CAA section 189(d).

b. Final Rule. The revised attainment plan for any Serious nonattainment area that fails to attain the relevant $PM_{2.5}$ NAAQS by the applicable attainment date must include quantitative milestones pursuant to CAA section 189(c). These quantitative milestones should track the progress being made in the nonattainment area in the implementation of specific control measures in the SIP, and may potentially be in the form of metrics for tracking air quality improvement or emissions reductions over time. The EPA wishes to clarify that the quantitative milestones for a section 189(d) plan are designed to track RFP, not solely to track progress in achieving the minimum 5 percent annual emission reduction requirement in this section of the CAA. The RFP discussion in the previous section noted that in some cases, the state may need to adopt additional emission reduction measures (beyond those existing or new measures that will meet the 5 percent emission reduction requirement) in order for the plan to meet the overarching requirement to attain the standard as expeditiously as practicable. Thus, the RFP plan and quantitative milestones must be designed to track progress based on the overall set of control measures needed for expeditious attainment.

The quantitative milestones need to be achieved every 3 years until the area attains the relevant NAAQS. Therefore, at a minimum, the final rule requires that quantitative milestones selected for an attainment plan submitted under CAA section 189(d) need to track progress in the

implementation of control measures required to achieve RFP in emissions reductions of direct $PM_{2.5}$ and/or all $PM_{2.5}$ plan precursors described in the previous section. The CAA section 189(d) plan must contain quantitative milestones to be achieved every 3 years, beginning with a milestone at either 13.5 years or 16.5 years from the area's date of designation. If the attainment plan is due prior to a date 13.5 years from designation of the area, then the plan shall contain milestones to be achieved by no later than a milestone date of 13.5 years from the date of designation of the area, and every 3 years thereafter, with the final milestone being the first 3-year milestone date falling after the applicable attainment date. If the attainment plan is due later than a date 13.5 years from designation of the area, then the plan shall contain milestones to be achieved by no later than a milestone date of 16.5 years from the date of designation of the area, and every 3 years thereafter, with the final milestone being the first 3-year milestone date falling after the applicable attainment date. *See* 40 CFR 51.1013(a)(3).

The EPA is also finalizing that the requirements for quantitative milestones described in Section VI.G of this preamble shall also apply to quantitative milestones submitted with any revised attainment plan pursuant to CAA section 189(d), including but not limited to, the construction, content, reporting requirements and a quantitative milestone that specifically tracks implementation of control measures identified in the plan to attach the standard as expeditiously as practicable. *See* 40 CFR 51.1013(a)(3).

c. Comments and Responses. Any additional comments received on quantitative milestones are addressed in the Response to Comments document found in the docket for this action.

H. Contingency Measures

1. Summary of the Proposal

The EPA proposed that contingency measures for attainment plans under CAA section 189(d) for Serious areas that fail to attain the NAAQS by the applicable attainment date must meet the same criteria as contingency measures for a Serious area attainment plan outlined in Section VI.H of this preamble. The EPA also proposed that the contingency measures should achieve approximately 1 year's worth of emissions reductions.

2. Final Rule

All $PM_{2.5}$ attainment plans, including plans for areas subject to CAA section 189(d), must contain contingency measures that are consistent with CAA section 172(c)(9). Section VI.H of this preamble describes the EPA's criteria for contingency measures for a Serious area attainment plan, and contingency measures for a section 189(d) plan must meet the same criteria. The final rule reiterates the EPA's longstanding policy that contingency measures should provide for emissions reductions approximately equivalent to 1 year's worth of reductions needed for RFP.

The statutory contingency measure requirement at CAA section 172(c)(9) is not superseded or subsumed by any requirement under subpart 4. Thus, contingency measures are required as part of a state's attainment plan submission under section 189(d). Accordingly, the final rule requires the criteria for identifying and selecting contingency measures for a section 189(d) submission that are the same as for Moderate or Serious area attainment plans.

Specifically, the EPA is finalizing that the following requirements must be met in order for contingency measures to be approvable as part of a state's attainment plan submission for purposes of section 189(d):

1) Contingency measures must be fully adopted rules or control measures that are ready to be implemented quickly upon a determination by the Administrator of the nonattainment area's failure to meet RFP, failure to meet any quantitative milestone, failure to submit a quantitative milestone report or failure to meet the standard by the applicable attainment date.

2) The SIP must contain trigger mechanisms for the contingency measures, specify a schedule for implementation, and indicate that the measures will be implemented without significant further action by the state or by the EPA.

3) Contingency measures should consist of control measures that are not otherwise included in the control strategy for the SIP, or that achieve emissions reductions not otherwise relied upon in the control strategy for the area.

4) Contingency measures should provide for emissions reductions equivalent to 1 year's share of reductions needed to demonstrate attainment (*i.e.*, the overall needed reductions divided by the number of years from the base year to the attainment year), or approximately equivalent to 1 year's worth of air quality improvement or emissions reductions proportional to the overall amount of air quality improvement or emissions reductions to be achieved by the area's attainment plan.

The EPA is also finalizing its proposal to allow a state to rely on contingency measures that achieve emissions reductions on sources located outside the nonattainment area, but within the state provided that the measures on sources outside the designated nonattainment area are demonstrated to produce the appropriate air quality impact within the nonattainment area.

As with contingency measures for Moderate or Serious areas, the EPA allows a state under these circumstances to rely on additional reductions from federal or local measures already scheduled for implementation as part or all of their contingency measures. The EPA could

consider such measures as meeting the contingency measure requirement as long as they produce emissions reductions in excess of those required to meet other statutory nonattainment provisions (e.g., such as to meet BACM/BACT requirements) and they can be relied on to achieve a sufficient portion of the actual emissions reductions necessary to reduce emissions in the area while the state develops a new plan to bring the area into attainment.[200] As with contingency measures for Moderate area or Serious area attainment plans, the EPA requires that the emissions reductions associated with contingency measures for attainment plans under section 189(d) should be approximately equivalent to 1 year's worth of emissions reductions necessary to achieve RFP for the area, unless the state adequately demonstrates that some smaller amount of reductions is appropriate while the state is revising its attainment plan for the area. *See* 40 CFR 51.1014(b)(2).

The EPA recognizes that identifying contingency measures for a Serious $PM_{2.5}$ nonattainment area that failed to attain the relevant NAAQS by the applicable attainment date may be challenging for a state that should already have fully implemented all control measures identified as "reasonable" and "best," and potentially "most stringent," in addition to any new control measures to achieve the requisite minimum 5 percent reductions in direct $PM_{2.5}$ or $PM_{2.5}$ plan precursor emissions necessary for expeditious attainment. However, for an area that has not implemented MSM, states could identify potential contingency measures by reviewing attainment plans for other nonattainment areas. The state should also reevaluate control measures that were identified previously as technologically or economically infeasible for the area, or otherwise removed from consideration as part of the RACM/RACT or BACM/BACT process.

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[200] *See LEAN v. EPA*, 382 F.3d 575 (5th Cir. 2004).

Additionally, states can review other sources of control measure information, such as the RBLC (a central database of air pollution control technology information) and the EPA's Menu of Control Measures document available at *http://www3.epa.gov/ttn/naaqs/pdfs/MenuOfControlMeasures.pdf*. *See* 40 CFR 51.1014.

3. Comments and Responses

Comment: Commenters stated that because 189(d) requires annual emissions reductions of not less than 5 percent, then the EPA cannot assume that 1 year's worth of emissions reductions will be *no greater than* 5 percent. The commenter stated that only if an area shows that the 5 percent reduction requirement of CAA section 189(d) is greater than what would be necessary to demonstrate RFP annually may an area assume that contingency measures must achieve only the 5 percent target.

Response: The EPA agrees with the commenters. As discussed earlier and in Sections IV.H and VI.H of this preamble, contingency measures should equal approximately 1 year's worth of emissions reductions necessary to achieve RFP for the area. The EPA notes that RFP might require more than the 5 percent emissions reductions required by CAA section 189(d). Therefore, if contingency measures should equal approximately 1 year's worth of emissions reductions necessary to achieve RFP, then those contingency measures should provide more than 5 percent of emissions reductions in direct $PM_{2.5}$ or aggregate $PM_{2.5}$ plan precursors.

Comment: Commenters suggested that, similar to the ozone program, the EPA should consider whether the contingency measures for an area that failed to attain by the deadline for Serious areas could anticipate the development of proven new technology, with a requirement to add further contingency measures if such technology does not develop as anticipated.

Response: The EPA disagrees with the commenters, noting that CAA section 182(e)(5) provides this flexibility for Extreme areas that are nonattainment for the ozone NAAQS. That section of the Act falls within subpart 2 of part D, which identifies additional contingency measure provisions applicable only in ozone nonattainment areas. Subpart 4 does not contain a provision similar to that in subpart 2. Therefore, CAA section 172(c)(9) applies and, as explained earlier, that provision requires contingency measures be included in the attainment plan.

Comment: Commenters requested the EPA to allow a state to demonstrate, in the alternative, that its contingency measures will achieve a 5 percent reduction in $PM_{2.5}$ ambient concentrations, and that such reductions can be obtained by reducing direct $PM_{2.5}$ emissions, emissions of one or more precursors, or both.

Response: The EPA is finalizing the optional air quality analysis as an additional component of the RFP plan, as previously discussed in Section IV.F of the preamble. Therefore, although the state could demonstrate that its contingency measures will achieve a 5 percent reduction in $PM_{2.5}$ ambient concentrations, the EPA notes that this optional analysis does not relieve the requirements of 189(d). Specifically, the area remains required to achieve an emissions reduction of not less than 5 percent of direct $PM_{2.5}$ or any $PM_{2.5}$ plan precursor.

I. Attainment Dates

1. Summary of the proposal

The proposed rule indicated that the new attainment date for an area that failed to attain by the Serious area attainment date would be governed by sections 172(a)(2) and 179(d)(3) of the CAA. Under the proposal, the attainment date would be as expeditiously as practicable, but no later than 5 years from the date of publication in the *Federal Register* of the EPA's

determination that the area failed to attain the relevant NAAQS. The EPA may extend the attainment date by up to 5 additional years based on certain criteria.

2. Final Rule

As described in the proposal, the final rule includes the overarching requirement for a Serious area that failed to attain by the previous attainment date to establish a new date for attaining the standard as expeditiously as practicable. However, neither CAA section 189(d) nor other sections in subpart 4 explicitly establish or provide the authority to establish a new attainment date for the area. Therefore, once an area is beyond the attainment dates that Congress specified in subpart 4 for the PM_{10} NAAQS, the EPA must look to other provisions of part D of the CAA to provide authority for a new attainment date. Sections 179(d)(3) and 172(a)(2) of the CAA provide generally applicable attainment dates that fill the gap in the statute left for areas subject to the requirements of CAA section 189(d). Thus, for a $PM_{2.5}$ nonattainment area subject to CAA section 189(d) requirements, the EPA must establish a new attainment date according to the provisions of CAA section 179(d)(3) and 172(a)(2). The EPA has followed this same approach in the past for PM_{10} nonattainment areas governed by subpart 4 nonattainment requirements.[201]

Applying these provisions, the final rule therefore provides that the new attainment date in a CAA section 189(d) plan must be as expeditious as practicable, but no later than 5 years from the date of publication in the *Federal Register* of the EPA's determination that the area failed to attain the relevant NAAQS. The EPA may extend the attainment date by up to 5

[201] For example, *see* the *Federal Register* notice from June 6, 2007 (72 FR 31183) in which the EPA found that the Phoenix PM_{10} Serious nonattainment area failed to attain the standard by the 2006 attainment date.

additional years (thus to 10 years from the date of publication of the notice of finding of failure to attain by the applicable attainment date for the area) if the agency deems it appropriate "considering the severity of nonattainment and the availability and feasibility of pollution control measures." For a $PM_{2.5}$ nonattainment area subject to CAA section 189(d), the EPA expects that the state will adopt any control measures necessary to demonstrate expeditious attainment within 5 years of the area failing to attain the NAAQS by the applicable Serious area attainment date. The EPA will consider the state's proposed attainment date for the area based on its revised attainment demonstration and modeling of its updated control strategy, and other relevant facts and circumstances for the area, in order to identify the most expeditious attainment date practicable for the area.

3. Comments and Responses

Comment: Some commenters stated that the EPA should set a date that is as expeditious as practicable, but if it takes longer than 10 more years to attain, the EPA may approve such a plan, as long as the minimum 5 percent reduction requirement is met. The commenter stated that this is the plain meaning of CAA section 189(d)'s reference that the plan shall provide for at least 5 percent reductions "from the date of such submission until attainment."

Response: The EPA does not agree with the commenter. As indicated earlier, the EPA's longstanding interpretation is that the statutory provisions of CAA sections 172(c)(2) and 179(d)(3) govern the attainment date for new plans required under CAA section 189(d) for Serious areas that previously fail to attain by the Serious area attainment date. Under certain circumstances, these provisions would allow for an attainment date up to 10 years from the effective date of a finding of failure to attain, but would not allow for an attainment date longer than that.

VIII. NNSR Requirements for $PM_{2.5}$ Nonattainment Areas

A. Background

1. Statutory Requirements for NSR

Section 110(a)(2)(C) of the CAA requires states to include in their SIPs a preconstruction review permitting program that regulates the construction and modification of stationary sources as necessary to ensure that NAAQS are achieved. To address the regulation of the larger pollutant-emitting sources (defined as major stationary sources), Congress provided specific permitting requirements in the CAA in parts C and D of title I. The requirements for preconstruction permits under parts C and D of the CAA are commonly known collectively as the major NSR program because they apply specifically to the preconstruction review and permitting of new major stationary sources and major modifications at existing sources. As explained in Sections VIII.A.1.a and b of this preamble, the preconstruction review of each proposed new major stationary source and major modification generally is carried out on a pollutant-specific basis and the permitting requirements with regard to each pollutant apply based on whether the area in which the proposed major source or major modification would locate is designated attainment (or unclassifiable) or nonattainment for that pollutant at the time the permit is issued.

a. Prevention of Significant Deterioration. Part C of title I of the CAA (hereafter referred to simply as part C) contains implementation plan requirements that apply to new major stationary sources and major modifications locating in areas designated attainment or unclassifiable for any NAAQS. These requirements constitute the Prevention of Significant Deterioration (PSD) program. Pursuant to part C, the EPA has adopted PSD regulations at 40 CFR 51.166 (minimum requirements for an approvable state PSD program in the SIP) and 40

CFR 52.21 (the federal PSD program, applicable in areas where the state does not have an EPA-approved PSD program in its SIP)[202]. The EPA last amended the PSD regulations for $PM_{2.5}$ on January 15, 2013, in the final rule revising the $PM_{2.5}$ NAAQS.[203] This final rule does not relate to the PSD program, nor does it amend the PSD regulations.

b. Nonattainment New Source Review. Part D of title I of the CAA (hereafter referred to as part D) contains implementation plan requirements for nonattainment areas, which include the requirements for permitting new major stationary sources and major modifications locating in designated nonattainment areas, referred to as the Nonattainment New Source Review (NNSR) program. As noted earlier, part D contains several subparts that include various requirements for addressing nonattainment areas. Subpart 1 addresses plan requirements for nonattainment areas generally, including CAA section 172(c)(5), which requires preconstruction and operating permits for new major stationary sources and major modifications locating in nonattainment areas. Section 173 of the CAA outlines the minimum statutory requirements for a state's NNSR permit program and serves as the basis for the EPA's NNSR regulations for $PM_{2.5}$ as promulgated in the 2008 $PM_{2.5}$ NSR Rule published at 73 FR 28321, May 16, 2008. Subpart 4 was added to part D as part of the 1990 CAA Amendments and includes additional plan provisions for designated PM_{10} nonattainment areas. Relevant here, CAA section 189(a)(1)(A) of subpart 4 requires states to include in their implementation plan a permit program addressing major stationary sources of PM_{10} that meets the requirements under CAA section 173 of subpart

[202] The federal PSD program enables the EPA or a state that has been delegated authority by the EPA to issue PSD permits.

[203] More information on the PSD requirements for $PM_{2.5}$ as well as the public comments and the EPA's responses to those comments is contained in the January 15, 2013 *Federal Register* document (78 FR 3086, beginning at page 3251).

1. Subpart 4 also includes some additional preconstruction review requirements, which, until the court's decision in *NRDC v. EPA*, the EPA has only applied to major sources of PM_{10} located in PM_{10} nonattainment areas. The specific NNSR requirements contained in both subparts 1 and 4 are described later, including the changes that we are making in this final rule to the NNSR regulations to address these requirements with respect to $PM_{2.5}$.

2. Federal NNSR Regulations

The EPA has adopted numerous NNSR regulations in 40 CFR parts 51 and 52, including §51.165; part 51 Appendix S; and §52.24. An approvable NNSR program in a state's implementation plan must, at a minimum, meet the applicable program requirements set forth in the federal NNSR provisions at 40 CFR 51.165, which for $PM_{2.5}$ have been based on changes to that section made by the 2008 $PM_{2.5}$ NSR Rule. States with designated nonattainment areas for a particular pollutant are required to adopt regulations consistent with those applicable plan requirements, including any subsequent rule changes that the EPA may make, and submit them to the EPA for approval as part of their SIP within a period of time consistent with the schedule prescribed by the CAA or the EPA, as appropriate.

The EPA interprets the requirement established under section 110(a)(2)(C) of the CAA that states regulate the construction and modification of sources to apply as of the effective date of an area's designation to nonattainment for a given pollutant.[204] Although CAA section 110(a)(2)(C) does not contain specific requirements a state must follow for issuing major source permits during the interim period between effective date of designation and the date when the

[204] *See* the EPA's final rule to implement certain aspects of the 1990 CAA Amendments relating to NSR and PSD, published in the *Federal Register* on November 29, 2005 (70 FR 71612, 71677 and 71678).

EPA approves a state's NNSR program to address a given pollutant, the EPA regulations at 40 CFR 52.24(k) authorize states to apply 40 CFR part 51, Appendix S, known as the Emission Offset Interpretative Ruling or simply the Offset Ruling, during the interim period. [205, 206]

Accordingly, states with newly designated nonattainment areas for the revised primary $PM_{2.5}$ NAAQS have two possible means by which they can implement NNSR requirements for $PM_{2.5}$ following the effective date of designations and until the EPA approves a SIP submission meeting the NNSR requirements for $PM_{2.5}$ promulgated in this rule. First, any state that already has a SIP-approved NNSR program for $PM_{2.5}$ (e.g., where the state has had other $PM_{2.5}$ nonattainment areas for which the EPA has approved an NNSR program) should continue to apply those permitting requirements in the interim. Second, any state that lacks an approved NNSR program for $PM_{2.5}$ may rely upon the NNSR provisions in Appendix S until the EPA approves that state's SIP submission in order to ensure that proposed new major stationary

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[205] States with designated $PM_{2.5}$ nonattainment areas for the 1997 and 2006 $PM_{2.5}$ standards were required to submit SIPs, including a NNSR program satisfying the requirements of the 2008 $PM_{2.5}$ NSR Rule, by May 16, 2011, 3 years from the date of publication of that 2008 rule. *See* 73 FR 28321 (May 16, 2008), at page 28342. States must continue to implement those approved state programs to issue permits to new major stationary sources and major modifications until the state's revised program containing the subpart 4 NNSR provisions promulgated in this rulemaking is approved under the applicable SIP.

[206] Appendix S was originally promulgated in 1976 to address whether, and to what extent, new and modified sources would be allowed to construct in nonattainment areas whose attainment deadlines had already passed, in light of the regulatory requirement that applications for construction permits for new or modified sources be disapproved where the source would interfere with attainment of the NAAQS, *see* 41 FR 55524 (December 21, 1976). When Congress added the part D provisions in the 1977 CAA Amendments, it also added the requirement that SIPs contain NNSR provisions as set forth in Part D. Additionally, Congress provided that Appendix S would govern preconstruction permitting in nonattainment areas lacking approved part D SIPs before a construction ban went into effect. When Congress removed the construction ban via the 1990 CAA Amendments (except as provided for in CAA section 110(n)(3)), it left in place the use of the interim NNSR program under Appendix S.

sources and major modifications for $PM_{2.5}$ in newly designated $PM_{2.5}$ nonattainment areas undergo the appropriate type of preconstruction review in the interim.

a. General Applicability. Stationary sources are considered to be "major" sources based on the amount of a given pollutant (or a precursor for that pollutant) the source emits or has the potential to emit, as defined by the statute. New major stationary sources are subject to the NNSR requirements when they are major for the pollutant (or a precursor for that pollutant) for which an area is designated nonattainment. *See* 40 CFR 51.165(a)(2)(i). With regard to major modifications, NNSR applies to proposed physical changes or changes in the method of operation of an existing stationary source that (1) is major for the nonattainment pollutant (or a precursor for that pollutant) and (2) results in both a significant emissions increase and a significant net emissions increase of that same nonattainment pollutant (or same precursor for that pollutant).[207]

For each proposed new major stationary source and major modification, the general NNSR requirements to be included in a state's SIP include the following: (i) the installation and continuous operation of pollution control technology that complies with the Lowest Achievable Emission Rate (LAER); (ii) the acquisition of creditable emissions reductions to adequately offset the proposed emissions increase of the nonattainment pollutant; and (iii) a certification that all other sources owned by the applicant are complying with all applicable requirements of the

[207] *See* 40 CFR 51.165(a)(1)(v)(A), (a)(2)(ii)(A). As will be explained in ensuing discussions, the nonattainment pollutant and any applicable precursors for that pollutant are considered separately for NNSR applicability purposes.

CAA.[208] These NNSR requirements apply as of the effective date of the designation of an area as nonattainment for the pollutant and must be satisfied by a proposed major new source or major modification locating in such area as a prerequisite for obtaining a NNSR permit.

b. Historical Overview of NNSR for PM_{10} and $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS). The EPA revised the PM NAAQS in 1997, establishing new annual and 24-hour NAAQS using $PM_{2.5}$ particles as a new indicator, while retaining the NAAQS for PM_{10}.[209] In 2006, the EPA again revised the suite of PM NAAQS by tightening the 24-hour $PM_{2.5}$ standards and retaining the level of the annual $PM_{2.5}$ standards.[210] In 2008, the EPA issued the $PM_{2.5}$ NSR Rule that established various provisions ensuring that proposed new major stationary sources or major modifications of sources of direct $PM_{2.5}$ emissions or emissions of applicable $PM_{2.5}$ precursors would be required to undergo preconstruction review.[211] The EPA included specific provisions in the 2008 $PM_{2.5}$ NSR Rule that apply when such sources are located in a designated $PM_{2.5}$ nonattainment area. Unlike the NNSR requirements for PM_{10} developed under subpart 4, the EPA determined that the applicable implementation requirements for the $PM_{2.5}$ NAAQS were limited to the general nonattainment provisions under subpart 1.

With regard to NSR applicability for $PM_{2.5}$ precursors in the 2008 $PM_{2.5}$ NSR Rule, the EPA recognized that, under the appropriate conditions, NO_x, SO_2, VOC and ammonia could each

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[208] The basic NNSR requirements are set forth in CAA section 173 of subpart 1. Subpart 4 adds a more stringent definition of "major source" for PM_{10} sources locating in PM_{10} nonattainment areas classified as Serious and sets forth provisions for the regulation and potential exemption from regulation of major sources of PM_{10} precursors in PM_{10} nonattainment areas. Until the decision in *NRDC v. EPA* was issued, the additional subpart 4 requirements had not been directly applied to $PM_{2.5}$.
[209] *See* 62 FR 38652 (July 18, 1997).
[210] *See* 71 FR 61144 (October 17, 2006).
[211] *See* 73 FR 28321 (May 16, 2008).

contribute to the formation of $PM_{2.5}$ in the ambient air. However, the EPA issued regulations that did not require states to subject all of these precursors to regulation as part of the attainment plan or NSR permitting requirements applicable in a given nonattainment area.[212] Instead, the EPA established the initial presumptions for nonattainment areas that SO_2 and NO_x should be regulated precursors for $PM_{2.5}$, but VOC and ammonia need not be regulated precursors.[213]

As described in Section II.B of this preamble, in January 2013 the court's decision in *NRDC v. EPA* held that the EPA erred in implementing the $PM_{2.5}$ NAAQS under the general implementation requirements in subpart 1, rather than relying on the implementation requirements specific to PM_{10} in subpart 4 of the CAA. Accordingly, the court directed the EPA to comply with the requirements of subpart 4 when developing implementing regulations for $PM_{2.5}$ nonattainment areas.

The *NRDC* decision has specific implications for implementing the NNSR program for $PM_{2.5}$. Two provisions of subpart 4 impose additional requirements on NNSR plans developed to address sources locating in areas designated nonattainment for $PM_{2.5}$. The first relates to the definition of "major stationary source" that applies to areas initially designated as Moderate nonattainment areas and subsequently reclassified as Serious. In such areas, section 189(b)(3) of the CAA defines the major source threshold as 70 tpy of PM_{10}. The second relevant subpart 4 provision governs the treatment of major sources of PM_{10} precursors. As previously described in Section III of this preamble, section 189(e) of the CAA requires that the control requirements

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[212] *See* 72 FR 20589.

[213] In the 2008 $PM_{2.5}$ NSR Rule, the EPA concluded that SO_2 should be regulated as a precursor for $PM_{2.5}$ in all areas. In addition, the EPA or the states could rebut the initial presumptions regarding NO_x, VOC or ammonia on an area-by-area basis with a demonstration approved by the Administrator and thus reverse any of those presumptions in the state's implementation plan for that area. *See* 73 FR 28327.

applicable to major stationary sources of PM_{10} also apply to major stationary sources of PM_{10} precursors, unless the Administrator determines that such sources of PM_{10} precursors do not contribute significantly to PM_{10} levels that exceed the standard in that area. The EPA's proposed amendments to address the subpart 4 requirements with respect to $PM_{2.5}$ and the EPA's responses to comments received on its proposal are summarized in the relevant subsections later.

It is worth noting that the 2008 $PM_{2.5}$ NSR Rule promulgated new NSR requirements for implementation of $PM_{2.5}$ in both nonattainment areas (NNSR) and attainment/unclassifiable areas (PSD). As subpart 4 includes requirements only pertinent to nonattainment areas, the EPA does not consider the portions of the 2008 $PM_{2.5}$ NSR Rule that address requirements for $PM_{2.5}$ attainment and unclassifiable areas to be affected by the court's opinion in *NRDC v. EPA*. Therefore, the EPA did not propose to revise any PSD requirements promulgated in the 2008 $PM_{2.5}$ NSR Rule in order to comply with the court's decision.

B. Final NNSR Requirements for $PM_{2.5}$ Nonattainment Areas

This section provides a description of the changes that the EPA is making to the NNSR requirements for $PM_{2.5}$ that are contained in 40 CFR 51.165, which provides the minimum requirements for a NNSR program under an approved implementation plan, and in Appendix S, which serves as an interim NNSR permitting program pending approval of a state's SIP to address NNSR requirements for a particular pollutant.

For both sets of regulations, we will describe the changes that were proposed, the final requirements, the comments received, and the EPA's responses to them.

1. 40 CFR 51.165

In this final rule, as explained in more detail later, the EPA is making the following revisions that affect the NNSR regulations for $PM_{2.5}$ at 40 CFR 51.165: (a) amending the definition of "regulated NSR pollutant" with regard to $PM_{2.5}$ precursors; (b) amending the definition of "major stationary source" with regard to major sources of direct $PM_{2.5}$ emissions and $PM_{2.5}$ precursors locating in $PM_{2.5}$ nonattainment areas classified as Moderate and Serious; (c) amending the definition of "significant" with regard to emissions of $PM_{2.5}$ precursors; and (d) codifying the EPA's policy for determining whether a source is "major" for $PM_{2.5}$ with regard to emissions of direct $PM_{2.5}$ and its precursors.

Also, the EPA explains in this section that it is codifying the schedule for states to submit NNSR SIP revisions for $PM_{2.5}$ that meet the requirements of 40 CFR 51.165. The schedules for submitting revised NNSR programs for $PM_{2.5}$ for Moderate and Serious areas are not contained in 40 CFR 51.165 NNSR regulations but in new 40 CFR 51.1003(a) and (b), respectively.

a. Definition of "regulated NSR pollutant"—$PM_{2.5}$ Precursors.

i. Summary of Proposal.

CAA section 189(e) requires that the control requirements applicable to major stationary sources of PM_{10} also apply to major stationary sources of PM_{10} precursors, unless the Administrator determines that such sources of PM_{10} precursors do not contribute significantly to PM_{10} levels that exceed the standard in that area. In order to align the NNSR regulations for $PM_{2.5}$ with the requirements of CAA section 189(e), the EPA proposed several amendments to certain definitions within 40 CFR 51.165, as explained in the subsections that follow, in order to

regulate all four identified $PM_{2.5}$ precursors consistent with the statute.[214] The EPA proposed to revise the NNSR definition of "regulated NSR pollutant" to include SO_2, NO_x, VOC and ammonia as regulated $PM_{2.5}$ precursors.

The EPA also proposed to add language to the definition of "regulated NSR pollutant" to address the provision of CAA section 189(e) that allows an exemption from the NNSR permit requirements for major stationary sources or major modifications of a particular precursor if the state demonstrates to the satisfaction of the EPA that major stationary sources of such precursor do not contribute significantly to $PM_{2.5}$ levels that exceed the $PM_{2.5}$ ambient standards in a particular nonattainment area. In Section III of the preamble of the proposal, the EPA proposed and sought comment on several policy approaches that a state could use to make the necessary demonstration that would enable the state to exempt sources of a particular precursor from being regulated under the attainment plan for a particular $PM_{2.5}$ nonattainment area altogether or from individual components of that plan, including the NNSR permitting requirements. *See* 80 FR 15350-62.

ii. Final Rule.

The EPA is amending the definition of "regulated NSR pollutant" at 40 CFR 51.165 to include a new provision stating that SO_2, NO_x, VOC and ammonia are $PM_{2.5}$ precursors in any $PM_{2.5}$ nonattainment area. *See* 40 CFR 51.165(a)(1)(xxxvii)(C)(*2*). The EPA is also providing in this final rule that sources of a particular precursor may be exempted from the NNSR control

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[214] The EPA explained earlier in this preamble that the court's 2013 decision in *NRDC v. EPA* reasoned that the EPA's approach to precursors in the 2007 and 2008 $PM_{2.5}$ regulations had the effect of reversing the presumption embodied with subpart 4 at CAA section 189(e) that a state should regulate major sources of all PM precursors unless the state has made a specific showing why regulation of sources of a particular precursor is not necessary.

requirements via a demonstration approved by the Administrator showing that new major stationary sources and major modifications of a particular precursor would not contribute significantly to levels of $PM_{2.5}$ that exceed the standard in a particular nonattainment area. It is noted, however, that the exemption provision is not being codified within the definition of "regulated NSR pollutant" as originally proposed. Instead, this exemption provision is contained in a new paragraph 51.165(a)(13), which is based on CAA section 189(e) and provides generally that the control requirements applicable to new major stationary sources and major modifications of $PM_{2.5}$ are also applicable to new major stationary sources and major modifications of $PM_{2.5}$ precursors.

In addition, the provision has also been revised to focus on the exemption of control requirements for sources of a particular precursor rather than the exemption of the precursor itself. The EPA believes that this shift in focus is more consistent with the statutory language at CAA section 189(e), which also focuses on the exemption of sources from the control requirements for that precursor. As explained in Section III of this preamble, the EPA has defined a precursor demonstration specifically for exempting major sources of a particular precursor from regulation under the NNSR program. This demonstration involves a sensitivity-based analysis that evaluates the sensitivity of ambient $PM_{2.5}$ concentrations in a nonattainment area to increases of precursor emissions resulting from potential major source growth in the area. The EPA intends to issue a technical assistance document that provides additional information on conducting appropriate sensitivity-based analyses for this purpose. A more complete description of this and the other types of precursor demonstrations is contained in Section III of this preamble.

The EPA recommends that the state consult with the appropriate EPA Regional Office as early as possible to discuss appropriate analyses for the NNSR precursor demonstration. If the appropriate precursor demonstration is submitted to and approved by the Administrator, the state would not be required to regulate new major stationary sources and major modifications of the insignificant precursor under the state's approved NNSR program in a particular nonattainment area. Such exemption from the NNSR control requirements would include an exemption from all of the prerequisite conditions set forth in 40 CFR 51.165 for $PM_{2.5}$, including the requirements to implement LAER and to obtain emissions offsets for the precursor.

iii. Comments and Responses.

Comments: Some commenters supported revising the definition of "regulated NSR pollutant" consistent with the *NRDC* decision and subpart 4 to establish SO_2, NO_x, VOC and ammonia as regulated $PM_{2.5}$ precursors, unless a state demonstrates that major stationary sources of a particular precursor do not contribute significantly to $PM_{2.5}$ levels that exceed the standard in the nonattainment area.

On the other hand, several commenters urged the EPA not to begin regulating VOC and ammonia as $PM_{2.5}$ precursors under the NNSR program at this time. Some of the commenters cited ongoing technical challenges related to evaluating the contribution of $PM_{2.5}$ precursor gases to ambient $PM_{2.5}$ concentrations, while some commenters stated that the EPA should provide an up-front rebuttable presumption that a state is not required to regulate VOC and ammonia as $PM_{2.5}$ precursors under NNSR. A commenter stated that requiring NNSR to apply to sources of these precursors that would have an insignificant impact on the nonattainment issue is a waste of resources and will unnecessarily lead to burdensome over-regulation for affected sources.

Response: We do not agree with the commenters who oppose the EPA's proposal to require regulation of all four technical and scientific precursors in $PM_{2.5}$ nonattainment areas. Specifically, we do not agree that a delay in regulating VOC and ammonia under a state's NNSR permitting program is reasonable or permissible. Similarly, the EPA does not agree that it has the authority to provide a rebuttable presumption to exempt VOC and ammonia from NNSR permitting requirements. CAA section 189(e) explicitly requires the regulation of major sources of $PM_{2.5}$ precursors unless the state demonstrates to the EPA's satisfaction that such regulation is unnecessary. Thus, CAA section 189(e) does not allow the EPA to unilaterally exempt an identified scientific and technical $PM_{2.5}$ precursor from regulation, nor does it permit the EPA to establish a rebuttable presumption exempting any $PM_{2.5}$ precursor from regulation. The EPA's use of a rebuttable presumption exempting certain precursors from regulation in its prior $PM_{2.5}$ implementation rules was directly at issue in *NRDC v. EPA*, wherein the court made it clear that it would be inappropriate for the EPA to establish such presumptions pursuant to the requirements of subpart 4.[215]

In some $PM_{2.5}$ nonattainment areas, the minimization (and offsetting) of new precursor emissions from major source growth in the area could be an important component of a state's attainment plan for the $PM_{2.5}$ NAAQS. Where it is not, CAA section 189(e) provides states with the opportunity to make an area-by-area demonstration that would enable the state to exempt sources of any $PM_{2.5}$ precursor from regulation if it is shown that sources of the precursor does not contribute significantly to the PM levels that exceed the standard in a particular nonattainment area. Accordingly, consistent with CAA section 189(e), this final rule provides

[215] *See* NRDC v. EPA, 706 F.3d at 437, n.7 & n10.

guidance to assist states in preparing a NNSR precursor demonstration, as described in Section III of this preamble, by which sources of VOC, ammonia or any other $PM_{2.5}$ precursor may be exempted from the NNSR requirements for $PM_{2.5}$ if the state shows that increased source emissions of the relevant precursor would not contribute significantly to $PM_{2.5}$ concentrations in a $PM_{2.5}$ nonattainment area.

Moreover, as described in Section VIII.B.2 of this preamble, the EPA is not commencing with the regulation of VOC and ammonia (hence not requiring NNSR review of any new major stationary sources and major modifications of such precursors) for those states relying on Appendix S to issue NNSR permits during the interim SIP development period.[216] This provides states with an opportunity to evaluate the contribution of VOC and ammonia emissions from potential major source growth to ambient $PM_{2.5}$ concentrations and determine whether an exemption of new and modified sources of either of these precursors from the NNSR permitting requirements is justified before such sources will be subject to regulation.

b. Definition of "major stationary source" in Moderate and Serious $PM_{2.5}$ Nonattainment Areas—Direct $PM_{2.5}$ Emissions and $PM_{2.5}$ Precursors.

i. Summary of Proposal.

Subpart 4, as described earlier in this document, contains provisions for the classifications of PM_{10} nonattainment areas as either Moderate or Serious areas. However, the NNSR regulations for $PM_{2.5}$ set forth in the 2008 $PM_{2.5}$ NSR Rule were developed pursuant to

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[216] States should use Appendix S to issue NNSR permits to new major stationary sources and major modifications with respect to a particular nonattainment pollutant if the state's implementation plan lacks a NNSR program for that pollutant. Where a state's existing NNSR program for a particular pollutant lacks certain provisions for which revision in required, the existing program—not Appendix S—is the applicable permit program for issuing NNSR permits until the necessary revisions are approved by the EPA.

subpart 1, which does not provide for the classification of designated nonattainment areas as Moderate and Serious areas. Accordingly, in the proposal for this final rule, the EPA proposed to amend its definition of "major stationary source" in the 40 CFR 51.165 NNSR regulations for $PM_{2.5}$ to address subpart 4 requirements concerning the regulation of direct $PM_{2.5}$ and $PM_{2.5}$ precursors in both Moderate and Serious nonattainment areas for $PM_{2.5}$. First, the EPA proposed to revise the definition of "major stationary source" by qualifying the term "regulated NSR pollutant" with the new phrase "(as defined in paragraph (a)(1)(xxxvii) of this section)." The new phrase explicitly cross-references the definition of "regulated NSR pollutant," which also defines each of the $PM_{2.5}$ precursors. Hence, sources of both direct $PM_{2.5}$ emissions and emissions of each $PM_{2.5}$ precursor would clearly be included in the definition of a "major stationary source."

Second, the EPA proposed to amend the definition of "major stationary source" consistent with section 189(b)(3) of the CAA to establish a lower major source threshold for new major stationary sources and major modifications locating in $PM_{2.5}$ nonattainment areas classified as Serious. CAA section 302(j) generally defines a "major stationary source" as a source that emits or has the potential to emit 100 tpy or more of any air pollutant. The provision explicitly states that this definition applies for purposes of the CAA except as otherwise expressly provided in the statute. Thus, for sources locating in $PM_{2.5}$ nonattainment areas classified as Moderate, where no CAA provision provides otherwise, the applicable major source threshold for direct $PM_{2.5}$ emissions and for each $PM_{2.5}$ precursor is 100 tpy. Subpart 4, meanwhile, establishes a major source threshold for PM_{10} nonattainment areas classified as Serious at 70 tpy in CAA section 189(b)(3). Therefore, the EPA proposed to set the major source threshold for direct $PM_{2.5}$ emissions and for each $PM_{2.5}$ precursor at 70 tpy of direct $PM_{2.5}$

emissions and each individual precursor. The alternative proposed for consideration was to promulgate a $PM_{2.5}$ major source threshold lower than 70 tpy of direct $PM_{2.5}$ emissions, recognizing that $PM_{2.5}$ is a subset of PM_{10}. The EPA sought comment on possible ways in which a $PM_{2.5}$ emissions rate different from the statutory 70 tpy rate for PM_{10} emissions could be established, taking into account variations in the $PM_{10}/PM_{2.5}$ ratio for different source categories and activities. Nevertheless, the agency indicated that the proposed option (*i.e.*, a major source threshold of 70 tpy of direct $PM_{2.5}$ emissions for stationary sources proposing to construct or modify in $PM_{2.5}$ nonattainment areas classified as Serious) represented the preferred approach.

In its effort to ensure that major sources of $PM_{2.5}$ precursors locating in Serious areas are regulated in the same manner as major sources of direct $PM_{2.5}$ emissions locating in Serious areas, the EPA proposed major source thresholds for $PM_{2.5}$ precursors would be consistent with the threshold already defined for direct $PM_{2.5}$ emissions in $PM_{2.5}$ nonattainment areas reclassified as Serious. Consistent with the EPA's preferred approach for direct $PM_{2.5}$ emissions, the EPA proposed to define "major" for each $PM_{2.5}$ precursor as 70 tpy. However, the EPA also solicited comments on the appropriateness of setting the precursor major source thresholds at a different rate, particularly if, as alternatively proposed, the agency defined "major stationary source" for sources of direct $PM_{2.5}$ emissions in Serious $PM_{2.5}$ nonattainment areas at a rate lower than 70 tpy of $PM_{2.5}$ emissions. For example, if the agency had set the major source threshold at 60 tpy of direct $PM_{2.5}$ emissions in Serious $PM_{2.5}$ nonattainment areas, the agency would have also considered setting the major source threshold for each $PM_{2.5}$ precursor at 60 tpy of that particular precursor.

Regardless of whether the major source threshold for direct $PM_{2.5}$ emissions was set at 70 tpy or some lower rate, the EPA indicated in the proposal that it believed a reasonable technical

argument could be made that the threshold set for direct $PM_{2.5}$ emissions would be too low to be regarded as "major" for each precursor when considering the effects that any precursor sources could have on ambient $PM_{2.5}$ concentrations. In support of higher emissions rates for defining "major" for $PM_{2.5}$ precursors, the EPA cited a previous analysis that it had undertaken to examine the relationship between emissions of SO_2 and NO_x and the formation of secondary $PM_{2.5}$ in the ambient air.[217] However, the agency also identified potential legal impediments to setting a major source threshold for precursors at a rate higher than those statutorily prescribed for direct emissions of a pollutant. Accordingly, the agency solicited comments on the general appropriateness of setting higher major source thresholds for one or more $PM_{2.5}$ precursors in $PM_{2.5}$ nonattainment areas, and asked commenters to include legal and technical considerations that should be made part of the EPA's future analysis of NNSR requirements with respect to $PM_{2.5}$ precursors.

ii. Final Rule.

In this final rule, the EPA has followed its preferred approach and has made the changes necessary to ensure that "major" is defined for direct $PM_{2.5}$ emissions as well as all $PM_{2.5}$ precursors in Moderate and Serious $PM_{2.5}$ nonattainment areas. For Moderate areas, the major source threshold of 100 tpy applies individually to direct $PM_{2.5}$ emissions and to each $PM_{2.5}$ precursor; in Serious areas, the major source thresholds for direct $PM_{2.5}$ emissions and emissions of each $PM_{2.5}$ precursor are individually defined as 70 tpy. As explained in Section VIII.B.1.d of this preamble, the determination of whether sources of direct $PM_{2.5}$ emissions or each $PM_{2.5}$

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[217] *See* 80 FR 15433. The technical assessment, with details on data and modeling inputs, was fully described in a technical memo titled "Details on Technical Assessment to Develop Interpollutant Trading Ratios for $PM_{2.5}$ Offsets," which was placed in the docket to the 2008 $PM_{2.5}$ NSR Rule. *See also* 73 FR 28321 (May 16, 2008), at page 28339.

precursor are "major" is to be made separately for each pollutant. That is, emissions rates for individual precursors should not be added together to determine a source's major source status with regard to $PM_{2.5}$. *See* 40 CFR 51.165(a)(2)(i).

iii. Comments and Responses.

Comment: Most commenters generally supported the preferred approach of setting a major source threshold at 70 tpy of direct $PM_{2.5}$ emissions in Serious areas, agreeing with the EPA that establishing a $PM_{2.5}$ equivalency to PM_{10} emissions would be problematic. Some commenters specifically opposed any effort to set a threshold for $PM_{2.5}$ that is lower than the threshold for PM_{10}. A commenter stated that, if $PM_{2.5}$ is legally subject to subpart 4 because it is a subset of PM_{10}, and Congress meant to subject all sources of PM_{10} emissions to subpart 4, then Congress meant to have the major source threshold for PM_{10} apply to $PM_{2.5}$ as well. No commenter advocated that the EPA set a major source threshold lower than 70 tpy for direct $PM_{2.5}$ emissions.

Response: The EPA agrees with the commenters that it is reasonable to set the major source threshold at 70 tpy of direct $PM_{2.5}$ emissions for sources locating in $PM_{2.5}$ nonattainment areas classified as Serious. While CAA section 189(b)(3) does not explicitly define a "major source" and "major stationary source" as 70 tpy of $PM_{2.5}$ for $PM_{2.5}$ nonattainment areas reclassified as Serious (because it refers to PM_{10}), the most straightforward and consistent application of the statutory provision is to establish the same numerical threshold for sources of $PM_{2.5}$ in Serious $PM_{2.5}$ nonattainment areas as the threshold for sources of PM_{10} emissions in Serious PM_{10} nonattainment areas. Sources locating in Moderate nonattainment areas are already subject to the same numerical major source threshold (100 tpy) under CAA section 302(j) for direct emissions of both PM_{10} and $PM_{2.5}$, so the EPA believes that it is also reasonable to

establish the threshold for $PM_{2.5}$ in Serious areas at the same numerical rate as the threshold that applies to PM_{10} in Serious areas.

We also agree that it would be difficult to establish a lower uniform major source threshold for $PM_{2.5}$ that would represent a rate that is equivalent to 70 tpy of PM_{10} emissions at all sources subject to NNSR permitting requirements. With regard to the commenter who stated that "Congress meant to have the major source threshold for PM_{10} apply to $PM_{2.5}$ as well," it is not clear whether the commenter advocates that proposed sources of $PM_{2.5}$ be subjected to NNSR permitting using a major source threshold of 70 tpy of PM_{10} emissions or a major source threshold of 70 tpy of $PM_{2.5}$ emissions for sources of $PM_{2.5}$ locating in $PM_{2.5}$ nonattainment areas. The former is not the EPA's interpretation of the CAA. While $PM_{2.5}$ is a subset of PM_{10}, to assume that a source emitting major amounts of PM_{10} will also emit a substantial amount of $PM_{2.5}$ is not always reasonable. The relative amounts of PM_{10} and $PM_{2.5}$ emitted by various source categories is known to vary significantly and we do not believe that it would be reasonable to subject sources to major source review for $PM_{2.5}$ on the basis of the level of PM_{10} emissions as this could mean that sources are subject to NNSR based on different levels of $PM_{2.5}$ emissions on an area-by-area basis. We do not believe that Congress intended such a lack of uniformity in the application of the major source threshold to sources of direct $PM_{2.5}$. Moreover, even if it were permissible to interpret CAA section 189(b)(3) in this manner, we have determined that the most reasonable and straightforward approach is to establish a separate major source threshold for direct emissions of $PM_{2.5}$ at 70 tpy for sources locating in $PM_{2.5}$ nonattainment areas classified as Serious.

Comment: With regard to the definition of "major stationary source" for $PM_{2.5}$ precursors in Moderate and Serious areas, several commenters supported using the same major source

threshold value for direct $PM_{2.5}$ emissions and $PM_{2.5}$ precursors. One of these commenters expressly opposed any alternative approach that would set a different threshold for $PM_{2.5}$ precursors than for direct $PM_{2.5}$ emissions because the commenter asserted that it would be impossible to set a uniform national ratio reflecting the effect of the various precursors on ambient $PM_{2.5}$ concentrations relative to direct $PM_{2.5}$ emissions.

On the other hand, some commenters wanted the EPA to include a provision in the NNSR regulations allowing states to make a case-by-case demonstration to use higher major source thresholds for $PM_{2.5}$ precursors for permit reviews. These commenters expressed concern that the 100 tpy major source threshold for Moderate areas, and the 70 tpy threshold for Serious, are both too low for the $PM_{2.5}$ precursors and do not realistically reflect the effect that each precursor has on ambient $PM_{2.5}$ concentrations. These commenters suggested the EPA should conduct further analyses to determine what higher quantity of emissions of each regulated precursor would be equivalent to 100 tpy (for Moderate areas) and 70 tpy (for Serious areas) of direct $PM_{2.5}$ emissions in terms of contribution to $PM_{2.5}$ concentrations in ambient air. These commenters recommended that the EPA use the information gained from the recommended analyses to determine appropriate thresholds and make its proposed thresholds available for public comment.

Response: In setting the major source threshold for each $PM_{2.5}$ precursor at 100 tpy for Moderate areas, the EPA is following the precedent established in the 2008 $PM_{2.5}$ NSR Rule in which the agency set the same 100 tpy major source threshold for direct $PM_{2.5}$ emissions and each of the regulated precursors (at that time SO_2 and NO_x).[218] Setting the same 100 tpy major

[218] *Ibid.*

source thresholds for sources of $PM_{2.5}$ emissions and regulated $PM_{2.5}$ precursor emissions is also consistent with the way in which we have historically interpreted the requirements of CAA section 189(e) as they applied to emissions of PM_{10} and PM_{10} precursors.[219]

Moreover, section 302(j) of the CAA contains a definition of "major emitting facility" and "major stationary source" that applies to, among other things, programs implemented under subpart 1 such as the general NNSR program requirements in CAA section 173.[220] This definition also applies to programs implemented under subpart 4 to the extent that they regulate $PM_{2.5}$ nonattainment areas classified as Moderate, as subpart 4 does not establish a different definition of major sources for such areas. That definition defines a source as "major" whenever a facility or source "emits, or has the potential to emit, one hundred tons per year or more of *any air pollutant*."[221] This provision does not clearly provide the EPA with the authority to set a major source threshold higher than 100 tpy for a pollutant merely because it is a precursor for another pollutant. Rather, CAA section 302(g) clearly defines the term "air pollutant" to "include any precursors to the formation of any air pollutant."

With regard to the setting of the major source thresholds for PM_{10} precursors in Serious areas, a House of Representatives Report accompanying the 1990 amendments to the CAA described the effects of adding CAA section 189(b)(3), defining "major" sources locating in PM nonattainment areas classified as Serious as those sources that emit or have the potential to emit 70 tpy of PM_{10}. The report specifically notes that "new or modified sources emitting 70 tons or

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[219] *See* 57 FR 13498 (April 16, 1992), at page 13538.
[220] *Ibid.* (e*mphasis added*).
[221] 42 U.S.C. 7602(j).

more per year of VOC [a $PM_{2.5}$ precursor] will be subject to new source review requirements."[222] Thus, Congress contemplated that the same major source threshold would apply to sources of direct PM_{10} emissions and PM_{10} precursors in Serious PM_{10} nonattainment areas. The same approach logically applies when applying the provision to sources locating in areas designated as Serious $PM_{2.5}$ nonattainment areas.

Since the EPA may not have the legal authority to establish major source thresholds for $PM_{2.5}$ precursors at levels higher than the statutory threshold applied to sources of direct $PM_{2.5}$ emissions, it would be inappropriate to allow states discretion for setting major source thresholds for $PM_{2.5}$ precursors that exceed the statutory thresholds. Moreover, while we acknowledge that $PM_{2.5}$ precursors will not likely form ambient $PM_{2.5}$ in the nonattainment area on a ton-per-ton basis, there is not currently sufficient technical basis that would enable the agency to propose uniform higher major source thresholds for any of the four $PM_{2.5}$ precursors. As stated in the proposal, the EPA intends to continue its analysis of the relationship between each precursor and ambient $PM_{2.5}$ concentrations.

Comment: Some commenters questioned the EPA's interpretation of the 2006 court decision in *South Coast Air Quality Mgmt. Dist. v. EPA* [223] as precluding higher major source thresholds because the court determined that NSR provisions, including major source thresholds, were control requirements subject to anti-backsliding provisions of the statute. The commenter argued that the South Coast decision did not address setting a major source threshold for a precursor pollutant that is as stringent as, or more stringent than, the major source threshold for

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[222] H.R. Rep. 101-490.
[223] *South Coast Air Quality Mgmt. Dist. v. EPA*, 472 F.3d 882, 900-902 (D.C. Cir. 2006) (*South Coast* decision).

the pollutant when the pollutant is directly emitted. The commenter stated the statutory provision on which the court in *South Coast* relied [CAA section 172(e)] is applicable on its face only when the EPA relaxes the NAAQS, which the commenter claimed is not relevant to the current situation here, where the EPA has promulgated progressively more stringent NAAQS for PM.

Response: CAA section 189(e) requires the control requirements that are applicable to major stationary sources of $PM_{2.5}$ to also apply to major stationary sources of $PM_{2.5}$ precursors. The court in *South Coast* held that the term "controls" under section 172(e) of the CAA includes NSR requirements, and in particular includes major source thresholds specified by the statute.[224] The commenter did not explain why the term "control" in CAA section 189(e) of the statute should be interpreted differently than the term "control" in other parts of the statute. Section 172(e) of the CAA is a provision in subpart 1 of part D of the statute concerning anti-backsliding requirements in designated nonattainment areas. It is reasonable for the EPA to conclude that the term "control" in one part of the statute pertaining to nonattainment area requirements should be interpreted consistent with the use of that term in other provisions of part D pertaining to nonattainment area requirements, particularly where both provisions apply to designated $PM_{2.5}$ nonattainment areas. Thus, consistent with the holding of *South Coast* regarding the definition of "controls," the EPA interprets the use of the term "control requirements" in CAA section 189(e) to require the same major source threshold be applied to $PM_{2.5}$ precursors as applies to direct $PM_{2.5}$ emissions.

The commenter also did not explain, and it is not clear, how a relaxation versus a strengthening of the NAAQS would bear on whether the EPA has authority to set different

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[224] *See South Coast* decision (holding that "controls" in CAA section 172(e) anti-backsliding provision include NSR requirements such as LAER, offset ratios, and major source thresholds).

control requirements (e.g., major source thresholds) for sources of direct emissions of a pollutant and sources of precursors of that pollutant. The EPA notes that Congress, in adding additional particulate matter requirements in subpart 4 of the CAA, decided that more stringent requirements were required to address air quality in particulate matter nonattainment areas. Hence, it would be inconsistent with that intention for Congress to allow higher major source thresholds to apply to sources of precursors than apply to direct $PM_{2.5}$ emissions.

The EPA therefore believes that at this time the most reasonable approach for defining the major source threshold for $PM_{2.5}$ precursors in both Moderate and Serious areas is to use the same threshold that is being defined for direct $PM_{2.5}$ emissions. As explained earlier, the EPA currently has studies underway to better understand the effects of emissions of each precursor on the secondary formation of ambient $PM_{2.5}$ concentrations. However, even if such studies support the commenters' recommendation for higher precursor thresholds, the EPA must consider the potential legal restrictions on setting thresholds for precursors above the statutory requirements for direct emissions of an air pollutant.

c. Significant Emissions Rates (SERs) for $PM_{2.5}$ Precursors.

i. Summary of Proposal.

As noted earlier, stationary sources locating in nonattainment areas are subject to the NNSR permitting requirements to the extent construction at the source qualifies as a major modification with respect to a pollutant for which the area is designated nonattainment. A major modification of a stationary source is defined in the NNSR regulations at 40 CFR 51.165(a)(1)(v)(A) as "any physical change in or change in the method of operation of a major stationary source" that would result in (1) a significant emissions increase of a regulated NSR pollutant, and (2) a significant net emissions increase of that pollutant. The term "significant" is

separately defined at 40 CFR 51.165(a)(1)(x)(A) to mean a rate of emissions specified for each pollutant or precursor for that pollutant. This is known as a significant emissions rate (SER). In the 2008 $PM_{2.5}$ NSR Rule, the EPA defined "significant" for SO_2 and NO_x as $PM_{2.5}$ precursors with an emissions rate of 40 tpy for each precursor.[225] Also, in the preamble to the 2008 $PM_{2.5}$ NSR Rule, the EPA indicated that it would consider 40 tpy of VOC emissions to be "significant" in any state regulating VOC as a $PM_{2.5}$ precursor; however, that significant emissions rate was not codified in any of the NSR regulations because the regulations governing both NNSR and PSD permitting programs provided that VOC was generally presumed not to be a precursor to $PM_{2.5}$. Instead, the agency explained that any state making a demonstration that VOC should be treated as a $PM_{2.5}$ precursor in a particular nonattainment area "would be required to adopt the 40 tpy SER unless it demonstrated that a more stringent SER (lower rate) is more appropriate."[226]

The EPA did not include any changes to the existing SERs for SO_2 and NO_x as $PM_{2.5}$ precursors in the proposal. Nor did we propose a SER for ammonia, citing a lack of adequate technical support. However, the EPA proposed to codify a SER of 40 tpy for VOC in the NNSR permitting regulations. *See* 55 FR 15434.[227] The EPA further stated that, as a result, only the ammonia SER would remain to be defined by each state that needs to control major stationary sources of ammonia as part of its NNSR program for $PM_{2.5}$. While not proposing to revise the

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[225] *See* the *Federal Register* published on May 16, 2008 (73 FR 28321, 28333 and 28334); and existing 40 CFR 51.165(a)(1)(x)(A).
[226] *See* the *Federal Register* published on May 16, 2008 (73 FR 28321 and 28333).
[227] The EPA notes that the 2015 NPRM included some potentially conflicting statements concerning the development of a SER for VOC. First, the preamble indicated that the EPA intended to consider a separate rulemaking to consider proposing new SERs for SO_2 and NO_x, while also proposing individual significant emissions rates for VOC and ammonia. Later in the same preamble, the EPA indicated that it was proposing to add VOC as a precursor with a 40 tpy significant emissions rate, and included regulatory text to show that aspect of the proposal, i.e., proposed 40 CFR 51.165(a)(1)(x)(A).

existing 40 tpy SER values for SO_2 and NO_x, the EPA indicated it believed that, when more data are available, such data might provide a reasonable basis for considering subsequent changes to the SER for each $PM_{2.5}$ precursor for purposes of implementing the $PM_{2.5}$ NAAQS. Moreover, the EPA indicated that a separate rulemaking might be used to propose a new SER for each $PM_{2.5}$ precursor. *See* 80 FR 15434.

ii. Final Rule.

The EPA is finalizing its proposed approach with some changes to the final regulatory language. The final rule amends the definition of "significant" in the NNSR regulations at 40 CFR 51.165(a)(1)(x)(A) to add a SER for VOC. Thus, the revised definition contains individual SERs for direct $PM_{2.5}$ emissions (10 tpy), SO_2 emissions (40 tpy), NO_x emissions (40 tpy), and VOC emissions (40 tpy). The revised definition does not contain a SER for ammonia emissions. Instead, a new subparagraph has been added to the definition of "significant" to require that an implementation plan defines the term for ammonia in cases where sources of ammonia are not otherwise exempted from NNSR control requirements. *See* 40 CFR 51.165(a)(1)(x)(F). Such definition of "significant" for ammonia would need to be established by the state for a particular nonattainment area as part of its SIP submission for NNSR. The EPA's rationale for not establishing an ammonia SER in this action is provided in greater detail in the following section.

iii. Comments and Responses.

Comment: Several commenters generally recommended that the EPA establish higher SERs for the $PM_{2.5}$ precursors. These commenters expressed the need for values that more accurately represented each precursor's relative effect on ambient $PM_{2.5}$ concentrations. One of these commenters stated that in the absence of such higher SERs in the NNSR regulations, the EPA should allow states to demonstrate the appropriateness of a higher SER for a particular

precursor on either a statewide or area-by-area basis in a SIP submission, or through the NNSR program on a case-by-case basis.

Another of the commenters supporting higher significance thresholds for each precursor stated that the CAA's definitions of "major source" and "major emitting facility" trigger the statutory control requirements and its permit requirements for affected sources, but they do not define how much of a pollutant is regulated after the control or permit requirement is triggered by the CAA. The commenter stated that the EPA would appear to have ample authority to require that precursors be regulated based on different thresholds once a major source triggers a particular control or permit requirement, provided there is adequate technical basis for doing so.

Response: The EPA did not propose to reconsider or revise the SERs for SO_2 and NO_x; therefore, revisions to these rates are outside the scope of this action. Even if the EPA were to consider such a revision, it would provide little relief to new or modified sources subject to NSR. Because SO_2 and NO_2 are pollutants for which the EPA has established NAAQS and because NO_x and VOC are precursors for ozone, modifications with emissions increases above the current SERs for SO_2, NO_x or VOC would still be subject to some form of new source review (PSD if the area is attainment for the NAAQS pollutant or nonattainment NSR if the area is nonattainment) even if the SERs for these pollutants as $PM_{2.5}$ precursors were revised to a higher value. Moreover, we do not believe that the statute would permit the EPA or states to adopt a definition of "significant" for purposes of identifying modifications subject to NSR permitting with rates greater than the statutory and regulatory definitions of a major source in a nonattainment area, as defined in CAA section 302(j) for sources locating in $PM_{2.5}$ nonattainment areas classified as Moderate (100 tpy) and as defined in CAA section 189(b)(3) for sources locating in $PM_{2.5}$ nonattainment areas classified as Serious (70 tpy). Consequently,

we do not believe that there would be substantial cost savings to many sources if we were to revise the SERs for these pollutants specifically as $PM_{2.5}$ precursors.

Comment: Some commenters directed specific attention to the definition of a SER for ammonia. These commenters urged the EPA to set a significance threshold for ammonia as soon as possible. These commenters stated that, without a SER, any significant emissions increase greater than zero tons per year would result in a major source review for NNSR.

Some commenters stated that, while the EPA indicates that a SER for ammonia may be developed in a subsequent rulemaking, if that rulemaking is not timely, the state would need to develop a SER for ammonia to reduce the burden on permit applicants and avoid permit issuance delays related to major source applicability determinations and permit development for ammonia and $PM_{2.5}$. Two of the commenters noted that ammonia is used in many industry and source types to control NO_x emissions through the implementation of selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR) control devices. These commenters stated that, without a SER for ammonia, it's very possible that many NNSR reviews will be initiated simply because of any ammonia increase at a major source. To address this problem, some commenters stated that, until the EPA completes its analysis for ammonia, states need the ability to conduct case-by-case reviews for NNSR permits by requiring applicants to submit a technical demonstration showing that emissions of a particular precursor do not significantly contribute to $PM_{2.5}$ levels that exceed the standard in an area, thus exempting the precursor from being controlled by that source.

Some commenters recommended that the EPA propose a SER for ammonia before finalizing the March 23, 2015, proposal and suggested the EPA should also provide definitive guidance for state and local agencies on how to conduct permitting of major sources of ammonia

until a SER is established. Other commenters stated that, at the time the EPA proposes new significant emission rates for precursors, the EPA should also establish the significant emission rate for ammonia. Yet another commenter stated that any precursor analyses conducted by the EPA should be done in close coordination with designated nonattainment areas to reduce duplication of efforts and conflicting outcomes that could in turn lead to more costly impacts on sources and on agencies' limited resources. Finally, some commenters stated that the EPA should at least provide guidance for states to develop a SER for ammonia as a $PM_{2.5}$ precursor.

Response: The EPA did not propose a SER for ammonia and, therefore, this rule does not finalize a SER for ammonia. The EPA's initial plan, as explained in the proposal, was to establish a SER for ammonia in a separate rulemaking, which was also intended to establish significant impact levels (SILs) for Ozone and $PM_{2.5}$ in order to streamline the air quality impact analysis under the PSD permitting program. However, based on the imminent need for the SILs (especially for ozone) for PSD permitting, the agency has decided to issue guidance in lieu of a rulemaking for the PSD-based SILs. After due consideration, the EPA has also concluded that a separate rulemaking solely for the purpose of developing a SER for ammonia is not warranted. We anticipate that very few states will actually need to control source modifications of ammonia under their NNSR programs for $PM_{2.5}$ since (1) stationary sources of ammonia generally are not one of the primary causes of ambient $PM_{2.5}$ concentrations in most $PM_{2.5}$ nonattainment areas, and (2) according to information in the EPA's NEI database, most existing $PM_{2.5}$ nonattainment areas do not have an existing major stationary source of ammonia to which the ammonia SER would be applied to determine whether a proposed modification of such major source would be "major" for ammonia.

Unlike the EPA's PSD regulations, the definition of "significant" in the NNSR

regulations at 40 CFR 51.165 does not include a provision stipulating that, for any pollutant that does not have a listed emissions rate, "any increase" must be considered significant.[228] Therefore, contrary to the concerns of some commenters, the absence of an ammonia SER in the EPA's NNSR regulations at 40 CFR 51.165 does not result in a default "any increase" interpretation of "significant" that must be contained in state NNSR programs. Accordingly, for the above reasons and due to the time, resources and process investment associated with a national rulemaking, the EPA believes that a national rulemaking to develop a SER for ammonia is neither warranted nor effective. As explained above, the EPA is finalizing a provision that requires states that must regulate modified major stationary sources of ammonia to develop and submit a definition of "significant," such as an appropriate SER, for ammonia to be included, subject to the EPA's approval in the state's SIP. *See* 40 CFR 51.165(a)(1)(x)(F). The EPA recommends that states consult with the appropriate EPA Regional Office to develop an ammonia SER as a means of defining "significant" for a particular nonattainment area. As a general rule, the EPA believes that the ammonia SER in a Moderate nonattainment area should be an emissions rate no greater than 100 tpy of ammonia. Any SER that exceeds 100 tpy could not be approved by the EPA because any higher emissions rate would exceed the major source threshold established in the CAA.[229] In the event that a nonattainment area is classified Serious for $PM_{2.5}$, the maximum acceptable ammonia SER would be a rate no greater than 70 tpy in

[228] Compare the definitions of "significant" under the PSD regulations at 40 CFR 51.166(b)(23) and 52.21(b)(23), especially subparagraph (ii), with the NNSR definition at 40 CFR 51.165(a)(x).

[229] The NNSR definition of "major stationary source" includes a provision at 40 CFR 51.165(a)(iv)(A)(*3*) that requires any physical change at an existing source that would not otherwise qualify as a major stationary source if the change would constitute a major stationary source by itself.

accordance with the major source thresholds being finalized in this rule for major stationary sources of direct $PM_{2.5}$ emissions and $PM_{2.5}$ precursors locating in Serious $PM_{2.5}$ nonattainment areas. States that regulate ammonia as a $PM_{2.5}$ precursor should also include a technical justification for the ammonia SER for a nonattainment area that the state includes as a part of its NNSR SIP rules submission for EPA approval.

d. NNSR Applicability Determinations.

i. Summary of Proposal.

In setting SERs and major source thresholds for emissions of direct $PM_{2.5}$ and $PM_{2.5}$ precursors, the EPA explained in the preamble to the proposal that it intended for direct $PM_{2.5}$ emissions and each individual $PM_{2.5}$ precursor to be treated separately for determining the applicability of the NNSR requirements to a proposed new source or modification. The EPA stated that such individual treatment of direct emissions and precursors was consistent with its policy as explained in previous rulemakings. In particular, the preamble to the 2008 $PM_{2.5}$ NSR Rule explained that this applicability interpretation applied to both PSD and NNSR. However, at that time, we did not codify this interpretation in any of the NSR regulations. *See* 73 FR 28231, May 16, 2008, at page 28331. In the proposal, the EPA proposed language in the NNSR regulations at 40 CFR 51.165(a)(2)(i) to explicitly codify the policy.

ii. Final Action.

The EPA is revising the NNSR regulations at 40 CFR 51.165(a)(2)(i) to codify the EPA's policy that direct emissions of a pollutant and emissions of any applicable precursor are to be considered independently for purposes of determining the applicability of the NNSR requirements for $PM_{2.5}$ sources. For example, in order for a source to be subject to the NNSR requirements for $PM_{2.5}$ with respect to NO_x as a $PM_{2.5}$ precursor, the source must be either (1) a

new stationary source that emits or has the potential to emit major amounts of NO_x (new major source of NO_x); or (2) an existing major source of NO_x that proposes to increase its emissions of NO_x by a significant amount and also results in a significant net emissions increase.

iii. Comments and Responses.

Comment: A commenter requested that the EPA clarify in its NSR rules how to evaluate major source applicability for NNSR and PSD with respect to $PM_{2.5}$ precursors. The commenter agreed that major source applicability determinations should be based on individual precursor pollutant emissions, and that different pollutants, including individual precursors, should not be summed to determine applicability for NNSR major stationary source or major modification. The commenter also raised various questions pertaining to how the precursors would trigger major source applicability for other pollutants.

Response: This final rule contains the following statement within the NNSR regulations at 40 CFR 51.165(a)(2)(i), "Different pollutants, including individual precursors, are not summed to determine applicability of a major stationary source or major modification." The commenter's specific precursor-related applicability questions and the EPA's responses are included in the Response to Comment document contained in the Docket for this rulemaking.

e. NNSR Plan Due Dates.

i. Summary of Proposal.

In the proposal, the EPA explained that CAA section 189(a)(2)(B) requires states to submit to the EPA an attainment plan satisfying the applicable requirements within 18 months of an area being designated nonattainment pursuant to a new or revised $PM_{2.5}$ NAAQS. *See* 80 FR 15437. Section 189(a)(1)(A) of the CAA specifically requires that such plans include the NNSR permitting requirements under CAA section 173. Thus, the EPA indicated that states would be

required to submit the applicable NNSR program requirements for $PM_{2.5}$ within 18 months from the effective date of area designations for the 2012 $PM_{2.5}$ NAAQS. *See* 80 FR 15437.

The EPA also noted that the CAA does not specify a deadline for the states' submittal of NNSR program revisions in the event that a Moderate $PM_{2.5}$ nonattainment area is subsequently reclassified as Serious like the CAA establishes a deadline for other plan provisions. Accordingly, the EPA used its gap-filling authority under CAA section 301(a) to propose a similar 18-month deadline, from the effective date of a final reclassification of the area as Serious, for states to submit a plan prescribing the more stringent NNSR requirements required by the statute for Serious areas. However, in light of the fact that such revisions would generally be straightforward to make, and to assure that new major sources and major modifications in the area would be subject to the more stringent NNSR requirements contained in subpart 4 for Serious areas, the EPA sought comments on an alternative 12-month timeframe for submittal of the NNSR plan revisions for Serious areas.

ii. Final Rule.

The EPA is finalizing an 18-month deadline for states to submit plan revisions for NNSR requirements for $PM_{2.5}$ after an area is initially designated to nonattainment (Moderate area) or reclassified to Serious. *See* 40 CFR 51.1003(a) and (b), respectively. As explained elsewhere in this Section VIII of the preamble, plan revisions applicable to areas reclassified as Serious must address the more stringent major source thresholds for direct $PM_{2.5}$ emissions and each applicable $PM_{2.5}$ precursor for Serious areas. With regard to the provisions for precursors, the EPA emphasizes that if the state seeks to continue to exempt a precursor from NNSR control requirements, the state will need to reevaluate any previous finding that resulted in the exclusion of a precursor from the NNSR control requirements on the grounds that the precursor did not

significantly contribute to $PM_{2.5}$ levels that exceed the NAAQS. The requirement at 40 CFR 51.1006(b) calling for a new NNSR precursor demonstration means that, even if the existing NNSR program already includes the necessary provisions for a Serious area classification under a prior approval, a plan revision pertaining to NNSR may still be required to add requirements for a precursor that had previously been exempted, if a new NNSR precursor demonstration does not support continued exemption of that precursor.

The requirements for submitting plan revisions at 40 CFR 51.1003 also provide for situations where an area classified as Serious is subject to CAA section 189(d) for failing to attain the $PM_{2.5}$ NAAQS by the applicable Serious area attainment date. *See* 40 CFR 51.1003(c). The list at § 51.1003(c), which contains attainment plan requirements that must be submitted as plan revisions, does not include the NNSR plan requirements contained at § 51.165. This omission results from the fact that Serious area requirements should have already been included in the NNSR program when the area was originally reclassified as Serious. Hence, there is no explicit requirement to revise the NNSR plan requirements in such cases. However, in light of the fact that states have the opportunity to submit a new NNSR precursor demonstration for each required plan revision (40 CFR 51.1006(b)), there may indeed be a need to revise the NNSR requirements in the event that a previous exemption can no longer be supported by the new NNSR precursor demonstration. Therefore, to the extent that a state's plan previously exempted sources of a precursor from NNSR regulation, a plan revision for a Serious area that fails to attain the $PM_{2.5}$ NAAQS by the applicable Serious area attainment date will need to include a re-evaluated NNSR precursor demonstration if the state wishes to continue to exempt sources of that precursor. Such a plan revision is required to be submitted no later than 12 months from the applicable Serious area attainment date that was previously missed, in accordance with 40 CFR

51.1003(c)(2). The NNSR regulations have also been amended at 40 CFR 51.165(a)(13) to address the need to re-evaluate such a demonstration to exempt a particular precursor from the NNSR requirements for $PM_{2.5}$.

iii. Comments and Responses.

Comment: Some commenters supported allowing states at least 18 months to make the required SIP submission for NNSR. A commenter who supported the longer submission period stated that, although it is easy to write the rule language to make this change, it is likely to be quite difficult to perform the environmental and socio-economic analyses required by state law if the lowering of the threshold for a Serious area does indeed have a significant effect on the building of new or the repowering of existing power plants.

Response: Although the types of revisions needed to an existing NNSR program to address the new subpart 4 requirements for $PM_{2.5}$ are relatively straightforward, the EPA acknowledges that such changes nevertheless often involve related analyses as well as state legislative review and approval. In addition, some states will be submitting NNSR regulations for $PM_{2.5}$ for the first time and, as such, could need more than 12 months to obtain the necessary legislative review and approval. Accordingly, the EPA believes that the most reasonable approach for establishing the plan due date for revised plans for $PM_{2.5}$ is to establish an 18-month deadline for submission of plans both upon initial designation to nonattainment for a particular $PM_{2.5}$ standard and upon any subsequent reclassification to Serious.

2. Offset Ruling at 40 CFR part 51 Appendix S

In this final rule, as explained later, the EPA is making the following revisions for $PM_{2.5}$ in the Emission Offset Interpretive Ruling (40 CFR part 51, Appendix S): (a) amending the definition of "regulated NSR pollutant" with regard to $PM_{2.5}$ precursors; (b) amending the

definition of "major stationary source" with regard to major sources of direct $PM_{2.5}$ emissions and $PM_{2.5}$ precursors in Serious areas; and (c) amending the definition of "significant" with regard to identifying major modifications of sources of $PM_{2.5}$ precursors.

a. Appendix S definition of "regulated NSR pollutant"—$PM_{2.5}$ precursors.

i. Summary of Proposal.

The definition of "regulated NSR pollutant" contained in Appendix S at section II.A.31(ii)(*b*)(*2*) has, to date, only required regulation of SO_2 as a $PM_{2.5}$ precursor for states relying on Appendix S to issue permits to sources locating in $PM_{2.5}$ nonattainment areas. The EPA proposed to revise the definition in Appendix S of "regulated NSR pollutant" to also require regulation of NO_x as a $PM_{2.5}$ precursor.[230] The EPA noted that this proposed approach would ensure that states using the permitting requirements contained in Appendix S to issue permits to major new and modified sources in $PM_{2.5}$ nonattainment areas will regulate the same precursors that have been subject to regulation in states that have already adopted NNSR requirements for $PM_{2.5}$ based on the 2008 $PM_{2.5}$ NSR Rule.

The EPA also proposed an alternative approach based on similar logic that would initially require only SO_2 and NO_x to be regulated as $PM_{2.5}$ precursors, while later phasing in VOC and ammonia after states have prepared and the EPA has had sufficient time to evaluate any pending precursor demonstrations. *See* 80 FR 15436-37. Finally, the EPA also sought comments on an

[230] The EPA notes that in the preamble to the proposal, it was stated that the EPA proposed to add NO_x as a $PM_{2.5}$ precursor at section II.A.31.(iii)(*b*) of Appendix S. This was an incorrect reference, which should have read "section II.A.31.(ii)(*b*)." This final rule cites the correct section for the affected portion of the definition of "regulated NSR pollutant," where NO_x is being added as a $PM_{2.5}$ precursor.

alternative to require the immediate regulation of all four scientific $PM_{2.5}$ precursors (SO_2, NO_x, VOC and ammonia) in Appendix S.

ii. Final Rule.

The EPA is amending Appendix S in this final rule to provide for the immediate regulation of SO_2 and NO_x as regulated NSR pollutants (specifically as $PM_{2.5}$ precursors) and for the subsequent conditional phasing in of VOC and ammonia as regulated NSR pollutants ($PM_{2.5}$ precursors) on the date 24 months from the effective date of the nonattainment designation in each area. The EPA was persuaded by the comments received expressing concerns that states may delay NNSR SIP development to instead rely on a less-inclusive Appendix S for NNSR permitting if only SO_2 and NO_x were regulated.

The alternative proposal featuring the phase-in approach balances the opportunity for states to demonstrate in the short-term that certain precursors need not be regulated with the need to ensure that the appropriate precursors are controlled in a manner consistent with the CAA. NNSR is unique among the nonattainment area requirements in that sources seeking a construction permit must comply with NNSR requirements for a particular pollutant as soon as an area is designated nonattainment for that pollutant and not some months or years later, when the EPA formally approves a state plan and the sources comply with the remaining plan provisions. With respect to precursors in particular, this means that new and modified major sources of direct $PM_{2.5}$ or a regulated $PM_{2.5}$ precursor would be subject to NNSR regulation upon the effective date of the area designation to nonattainment. If the EPA required the immediate regulation of all four scientific $PM_{2.5}$ precursors in Appendix S, states issuing permits pursuant to those provisions during the interim SIP development period would need to require regulation of certain precursors that the state may later be able to demonstrate through a SIP submission do not

significantly contribute to $PM_{2.5}$ levels that exceed the standard in a particular area. As state plans making such a NNSR precursor demonstration are not due until 18 months after the effective date of the area designation, and as the statute allows the EPA up to 18 months to act on such submissions, sources seeking permits to locate in such areas during this interim period might for several years be subject to more stringent controls than necessary to address $PM_{2.5}$ nonattainment in that area.

The EPA is also cognizant, however, that some states have relied on Appendix S to conduct NNSR permitting well beyond the statutory SIP development period. In such cases, it would be inequitable if states could indefinitely rely on Appendix S that requires little to no regulation of some of the scientific $PM_{2.5}$ precursors when other states are fulfilling their statutory duty to submit a SIP revision addressing all $PM_{2.5}$ precursors. In particular, states that have submitted NNSR SIPs addressing $PM_{2.5}$ requirements for the 1997 and 2006 standards have to date regulated SO_2 and NO_x as $PM_{2.5}$ precursors. These SIP provisions will continue to apply with respect to any areas designated nonattainment as to the 2012 standard in those states until the states submit SIP revisions to address the 2012 NAAQS, including provisions necessary to comply with the precursor requirements in CAA section 189(e). States either continuing to rely on Appendix S by virtue of a nonattainment area designation under a prior $PM_{2.5}$ standard or states newly relying on Appendix S by virtue of a nonattainment area designation under the 2012 standard have to date only been required to regulate SO_2 as a regulated NSR pollutant (specifically as a $PM_{2.5}$ precursor).

In order to balance these competing interests and concerns, the EPA has determined in this final rule to revise Appendix S in order to require that any state relying on Appendix S initially regulate both SO_2 and NO_x as regulated NSR pollutants ($PM_{2.5}$ precursors) for NNSR

permits, thereby aligning the requirements of Appendix S with the prevailing requirements of SIP-approved NNSR permitting provisions for $PM_{2.5}$ in other states. *See* Appendix S, section II.A.31.(ii)(*b*)(*2*). Further, the final rule provides that VOC and ammonia will be phased in as regulated NSR pollutants ($PM_{2.5}$ precursors) according to a prescribed schedule based on existing and future nonattainment area designations for $PM_{2.5}$, unless the EPA has determined, prior to the scheduled phase-in, that the state submitted a complete proposed NNSR program for $PM_{2.5}$ that includes a NNSR precursor demonstration. The EPA believes it is reasonable not to require regulation of sources of VOC and ammonia in Appendix S during the interim SIP development period because we expect that, in many cases, states will submit SIPs that include as part of their proposed NNSR rules for $PM_{2.5}$ a NNSR precursor demonstration indicating that they do not need to regulate new major stationary sources and major modifications of ammonia (and in some cases of VOC) under their NNSR programs in order to provide for attainment of the $PM_{2.5}$ NAAQS.

Under the phase-in schedules being finalized in Appendix S, permits issued by states under the requirements in Appendix S will not be required to address VOC and ammonia as regulated NSR pollutants ($PM_{2.5}$ precursors) until the state has had an opportunity to show that, as part of a proposed NNSR program for $PM_{2.5}$, sources of a particular precursor does not significantly contribute to $PM_{2.5}$ concentrations that exceed the standard in a given nonattainment area. If a state submits such a NNSR precursor demonstration as to either VOC or ammonia as part of a complete SIP submission that includes the state's proposed NNSR program for $PM_{2.5}$, the state would not be required to regulate the applicable precursor pursuant to the provisions of Appendix S, unless the EPA reviews that proposed NNSR program for $PM_{2.5}$ and the NNSR precursor demonstration and either determines that the SIP submission is incomplete or

disapproves both the NNSR program and the NNSR precursor demonstration. Thus, the regulation of VOC and ammonia as regulated NSR pollutants ($PM_{2.5}$ precursors) pursuant to Appendix S will occur in three circumstances. First, in the absence of a plan submission that includes the appropriate NNSR precursor demonstration, VOC and ammonia will be phased in as regulated precursors pursuant to Appendix S 24 months after the effective date of area designations for $PM_{2.5}$. This will prevent states that fail to make a complete plan submission from continuing to rely on Appendix S to regulate only SO_2 and NO_x as $PM_{2.5}$ precursors indefinitely. Second, if the EPA determines that the portion of the SIP containing the NNSR precursor demonstration submitted by the state is incomplete within the time allowed under CAA section 110(k)(1)(B), all precursors must be regulated upon EPA's determination of incompleteness or by the prescribed phase-in date, whichever date is later. The EPA believes it is important to condition the phase-in of VOC and ammonia regulation on the completeness of the SIP submission in order to deter the submission of plans that do not meet certain minimum criteria simply to avoid the regulation of these additional precursors.[231] Finally, if the EPA disapproves both the proposed NNSR program for $PM_{2.5}$ and the accompanying NNSR precursor demonstration, the relevant precursors will be phased in to be regulated under Appendix S as of the effective date of the disapproval or by the prescribed phase-in date, whichever date is later.[232]

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[231] The minimum requirements for evaluating the completeness of such submissions can be found in 40 CFR Part 51, Appendix V, Criteria for Determining the Completeness of Plan Submissions.

[232] If the EPA disapproves a state's NNSR precursor demonstration but the state's NNSR program is otherwise approvable, the EPA may partially disapprove the NNSR SIP provisions for failure to properly regulate sources of the relevant precursor and otherwise partially approve the program. Upon the partial approval of a state's NNSR program, Appendix S will no longer be the applicable set of requirements by which NNSR permits are to be issued by the state. Thus, the phase-in of the relevant precursor will only occur in the event that the EPA both disapproves

The EPA chose this 24-month period for phase-in of VOC and ammonia as $PM_{2.5}$ precursors in accordance with (1) the requirement under CAA section 189(a)(2)(B) of subpart 4 that plan revisions for $PM_{2.5}$ attainment plans be submitted to the EPA within 18 months of area designations, and (2) the requirement under CAA section 110(k)(1)(B) that the EPA determine no later than six months after the date by which a state is required to submit a SIP whether a state has made a submission that meets the minimum completeness criteria established per CAA section 110(k)(1)(A).[233] In order to provide an appropriate balance between the EPA's interests in providing states with the opportunity to develop precursor demonstrations prior to regulation of those precursors and in encouraging states to submit SIPs in a timely manner, the EPA believes it is reasonable to align the conditional phase-in of VOC and ammonia as regulated NSR pollutants ($PM_{2.5}$ precursors)with the statutory timeframe for states to make SIP submissions addressing precursor regulation for NNSR and for the EPA to evaluate whether a state has made a complete submission. Thus, if by this 24-month deadline, a state has not submitted a precursor demonstration that VOC and/or ammonia need not be regulated, which has

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the NNSR program for $PM_{2.5}$ and the state's NNSR precursor demonstration. The partial disapproval of a state's NNSR program with respect to the regulation of a precursor will obligate the EPA to promulgate a federal implementation plan (FIP) pursuant to CAA section 110(c)(1) to address the regulation of that precursor within 2 years of the disapproval unless the Administrator approves a state plan or plan revision correcting the deficiency. The disapproval will also trigger the application of sanctions pursuant to CAA section 179(a) unless the state corrects the deficiency within 18 months.

[233] CAA section 110(k)(1)(B) specifically requires the Administrator to evaluate the completeness of a SIP submission within 60 days of receipt, but no later than 6 months after the date by which the SIPs were due. If the Administrator does not affirmatively evaluate the completeness of the SIP within that time period, the statute provides that the SIP shall be deemed complete by operation of law 6 months after receipt.

been determined to be complete by the EPA or deemed complete by the operation of law by this 24-month deadline, Appendix S will require regulation of these precursors going forward.

The EPA has specifically included the 6-month period for EPA's completeness review because we believe it is important to discourage states from submitting SIPs that do not meet the minimum completeness criteria found in 40 CFR Part 51, Appendix V. Conditioning the phase-in on a completeness review will not only encourage states to make timely SIP submissions addressing the NNSR requirements, but also ensure that those submissions contain the minimum information necessary to enable the Administrator to determine whether the SIP complies with the statute. If a state with a designated $PM_{2.5}$ nonattainment area that is currently relying on Appendix S makes a submission addressing NNSR program requirements, including a NNSR precursor demonstration, within 18 months of the designation (as required by CAA section 189(a)(2)(B)), either EPA must evaluate the submission for completeness within 6 months or the SIP will become complete by operation of law, pursuant to CAA section 110(k)(1)(B). The latest date that a timely-submitted implementation plan would be determined to be complete by the EPA or deemed complete by operation of law is 24 months from the effective date of the $PM_{2.5}$ nonattainment area designation. In other words, in the absence of EPA action to evaluate completeness, a state that submits a timely SIP addressing NNSR and including a NNSR precursor demonstration can be confident the submission will become complete by operation of law by the 24-month conditional phase-in date, and such states will not be required to regulate the precursor addressed by its demonstration (VOC or ammonia) in the $PM_{2.5}$ nonattainment area pursuant to Appendix S during the period of EPA's review of the SIP. States that submit untimely SIPs, after the 18-month SIP submission deadline, cannot rely on the SIP becoming complete by operation of law before the 24-month conditional phase-in date. If the EPA has not

acted to evaluate the completeness of the state's untimely SIP by the 24-month conditional phase-in, control of VOC and ammonia are automatically phased in for the $PM_{2.5}$ nonattainment area under Appendix S, regardless of whether such SIP submission might later be determined complete, whether by EPA or by operation of law. Thus, if a state submits an untimely SIP addressing NNSR for a particular $PM_{2.5}$ nonattainment area, including an NNSR precursor demonstration, such state can only avoid the conditional phase-in of VOC and ammonia control pursuant to Appendix S if the EPA affirmatively determines the submission to be complete by 24 months from the date of the area designation. In such circumstances, states are encouraged to coordinate with the appropriate EPA Regional Office.

The timing of the phase-in for a particular area will depend upon the effective date of the designation to nonattainment for $PM_{2.5}$. Because this rule establishes requirements that apply in both present and future nonattainment areas, the regulations address the timing of the precursor phase-in both for areas already designated nonattainment for $PM_{2.5}$ and for areas that may be so designated in the future.

For any existing nonattainment area that was first designated nonattainment for $PM_{2.5}$ effective on or before April 15, 2015 (which includes areas designated for the 1997, 2006 and 2012 $PM_{2.5}$ NAAQS), VOC and ammonia will be required to be controlled as $PM_{2.5}$ precursors for any NNSR permit issued on or after April 15, 2017 (24 months from the date of area designations for the 2012 $PM_{2.5}$ NAAQS), unless the state has submitted before the phase-in date a complete SIP revision that includes the state's proposed NNSR program for $PM_{2.5}$ and a NNSR precursor demonstration showing that VOC, ammonia, or both do not contribute significantly to $PM_{2.5}$ concentrations that exceed the standard in a given $PM_{2.5}$ nonattainment area, consistent with the requirements of 51.1003, in which case the control of the precursors addressed by the

submitted demonstration will not be required to be controlled at the 24-month mark. *See* Appendix S, section II.A.31.(ii)(*b*)(*3*). In order to satisfy this condition, such demonstration must be submitted in the form of a SIP revision and must either be determined to be complete by the EPA or deemed to be complete by operation of law pursuant to the provisions in CAA section 110(k)(1)(B).

Although areas were designated nonattainment for the 1997, 2006, and 2012 standards at different times, the EPA believes it is reasonable to apply the same phase-in date for all areas designated nonattainment as of the date of the designations for the 2012 standard. Area designations for the 2012 $PM_{2.5}$ standards were finalized on April 15, 2015, and plans addressing the nonattainment area requirements as to that standard are due October 15, 2016. Therefore, states evaluating their NNSR programs in light of the subpart 4 requirements with respect to the 2012 standard will have some, if limited, opportunity to consider the requirements of this rule and EPA's technical guidance before submitting a plan revision addressing the statutory and regulatory requirements. By contrast, area designations for the 1997 standards were finalized many years ago. As to those areas, after the court's decision in *NRDC v. EPA*, the EPA promulgated a rule setting a deadline of December 31, 2014, for states to submit any attainment plan provisions that may be necessary to satisfy the subpart 4 requirements. 79 FR 31566 (June 2, 2014) at 31570. This included any submissions necessary to address NNSR permitting such as the CAA section 189(e) requirement that states regulate all $PM_{2.5}$ precursors absent a demonstration that such regulation is unnecessary. This deadline superseded previous SIP submission deadlines initially established by application of the subpart 1 requirements. As that deadline has passed, if the EPA were to apply the 24-month phase-in policy strictly, states relying upon Appendix S to issue NNSR permits in these areas would have had to commence

regulating VOC and ammonia as $PM_{2.5}$ precursors in June 2015—6 months after the SIP submission deadline. The EPA believes it is reasonable to provide states that have areas designated nonattainment with respect to the 1997 and 2006 $PM_{2.5}$ standards with at least some limited opportunity to consider the requirements of this rule and EPA's technical guidance and submit a plan revision addressing the statutory and regulatory requirements before the state will be required to regulate sources of VOC and ammonia in such areas. Accordingly, the EPA finds that it is reasonable to subject all areas designated nonattainment for any $PM_{2.5}$ standard as of April 15, 2015, to the same Appendix S requirements in this final rule.

For any area that is first designated nonattainment for any $PM_{2.5}$ NAAQS after April 15, 2015 (that is, the area was not already designated nonattainment with respect to another $PM_{2.5}$ NAAQS immediately prior to such date), any state relying on Appendix S to issue a NNSR permit on or after the effective date of such area designation must require control of SO_2 and NO_x as regulated NSR pollutants ($PM_{2.5}$ precursors). Beginning on the date 24 months from the effective date of such area designation, a state relying on Appendix S to issue a NNSR permit must also require control of VOC and ammonia as regulated NSR pollutants ($PM_{2.5}$ precursors) in that area, unless by that date the state has submitted a complete SIP revision that includes the state's proposed NNSR program for $PM_{2.5}$ and an accompanying NNSR precursor demonstration that sources of VOC, ammonia, or both ammonia do not contribute significantly to the $PM_{2.5}$ concentrations that exceed the standard in the $PM_{2.5}$ nonattainment area. *See* Appendix S, section II.A.31.(ii)(*b*)(*4*). As explained earlier, such demonstration must be submitted as part of a SIP revision that is determined to be complete by the EPA or deemed to be complete by operation of law by the conditional phase-in date.

As noted earlier, the second phase-in provision applies to $PM_{2.5}$ nonattainment areas that were not already designated as nonattainment for $PM_{2.5}$ immediately prior to that date. If at the time of a new designation, an area was already designated nonattainment as to any prior $PM_{2.5}$ NAAQS, and Appendix S applied and continues to apply for NNSR permitting with respect to that existing nonattainment area, all $PM_{2.5}$ precursors would likely already be required to be regulated in accordance with a prior phase-in schedule prescribed under Appendix S for that existing nonattainment designation. In such cases, all precursors would continue to be subject to regulation for NNSR permitting under Appendix S, even as to the new nonattainment designation. That is, once Appendix S definition of regulated NSR pollutant applies to all $PM_{2.5}$ precursors in a given nonattainment area, it is not possible to later defer regulation of any precursors so long as the state continues to rely on Appendix S for NNSR permitting in that area. Once the state submits a SIP including an NNSR program and any appropriate NNSR precursor demonstration, and the EPA approves the SIP, Appendix S will no longer apply for the issuance of NNSR permits for $PM_{2.5}$.

iii. Comments and Responses.

Comment: Several commenters generally supported the EPA's preferred approach in the proposal that would require only SO_2 and NO_x as $PM_{2.5}$ precursors for NNSR permits issued pursuant to Appendix S. One commenter supported the alternative approach to phase in VOC and ammonia as $PM_{2.5}$ precursors, while another commenter expressly opposed the EPA's preferred approach and the phase-in alternative, claiming that any approach that does not regulate all four scientific precursors of $PM_{2.5}$ is contrary to CAA subpart 4 and unlawful.

Commenters supporting the preferred approach did not believe that it was appropriate to require NSR permitting during an interim period for sources that may be exempted from control

requirements if a state can demonstrate that these sources do not contribute significantly to nonattainment in a particular area. These commenters stated that, since most, if not all, areas will not be able to demonstrate that SO_2 and NO_x do not contribute significantly to nonattainment levels of $PM_{2.5}$, the EPA's approach to include these two precursors in the interim is reasonable.

One commenter who supported the EPA's alternative approach to phase in VOC and ammonia as $PM_{2.5}$ precursors stated that there are many unanswered questions and the science is not adequate to justify regulation of secondary formation precursors at this time. The commenter further stated that Appendix S should initially require sources issued a NNSR permit to control only SO_2 and NO_x as $PM_{2.5}$ precursors, and only later, after a prescribed date (e.g., the date on which SIP revisions based on subpart 4 requirements are due), require sources to control emissions of VOC and ammonia, if applicable.

A commenter who opposed any approach that did not immediately require the control of all four scientific precursors of $PM_{2.5}$ stated that such approaches are unlawful and must be rejected. The commenter stated that the EPA must require immediate regulation of all four precursors, as only that alternative follows the plain language of the CAA and the *NRDC* decision. The commenter objected to the presumptive exemption of VOC and ammonia emissions as being identical to the "gamesmanship" that both Congress intended to curtail with subpart 4, and that the D.C. circuit found illegal in the *NRDC* decision. The commenter stated that the scope of the statutory definition, and consequently the application of subpart 4, did not change when the EPA subdivided PM_{10} by regulation. The commenter stated that only this option would conform Appendix S to the requirements of subpart 4, and in so doing, align Appendix S with forthcoming state obligations to harmonize the $PM_{2.5}$ portions of their SIPs with the obligations of subpart 4. The commenter stated that this approach would encourage

states to submit SIPs in a timely fashion, rather than to rely on Appendix S for an extended period of time. The commenter stated that, in contrast, were the EPA to adopt illegally lax provisions into Appendix S, states might delay submitting replacement SIPs, particularly in those parts of the country with high VOC or ammonia precursor emissions.

Response: The EPA took each of these comments into consideration in concluding that the proposed phase-in alternative is a reasonable approach that balances competing factors regarding the regulation of $PM_{2.5}$ precursors for NNSR permits issued pursuant to Appendix S. While CAA section 189(e) generally requires state plans to control all $PM_{2.5}$ precursors, it also affords states an opportunity to demonstrate that a particular precursor does not contribute significantly to levels of $PM_{2.5}$ that exceed the standard in a $PM_{2.5}$ nonattainment area. Section 189(e) of the CAA clearly addresses how $PM_{2.5}$ precursors must be regulated in the state's plan, but the statute does not address exactly when precursors are to be regulated pursuant to the NNSR requirements of Appendix S prior to the submission of the state's plan. As noted earlier, the NNSR provisions are unique among the nonattainment area requirements in that sources are required to address NNSR immediately upon the effective date of an area's designation to nonattainment, rather than upon the EPA's approval of the state's SIP, which could be as much as 3 years after the nonattainment area designation (e.g., states have 18 months to submit attainment plans and the EPA may have up to 18 months from the date of the SIP submission to finalize action on such plans). Given this ambiguity in the statute and the unique application of the NNSR requirements, we believe a reasonable and balanced approach to the Appendix S requirements would allow states a time-limited period to submit a NNSR program for $PM_{2.5}$ that includes a NNSR precursor demonstration that sources of a precursor do not contribute significantly to $PM_{2.5}$ levels in a $PM_{2.5}$ nonattainment area. The time limit will discourage states

from unreasonably delaying regulation of such precursors where otherwise required to do so.

Moreover, the EPA believes it is reasonable to construct the Appendix S provisions regulating $PM_{2.5}$ precursors in a manner that closely follows the way in which the precursors are being regulated in most state NSR programs based on EPA's 2008 NSR regulation. For areas that were designated attainment or unclassifiable prior to a new nonattainment designation, the PSD permit program was in effect and required that, at minimum, SO_2 and NO_x be regulated as $PM_{2.5}$ precursors. It is therefore reasonable to ensure that those precursors continue to be regulated as part of the interim NNSR permit program via Appendix S. Moreover, in areas that were already designated nonattainment for a pre-existing $PM_{2.5}$ NAAQS, and an approved plan containing NNSR permit requirements for $PM_{2.5}$ is in effect, sources are required to control SO_2 and NO_x as $PM_{2.5}$ precursors, as required under the 2008 $PM_{2.5}$ NSR rule, until the EPA approves a SIP revision conforming those NNSR programs to the requirements of CAA subpart 4. Similarly, the EPA believes it is reasonable to not require the regulation of VOC and ammonia immediately upon designation of an area to nonattainment because it result in more regulation in newly designated nonattainment areas relying on Appendix S than is required in most states with approved programs. All states will ultimately be required to address the regulation of ammonia and VOC at the time their state plans are due or, failing submission of such plan by states relying on Appendix S to issue NNSR permits, Appendix S will require such regulation.

The phase-in schedule contained in this final rule requires that VOC and ammonia be phased in as $PM_{2.5}$ precursors 24 months from the effective date of area designations for $PM_{2.5}$; however, states will not be required to control VOC and ammonia as $PM_{2.5}$ precursors as part of a NNSR permit issued under Appendix S so long as the state submits a plan revision that includes the state's NNSR program for $PM_{2.5}$ and a NNSR precursor demonstration to show that

sources of a precursor does not contribute significantly to $PM_{2.5}$ levels that exceed the standard in a $PM_{2.5}$ nonattainment area. *See* Appendix S, sections II.A.31.(ii)(*b*)(*3*) and (*4*).

In initially requiring sources to control SO_2 and NO_x as regulated NSR pollutants ($PM_{2.5}$ precursors), states that rely on Appendix S to issue NNSR permits generally will implement NNSR consistent with those states that issue NNSR permits for $PM_{2.5}$ under the NNSR program in their approved SIP. The EPA believes that it is reasonable and appropriate to assure this consistency in the issuance of NNSR permits during the interim period when all states must revise their plans to address the 2012 $PM_{2.5}$ NAAQS. Moreover, this final rule allows states to submit a SIP revision that contains a NNSR precursor demonstration showing that new major stationary sources and major modifications of either SO_2 or NO_x should be exempted where an analysis of increases in emissions of the particular precursor shows that sources of the precursor do not contribute significantly to $PM_{2.5}$ levels that exceed the standard in the $PM_{2.5}$ nonattainment area. In this case, the opportunity to exempt sources of either SO_2 or NO_x as $PM_{2.5}$ precursors is addressed in the NNSR rules at 51.165. *See* 40 CFR 51.165(a)(13). Hence, when the EPA approves a state's plan revision containing the NNSR program for $PM_{2.5}$ and a NNSR precursor demonstration showing an insignificant contribution, a new major stationary source or major modification of either SO_2 or NO_x as $PM_{2.5}$ precursors will not be required to be controlled going forward in a NNSR permit issued to address $PM_{2.5}$, which permit would then be issued in accordance with the NNSR requirements in the approved plan, rather than the NNSR requirements in Appendix S.

With regard to the commenter's concern that states might delay submitting NNSR programs as part of their $PM_{2.5}$ SIPs if Appendix S regulates only SO_2 and NO_x, the phase-in approach in this final rule will negate any incentive that a state may have to delay submitting an

NNSR program for $PM_{2.5}$ addressing the CAA section 189(e) requirement to regulate all four precursors, absent a showing that such regulation is unnecessary. In fact, the phase-in requirement should actually encourage states to timely submit their NNSR programs for $PM_{2.5}$. Given CAA section 189(e) does not directly speak to its application to the Appendix S requirements, the EPA believes this approach represents a reasonable and equitable application of the CAA section 189(e) requirements regarding regulation of $PM_{2.5}$ precursors to states applying Appendix S.

b. Appendix S Definition of "major stationary source" in Serious $PM_{2.5}$ Nonattainment Areas.

i. Summary of Proposal.

The EPA proposed to amend Appendix S by revising the definition of "major stationary source" to include a separate $PM_{2.5}$ major source threshold applicable to new major stationary sources and major modifications of direct $PM_{2.5}$ and $PM_{2.5}$ emissions in $PM_{2.5}$ nonattainment areas reclassified as Serious. This proposed amendment to Appendix S was similar to one that was proposed to the definition of "major stationary source" in 40 CFR 51.165. [234]

ii. Final Rule.

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[234] The preamble language did not explicitly state that it was our intent to revise the definition in Appendix S to add separate major source thresholds for direct $PM_{2.5}$ emissions and $PM_{2.5}$ precursors, in the same way that earlier we had proposed to revise the definition of "major stationary source" in the NNSR regulations at 40 CFR 51.165. Instead, the preamble referred only to a change to the definition of "major stationary source" at proposed section II.A.4(i)(*a*)(*7*) of Appendix S, where a 70 tpy threshold for direct $PM_{2.5}$ emissions is addressed. The proposed regulatory text did, however, also include new section II.A.4(i)(*a*)(*8*) of Appendix S, which adds a 70 tpy major source threshold for emissions of individual $PM_{2.5}$ precursors. Despite this omission in the preamble discussion of the proposed changes to Appendix S, we believe that commenters had ample opportunity to comment on the actual changes being made to the definition of "major stationary source" in Appendix S because the intended change concerning emissions of $PM_{2.5}$ and $PM_{2.5}$ precursors was accurately provided in the regulatory text.

In this final rule, the EPA is amending the definition of "major stationary source" in Appendix S to include 70 tpy major source thresholds for direct $PM_{2.5}$ emissions and individual $PM_{2.5}$ precursors, applicable in Serious $PM_{2.5}$ nonattainment areas.[235] *See* Appendix S sections II.A.4(i)(*a*)(*7*) and (*8*), respectively. As described earlier, applicability of the NNSR requirements to a source will be determined individually for direct $PM_{2.5}$ emissions and for emissions of individual $PM_{2.5}$ precursors. For example, if a new source locating in a Serious $PM_{2.5}$ nonattainment area would emit 70 tpy of the $PM_{2.5}$ precursor SO_2, it will be considered a major source of $PM_{2.5}$ (with respect to the SO_2 precursor) and will be subject to the NNSR requirements for $PM_{2.5}$ with regard to the SO_2 emissions. However, if the same proposed source does not emit 70 tpy of direct $PM_{2.5}$ emissions or another $PM_{2.5}$ precursor, the emissions increase of direct $PM_{2.5}$ or the other precursor will not be subject to control based on the NNSR requirements for $PM_{2.5}$. It should also be noted that VOC and ammonia are subject to the phase-in schedule described in the definition of "regulated NSR pollutant" in the NNSR regulations at Appendix S, section II.A.31.(ii)(*b*)(*2*).

iii. Comments and Responses.

As explained in Section VIII.B.1.b of this preamble, commenters addressing the proposed major source threshold of 70 tpy for sources of $PM_{2.5}$ and its precursors locating in Serious areas had mixed responses, particularly with regard to the appropriate thresholds for precursors. Most

[235] The EPA also notes that the definition of "major stationary source" in Appendix S is being revised in this rule at section II.A.4(i)(a) of Appendix S, which currently ends with the phrase "according to paragraphs II.A.4(i)(a)(*1*) through (*6*) of this ruling." By proposing to add new paragraphs (*7*) and (*8*), this phrase will be revised to read "according to paragraphs II.A.4(i)(a)(*1*) through (*8*) of this ruling." The phrase is being modified accordingly in this final rule.

of the comments applied generally to the proposed thresholds in 40 CFR 51.165 and Appendix S. The EPA's responses to these comments are provided in that earlier section of the preamble.

Comment: One commenter, however, recommended that during the SIP transition period (and while the EPA continues its analysis of the precursor relationships to $PM_{2.5}$), the EPA should allow states to make a case-by-case permitting demonstration to use higher major source thresholds for precursors for NNSR permit reviews.

Response: As explained previously, in light of the ongoing precursor impact studies as well as concerns about the legality of setting higher major source thresholds than those specified in the CAA, the EPA believes it is most reasonable to establish a 70 tpy major source threshold under Appendix S for sources of direct $PM_{2.5}$ emissions and each $PM_{2.5}$ precursor locating in Serious nonattainment areas.

c. Significant Emissions Rates (SERs) in Appendix S—$PM_{2.5}$ Precursors.

i. Summary of Proposal.

As explained earlier, the EPA proposed as its preferred approach to add NO_x as a $PM_{2.5}$ precursor in the Appendix S definition of "regulated NSR pollutant." Accordingly, the EPA also proposed to amend the definition of "significant" at section II.A.10(i) of Appendix S to establish a SER of 40 tpy for NO_x as a $PM_{2.5}$ precursor. The Appendix S definition already contains a SER for SO_2 as a $PM_{2.5}$ precursor at 40 tpy of SO_2. The EPA did not explicitly propose to include SERs for VOC and ammonia in Appendix S as part of the preferred approach; however, the EPA's proposed alternative approach to phase in VOC and ammonia as $PM_{2.5}$ precursors at a later date would inherently necessitate adding SERs for those two additional precursors in the event that an alternative approach was ultimately selected for the final rule.

ii. Final Action.

The EPA is revising the definition of "significant" in Appendix S at section II.A.31(ii)(*b*)(*2*) to provide SERs for NO_x and VOC as $PM_{2.5}$ precursors, consistent with its decision to conditionally phase in regulation of all four $PM_{2.5}$ precursors 24 months from the date of redesignation. The individual SERs for NO_x and VOC as $PM_{2.5}$ precursors, being added to the existing SER for SO_2 as a $PM_{2.5}$ precursor, are each defined as 40 tpy of the respective precursor, consistent with the SERs provided in the revised definition of significant in 40 CFR 51.165.

The EPA is not adding a SER for ammonia (as a $PM_{2.5}$ precursor) in the Appendix S definition of "significant" in this action. Consistent with the EPA's approach for allowing states to define "significant" for ammonia in their NNSR rules, and for the reasons explained in Section VIII.B.1.*c* of this preamble, the EPA will allow states that issue NNSR permits pursuant to the requirements in Appendix S to define "significant" with respect to ammonia in a particular area in each NNSR permit issued pursuant to Appendix S. The state should provide a technical justification to support the definition of "significant" for ammonia, including any SER developed by the state for a particular nonattainment area, and such justification should be included in the administrative record for each proposed permit. The state also has the discretion to define "significant" with respect to ammonia as a $PM_{2.5}$ precursor in those cases where it is determined that the proposed modification will result in insignificant increases of ammonia and the source will therefore not be required to obtain a major NNSR permit. In such cases, the state and the source should also document the technical justification for determining the source impacts will be insignificant, including any SER developed by the state for a particular nonattainment area, whether such documentation occurs in the administrative record for a minor source permit, a nonapplicability determination, or some other form in the state or source's records. The state

should consult with the appropriate EPA Regional Office for assistance in developing an appropriate definition of "significant" for ammonia as a $PM_{2.5}$ precursor in each permit or for each nonattainment area.

iii. Comments and Responses.

The comments regarding the proposed addition of SERs for NO_x and VOC emissions as $PM_{2.5}$ precursors in the NNSR definition of "significant" were summarized in Section VIII.B.1.c of this preamble. Those comments applied generally to the NNSR regulations at 40 CFR 51.165 and Appendix S. The reader is referred to that earlier section of the preamble to review the comments and the EPA's responses to them.

Comment: Some commenters seemingly addressing NNSR under Appendix S recommended that the EPA include a provision allowing states to make case-by-case determinations to use higher SERs for precursors for NNSR permits issued before the SIP is effective. The commenter stated that the precursor SERs are too low and do not realistically reflect the effect that each precursor has on ambient $PM_{2.5}$ concentrations.

Response: The EPA believes that the commenter's concern is partially addressed by the fact that, in using Appendix S to review NNSR permit applications, neither VOC nor ammonia will need to be controlled as $PM_{2.5}$ precursors if the state has submitted to the EPA a complete SIP submission that includes the state's NNSR program for $PM_{2.5}$ and a NNSR precursor demonstration showing that a particular precursor does not contribute significantly to ambient concentrations of $PM_{2.5}$ in the nonattainment area, even though the plan revision containing such demonstration has not yet been formally approved. Until the SIP development period has passed and unless the state has failed to submit such a demonstration, the state issuing permits pursuant to Appendix S will not be required to regulate VOC or ammonia as $PM_{2.5}$ precursors. If a state

has not submitted a SIP including the state's NNSR program for $PM_{2.5}$ and a NNSR precursor demonstration for either VOC or ammonia, sources of these precursor emissions must be controlled as $PM_{2.5}$ precursors in any NNSR permit issued pursuant to Appendix S beginning on the prescribed phase-in date.

C. Transition Provisions for Major Source Permitting in $PM_{2.5}$ Nonattainment Areas

The EPA did not propose any transition provisions for NNSR permit applications in either 40 CFR 51.165 or Appendix S that would expressly grandfather pending PSD or NNSR permit applications for proposed new and modified major stationary sources from newly established NNSR permit requirements applicable to $PM_{2.5}$ nonattainment areas. In the final 2012 PM NAAQS Rule, the EPA provided a grandfathering provision only for certain PSD permit applications with respect to the revised $PM_{2.5}$ standard. Historically, the EPA has not provided for the grandfathering of any permit applications from new NNSR requirements or from application of existing NNSR requirements to new or revised standards. Nevertheless, in promulgating the 2012 PM NAAQS Rule, the EPA received unsolicited comments advocating for grandfathering of NNSR requirements for the revised standard. Thus, while explaining the reasons why it did not believe that NNSR grandfathering was appropriate, the EPA sought comments in the proposal on possible circumstances where grandfathering similar to the PSD grandfathering provision established for the 2012 $PM_{2.5}$ standard might be appropriate with respect to changes made regarding NNSR requirements for $PM_{2.5}$ in this rulemaking.

Several comments received during the 2012 PM NAAQS rulemaking recommended that the EPA establish a grandfathering provision for NNSR as was proposed for the PSD program. A subset of these commenters recommended that PSD permit applications be grandfathered from the NNSR requirements for the revised 2012 $PM_{2.5}$ standard by establishing an effective date for

designations 1 year after initial publication in the *Federal Register*. The commenters presumably believed that by delaying the effective date of any new nonattainment designations for the primary annual $PM_{2.5}$ NAAQS, sources with pending PSD permit applications could continue to be reviewed and permits issued under the PSD requirements rather than the NNSR requirements for $PM_{2.5}$.

The EPA explained at the time that the obligation to adopt new provisions under a state's NNSR program will not apply with regard to the revised NAAQS until such time as an area is designated nonattainment, and beginning on the effective date of the new area designations for $PM_{2.5}$, proposed new and modified major sources would be required to meet the applicable NNSR requirements for $PM_{2.5}$.[236] Also, the EPA does not agree with the commenters' recommendation that the effective date of the area designation be delayed by 1 year because this approach, similar to delaying the effective date of the NAAQS, would also delay the implementation of the attainment plan and defer the important health benefits associated with the revised NAAQS. In the same preamble, the EPA proposed a schedule for promulgating area designations for $PM_{2.5}$ that involved the maximum allowable 2-year period from the signature date of the 2012 $PM_{2.5}$ NAAQS, as provided in CAA section 107(d)(1)(B). The CAA allows for

[236] The applicable NNSR requirements would be either the NNSR requirements for $PM_{2.5}$ in the state's existing approved SIP or the requirements found at 40 CFR part 51 Appendix S, when a state's approved SIP does not currently include NNSR requirements for $PM_{2.5}$. States will be required to submit to the EPA for approval SIP revisions containing the amended NNSR program requirements for $PM_{2.5}$ contained in the final $PM_{2.5}$ NAAQS implementation, but those additional requirements will not apply in states with approved SIPs that include NNSR requirements for $PM_{2.5}$ until the EPA approves the SIP revision. *See* 78 FR 3086 (January 15, 2013), at page 3263.

a 1-year extension for such designations, but only if there is insufficient information to enable such designations to be made.[237]

In response to the EPA's request for comments in the proposal, commenters recommended that the EPA clarify the $PM_{2.5}$ NSR grandfather policy to explain that both PSD and NNSR permit applications are exempt from the precursor and planning requirements being finalized in this rulemaking. In particular, the commenters recommended that the EPA establish a $PM_{2.5}$ NSR transition policy that delays regulation of the scientific precursors of $PM_{2.5}$ under any NSR program until the EPA has a better understanding of how these precursors contribute to nonattainment and could deteriorate air quality. One of the commenters indicated that a transitional policy is especially important until the EPA completes a rulemaking on a SER for ammonia. One of the commenters recommended that the EPA should allow for the grandfathering of pending PSD permit applications, similar to the PSD grandfathering provision for the 2012 $PM_{2.5}$ NAAQS, for sources that will not be issued a permit until after the effective date of the nonattainment designation under certain conditions. This commenter stated that CAA section 165(c), which forms part of the EPA's basis for grandfathering in the PSD context, should also apply to NNSR permit decisions.

The EPA does not find a compelling reason to grandfather pending NNSR permit applications for which a permit has not yet issued once the new NNSR requirements—primarily affecting the control of $PM_{2.5}$ precursors—become effective. The EPA believes that it is reasonable to require that a new or modified major stationary source control emissions of $PM_{2.5}$ precursors where such emissions contribute significantly to $PM_{2.5}$ levels in the nonattainment

[237] *See* 78 FR 3249 at page 3250.

area. If such precursor emissions are not effectively controlled, and offset by reductions in existing emissions, an increased burden could be placed on the overall attainment plan to address those emissions in order to attain the NAAQS in a timely manner.

While the final rule contains no general grandfathering provision, this final rule does provide a phase-in process for states relying on Appendix S for purposes of issuing NNSR permits for $PM_{2.5}$. Appendix S will require the immediate regulation of SO_2 and NO_x as $PM_{2.5}$ precursors, the regulation of VOC and ammonia as $PM_{2.5}$ precursors will only be required under certain conditions and on a delayed timetable. *See* Appendix S, revised section II.A.31.(ii)(*b*)(*2*)-(*5*). The precursor provisions in Appendix S should alleviate some of the commenter's concerns that the regulation of additional precursors will be required immediately upon the effective date of this final rule. Instead, the phase-in schedule for the regulation of VOC and ammonia will permit states the opportunity allowed by CAA section 189(e) to demonstrate that a particular precursor need not be subjected to control in a particular nonattainment area. Accordingly under the interim NNSR requirements in Appendix S, a state will not be required to begin immediate regulation of precursors for which sources will likely be exempted from the regulations upon review of a state's NNSR SIP submission. Similarly, where the state has a previously approved NNSR program for $PM_{2.5}$, the existing requirements for controlling precursors would continue to apply until the new SIP revisions required by this rule, including new precursor control requirements, are approved. Thus, such states would not be required to immediately regulate any $PM_{2.5}$ precursors not already required by the approved plan during the interim plan development period.

With regard to grandfathering PSD permit applications, we do not interpret the CAA to allow for the issuance of a PSD permit in an area that is designated nonattainment. The CAA

requires proposed major stationary sources and major modifications to meet major NSR permitting requirements that apply on the basis of the area's designation.[238] Accordingly, the EPA's longstanding interpretation of the CAA is that a proposed new major stationary source or major modification must satisfy the appropriate major NSR requirements (PSD vs. NNSR) for a particular pollutant that are in effect in a given area on the date that a permit is issued to the source, rather than the requirements that may have been applicable when the permit application was submitted.[239]

IX. Other Requirements and Considerations for $PM_{2.5}$ Nonattainment Areas

A. Waivers Under CAA Section 188(f)

1. Statutory Requirements and Existing Guidance

a. Summary of Proposal. The proposal summarized the statutory requirements and existing guidance for CAA section 188(f), which provides that, "the Administrator may, on a case-by-case basis, waive any requirement applicable to any Serious Area… where the Administrator determines that anthropogenic sources of PM_{10} do not contribute significantly to the violation of the PM_{10} standard in the area." In addition it provides that, "the Administrator may also waive a specific date for attainment of the [PM_{10}] standard where the Administrator determines that nonanthropogenic sources of PM_{10} contribute significantly to the violation of the PM_{10} standard in the area." The agency requested comment on whether the existing guidance in the Addendum is appropriate when implementing the current and any future $PM_{2.5}$ NAAQS.

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[238] *Compare* CAA section 165(a) (permitting requirements for sources locating in attainment and unclassifiable areas) *with* CAA sections 172(c)(5) and 173 (permitting requirements for sources locating in nonattainment areas).

[239] *See* Memorandum from John S. Seitz, Director, EPA Office of Air Quality Planning and Standards, on March 11, 1991, titled "New Source Review (NSR) Transitional Guidance," Attachment p. 6, sent to Regional Air Division Directors.

b. Final Rule. The EPA is hereby affirming its reliance on the interpretation of CAA section 188(f) described in the Addendum for purposes of implementing the $PM_{2.5}$ NAAQS.[240] For example, the Addendum lays out a series of questions that should be answered before the waiver provisions can be applied, including questions related to the types of sources that may be considered anthropogenic and nonanthropogenic, the specific conditions under which the attainment date for a Moderate area may be waived, and the time period that would apply to an attainment date waiver. The EPA believes that these questions, and the general guidance provided in the Addendum on how to evaluate the answers, provide adequate direction to the EPA and to states potentially interested in seeking waivers for certain $PM_{2.5}$ NAAQS nonattainment areas. The EPA therefore refers interested states to the waiver guidance contained in the Addendum for more detail on how the agency interprets CAA section 188(f) for purposes of implementing the $PM_{2.5}$ NAAQS.

c. Comments and Responses. The comments received on this section are addressed in the Response to Comments document found in the docket for this action.

2. Relationship Between the CAA section 188(f) Waiver Provisions and the EPA's Exceptional Events Rule

a. Summary of Proposal. The proposal summarized the relationship between the 188(f) waiver provisions and the EPA's Exceptional Events Rule. On March 22, 2007, the EPA promulgated the "Treatment of Data Influenced by Exceptional Events; Final Rule" (72 FR 13560), known as the Exceptional Events Rule, pursuant to the 2005 amendment of CAA section 319.[241] The

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[240] *See* 59 FR 42003-42008, August 16, 1994.

[241] Section 319 of the CAA, as amended by section 6013 of the Safe Accountable Flexible Efficient-Transportation Equity Act: A Legacy for Users (SAFE-TEA-LU) of 2005, required the

Exceptional Events Rule provides a mechanism by which the EPA can concur with a state's request to exclude from regulatory decisions air quality monitoring data determined by the EPA to have been affected by exceptional events.[242] The Exceptional Events Rule applies to all the NAAQS pollutants, including $PM_{2.5}$. CAA section 188(f) and the Exceptional Events Rule provide separate mechanisms by which states can seek to have event-influenced monitoring data excluded from certain regulatory requirements or decisions associated with the PM NAAQS implementation process, under appropriate circumstances.

b. Final Rule. The EPA did not make any revisions to its interpretation of the relationship between the CAA section 188(f) waiver provisions and EPA's Exceptional Events Rule.

The Exceptional Events Rule addresses elevated emissions from specific events that influence monitored air quality concentrations. The EPA's regulations at 40 CFR 50.1(j) define an "exceptional event" as one that "affects air quality, is not reasonably controllable or preventable, is an event caused by human activity that is unlikely to recur at a particular location or a natural event, and is determined by the Administrator in accordance with 40 CFR 50.14 to be an exceptional event." Further, 40 CFR 50.1(j) explicitly provides that exceptional events do "…not include stagnation of air masses or meteorological inversions, a meteorological event involving high temperatures or lack of precipitation, or air pollution relating to source

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EPA to propose and promulgate regulations governing the review and handling of air quality monitoring data influenced by exceptional events.

[242] References to "air agencies" are meant to include state, local and tribal air agencies responsible for implementing the Exceptional Events Rule.

noncompliance." At 40 CFR 50.1(k), the EPA's regulations define a "natural event" as an event in which human activity plays little or no direct causal role to the event in question.[243]

Air quality monitoring data that the EPA determines to have been influenced by an exceptional event under the procedural steps, substantive criteria, and schedule specified in the Exceptional Events Rule may be excluded from regulatory decisions such as initial area designations decisions and decisions associated with implementing the $PM_{2.5}$ NAAQS such as clean data determinations, evaluation of attainment demonstrations, and discretionary or mandatory reclassifications of nonattainment areas from Moderate to Serious. While the EPA may agree with a state's request to exclude event-influenced air quality monitoring data from regulatory decisions, these regulatory actions require the EPA to provide an opportunity for public comment on the claimed exceptional event and all supporting data prior to the EPA taking final agency action.

If wildfire is a potential contributor to exceedances of the NAAQS and exceptional events, the EPA urges state and local agencies to coordinate with the land management agencies, as appropriate, in developing plans and appropriate public communications regarding public safety and reducing exposure. This action can directly help states meet their Exceptional Events

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[243] The EPA will generally consider human activity to have played little or no *direct* role in causing emissions of the dust generated by high wind for purposes of the regulatory definition of "natural event" if contributing anthropogenic sources of the dust are reasonably controlled at the time of the event, regardless of the amount of dust coming from these reasonably controlled anthropogenic sources, and thus the event could be considered a natural event. In such cases, the EPA believes that it would generally be a reasonable interpretation of its regulations to find that the anthropogenic source had "little" direct causal role. If anthropogenic sources of windblown dust that are reasonably controllable but that did not have those reasonable controls applied at the time of the high wind event have contributed significantly to a measured concentration, then the event would not be considered a natural event. *See* preamble to the Exceptional Events Rule at 72 FR 13560 (March 22, 2007), footnote 11 on page 13566.

Rule obligation whereby "states must provide public notice, public education, and must provide for implementation of reasonable measures to protect public health when an event occurs." When wildfire impacts are significant in a particular area, states and communities may be able to lessen the impacts of wildfires by working collaboratively with land managers and land owners to employ various mitigation measures including taking steps to minimize fuel loading in areas vulnerable to fire.

The EPA notes that there could be some potential overlap between the application of the Exceptional Events Rule and CAA section 188(f) because the conditions necessary for the Administrator to make a determination under CAA section 188(f) – i.e., the lack of a significant anthropogenic contribution to a violation -- may overlap with conditions that may be considered an exceptional event, particularly a natural event, which by definition represents a non-anthropogenic contribution. The EPA believes that this potential for overlap can best be addressed by considering the applicability of the Exceptional Events Rule and CAA section 188(f) in sequence. Thus, the EPA recommends that states first consider whether the monitored air quality data on specific days were influenced by an exceptional event. If the state requests and the EPA agrees with this request and determines that the monitored air quality data should be excluded from consideration in regulatory decisions, then using the provisions in the Exceptional Events Rule could address the situation adequately, and there would be no need for a CAA section 188(f) waiver. If the state determines that, even with the exclusion of the event-influenced data, the waiver provisions of CAA section 188(f) may also be applicable, then the EPA can evaluate that question based on the remaining data that are representative for the area in question. Given that section 188(f) has rarely been invoked, a state wishing to pursue this provision should work closely with its EPA Regional Office.

c. Comments and Responses. Comments: Some commenters urged the EPA to clarify the two-step approach. Some commenters recommended that the EPA refrain from directing the sequence and allow states to decide which of these provisions should apply in the specific circumstances that they are addressing, consistent with the commenter's overall recommendation that the EPA give states the maximum flexibility in developing $PM_{2.5}$ SIPs. Some commenters urged the EPA to provide guidance to the states on when this two-step approach would be appropriate, and when it would be inappropriate. Commenters did not want implementation planning to follow the EPA's exceptional events justification model in which there is great variability among the EPA regions. Commenter encouraged the EPA to work to ensure that $PM_{2.5}$ implementation plan reviews are subject to similar requirements in all EPA regions with clarifying language in the final guidance to ensure some level of national consistency.

Response: The EPA agrees with the first comment that, rather than the EPA "directing the sequence," the affected state and the appropriate EPA regional office should discuss the scenario and the affected data to determine whether the Exceptional Events Rule or CAA section 188(f) is the most appropriate mechanism. This decision would be made on a case-by-case basis considering the specific, relevant facts. In most cases, if the monitored air quality data satisfy the requirements of the Exceptional Events Rule, then applying these provisions would likely provide additional regulatory flexibilities beyond those that CAA section 188(f) would provide. However, regardless of whether the data in question meet or do not meet the requirements of the Exceptional Events Rule (e.g., because the exceptional events definition is not met in that the data do not constitute an exceedance or violation of the NAAQS or because other Exceptional Events rule criteria are not met), the waiver provisions in CAA section 188(f) could apply.

The EPA recognizes the implementation challenges associated with the 2007 Exceptional Events Rule and recently proposed revisions to this rule to address certain substantive issues raised by state, local and tribal co-regulators and other stakeholders since promulgation of the rule and to increase the administrative efficiency of the Exceptional Events Rule criteria and process (80 FR 72840, November 20, 2015). The public comment period on this rule closed on February 3, 2016. The EPA will consider timely comments provided to the Exceptional Events Rule docket as we finalize the revisions to this rule.

B. Conformity Requirements

1. Requirements That Apply to Both Transportation Conformity and General Conformity

a. Background on Transportation and General Conformity. Conformity is required under CAA section 176(c) to ensure that federal actions are consistent with ("conform to") the purpose of the SIP. Conformity to the purpose of the SIP means that federal activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS or interim reductions and milestones. Conformity applies to areas that are designated nonattainment, and those nonattainment areas redesignated to attainment with a CAA section 175A maintenance plan after 1990 ("maintenance areas").

The EPA's Transportation Conformity Rule (40 CFR 51.390 and part 93, subpart A) establishes the criteria and procedures for determining whether transportation activities conform to the SIP. These activities include adopting, funding or approving transportation plans, transportation improvement programs (TIPs) and federally supported highway and transit projects. The EPA first promulgated the Transportation Conformity Rule on November 24, 1993 (58 FR 62188), and subsequently published several amendments. For example, the EPA published a final rule on July 1, 2004 (69 FR 40004) that provided conformity procedures for

state and local agencies under the 1997 $PM_{2.5}$ NAAQS, among other things. On May 6, 2005 (70 FR 24280) the EPA published a final rule that addressed transportation conformity requirements for $PM_{2.5}$ precursors. [244] The EPA published another final rule on March 24, 2010 (75 FR 14260) that addressed additional requirements for the 2006 $PM_{2.5}$ NAAQS. Finally, the EPA published a final rule on March 14, 2012 (77 FR 14979) that restructured portions of the transportation conformity rule so that they would clearly apply to nonattainment and maintenance areas for the new and revised NAAQS, including the 2012 $PM_{2.5}$ NAAQS. All of these rules apply to the current $PM_{2.5}$ NAAQS including the 1997 $PM_{2.5}$ NAAQS, the 2006 24-hour $PM_{2.5}$ NAAQS and the 2012 primary annual $PM_{2.5}$ NAAQS and will apply to future $PM_{2.5}$ NAAQS. For further information on transportation conformity rulemakings, policy guidance and outreach materials, *see* the EPA's Web site at *http://www3.epa.gov/otaq/stateresources/transconf/index.htm*. The EPA issued transportation conformity guidance related to the implementation of the 2012 primary annual $PM_{2.5}$ NAAQS in November 2015. The guidance is available at *http://www3.epa.gov/otaq/stateresources/transconf/documents/420b15091.pdf*.

With regard to general conformity, the EPA first promulgated general conformity regulations in November 1993 (40 CFR part 51, subpart W and 40 CFR part 93, subpart B). Subsequently, the EPA finalized revisions to the general conformity regulations on April 5, 2010. (75 FR 17254-17279) The general conformity program ensures that federal actions not covered by the transportation conformity rule will not interfere with the SIP. General conformity also fosters communications between federal agencies and state/local air quality agencies, provides for public notification of and access to federal agency conformity determinations and allows for air

[244]This final rule was not challenged, nor was it affected by the January 2013 DC Circuit Court decision requiring the EPA to implement the $PM_{2.5}$ NAAQS pursuant to subpart 4 of the CAA.

quality review of individual federal actions. More information on the general conformity program is available at *www.epa.gov/airquality/genconform/*

b. Conformity in the Proposed Rule. The EPA did not propose any changes to the transportation conformity program as part of the current action. Nevertheless, to provide clarity in applying those regulations, the EPA is providing affected parties with information on when conformity must be implemented after nonattainment areas are designated for a new or revised $PM_{2.5}$ NAAQS. At this time the EPA is using the 2012 $PM_{2.5}$ NAAQS as an example. The agency is also discussing how it plans to make the transition from demonstrating conformity for the 1997 annual $PM_{2.5}$ NAAQS to the 2012 primary annual $PM_{2.5}$ NAAQS because this transition is unique in that the 1997 annual $PM_{2.5}$ NAAQS was retained as a secondary NAAQS. Finally, we proposed a change to the general conformity rule that addresses *de minimis* levels that apply to federal actions in $PM_{2.5}$ areas. The information presented here is consistent with existing conformity regulations and statutory provisions that are not addressed by this $PM_{2.5}$ implementation rulemaking. Affected parties would include state and local transportation and air quality agencies, metropolitan planning organizations (MPOs), and all federal agencies including the U.S. Department of Transportation, the U.S. Department of Defense, the U.S. Department of Interior and the U.S. Department of Agriculture.

c. Applicability of Transportation and General Conformity to Areas Designated Nonattainment for the 2012 Primary Annual $PM_{2.5}$ NAAQS. Transportation and general conformity apply 1 year after the effective date of nonattainment designations for a new or revised $PM_{2.5}$ NAAQS including the 2012 primary annual $PM_{2.5}$ NAAQS, April 15, 2016. This is because CAA section 176(c)(6) provides a 1-year grace period from the effective date of initial designations for any new NAAQS before transportation and general conformity apply in areas

newly designated nonattainment for a specific pollutant and the NAAQS. With regard to general conformity, the EPA's April 2010 revisions to its general conformity regulations (*see* 75 FR 17277, April 5, 2010) apply the same 1-year grace period for the purposes of general conformity.

With regard to transportation conformity, the conformity grace period applies to all areas designated nonattainment for a new or revised $PM_{2.5}$ NAAQS including the 2012 primary annual $PM_{2.5}$ NAAQS. The requirements differ depending on whether the nonattainment area includes any part of an MPO area designated under 23 U.S.C. 134 or is an isolated rural area. Within 1 year after the effective date of the initial nonattainment designation for a given pollutant and the NAAQS, the MPOs and DOT must make a transportation conformity determination with regard to that pollutant and standard for all of the metropolitan transportation plans and TIPs in the nonattainment area. The conformity requirements for surrounding "donut areas," including the application of the 1-year conformity grace period, are generally the same as those for metropolitan areas.[245] For the purposes of the implementation of the 2012 $PM_{2.5}$ NAAQS, MPOs and any adjacent donut areas in a 2012 $PM_{2.5}$ nonattainment area must continue to meet conformity requirements during the grace period for any other applicable NAAQS, including the 1997 annual $PM_{2.5}$ NAAQS and the 2006 24-hour $PM_{2.5}$ NAAQS. If, at the end of the grace period for the 2012 annual $PM_{2.5}$ NAAQS, the MPO and DOT have not made a transportation plan and TIP conformity determination for that NAAQS, the area would be in a conformity "lapse." During a conformity lapse, only certain projects can receive federal funding or approvals to proceed. The practical impact of a conformity lapse will vary from area to area.

[245] For the purposes of transportation conformity, a "donut" area is the geographic area outside a metropolitan planning area boundary, but inside a designated nonattainment or maintenance area boundary that includes an MPO (40 CFR 93.101).

Finally, the 1-year conformity grace period also applies to project level conformity determinations.

Isolated rural nonattainment and maintenance areas are areas that do not contain or are not part of an MPO (40 CFR 93.101). Transportation conformity requirements for isolated rural nonattainment and maintenance areas can be found at 40 CFR 93.109(g). The CAA section 176(c)(6) 1-year grace period for newly designated nonattainment areas applies to isolated rural areas. Therefore, 1 year after the effective date of the initial nonattainment designation for a given pollutant and the NAAQS, conformity requirements with regard to that pollutant and standard would apply in any nonattainment areas that are isolated rural areas. Per the transportation conformity rule, an isolated rural area would be required to make a transportation conformity determination only at the point when an applicable transportation project needs funding or approval. This project level conformity determination may occur significantly after the 1-year grace period has ended. *See* the EPA's transportation conformity guidance related to the implementation of the 2012 primary annual $PM_{2.5}$ NAAQS for further information on how the EPA has implemented this conformity grace period in metropolitan, donut and isolated rural areas. The guidance is available at *http://www3.epa.gov/otaq/stateresources/transconf/documents/420b15091.pdf*.

d. *Applicability of Transportation and General Conformity With Regard to the 1997 Annual $PM_{2.5}$ NAAQS, Which was Retained as a Secondary NAAQS.* In the December 2012 PM NAAQS final rule, the EPA established a new health-based *primary* annual $PM_{2.5}$ NAAQS of 12.0 $\mu g/m^3$. In that same action the EPA retained the 1997 annual $PM_{2.5}$ NAAQS of 15.0 $\mu g/m^3$ as a *secondary* NAAQS to protect against certain welfare effects. In the 1997 $PM_{2.5}$ designations rule (70 FR 944), the EPA designated areas nonattainment for both the 1997 primary and

secondary annual $PM_{2.5}$ NAAQS (which have identical levels of 15.0 $\mu g/m^3$). Designations for the 2012 primary annual $PM_{2.5}$ NAAQS were made in January 2015 (80 FR 2206) and were effective on April 15, 2015. This action did not make any changes to the designations that apply for the 1997 secondary annual $PM_{2.5}$ standard. Therefore, at this time, all areas designated nonattainment in 2005 for the 1997 annual $PM_{2.5}$ standard are considered as having been designated nonattainment for both the 1997 primary annual $PM_{2.5}$ NAAQS and for the 1997 secondary annual $PM_{2.5}$ NAAQS. Similarly, for any 1997 $PM_{2.5}$ nonattainment areas that have approved redesignation requests for attainment of the 1997 $PM_{2.5}$ NAAQS, the redesignation applies to both the primary and secondary standards of the 1997 $PM_{2.5}$ NAAQS. A discussion of how transportation and general conformity apply in this situation follows.

CAA section 176(c)(5) requires compliance with transportation and general conformity only in: (1) nonattainment areas and (2) areas that have been redesignated to attainment and are required to develop a maintenance plan under CAA section 175A.

CAA section 175A(a), in turn, establishes the requirements that must be fulfilled by nonattainment areas in order to be redesignated to attainment. That section only requires that nonattainment areas for the *primary* standard submit a plan addressing maintenance of the *primary* NAAQS in order to be redesignated to attainment; it does not require nonattainment areas for secondary NAAQS to submit maintenance plans in order to be redesignated to attainment. *See* 42 U.S.C. 7505a(a) Therefore, since conformity does not apply in areas that have been redesignated without CAA section 175A maintenance plans, the EPA concludes that transportation and general conformity do not apply in areas that have been redesignated to attainment for any secondary NAAQS, such as the 1997 secondary annual $PM_{2.5}$ NAAQS.

Elsewhere in this final rule, the EPA is finalizing one of the proposed options for revoking the 1997 primary annual $PM_{2.5}$ NAAQS, which has been replaced by the more health protective 2012 primary annual $PM_{2.5}$ NAAQS. As discussed in detail in Section X of this preamble, the EPA is finalizing the option that calls for revoking the 1997 primary annual $PM_{2.5}$ NAAQS in areas that have always been designated attainment for that NAAQS and in areas that have been redesignated to attainment for that NAAQS. As a result, after the effective date of the revocation, areas that have been redesignated to attainment for the 1997 annual $PM_{2.5}$ NAAQS (i.e., maintenance areas for the 1997 annual $PM_{2.5}$ NAAQS) will not be required to make transportation or general conformity determinations for the 1997 annual $PM_{2.5}$ NAAQS. The revocation would leave nonattainment designations in place for the 1997 annual NAAQS for areas that have not yet been redesignated to attainment for that NAAQS. The EPA will continue to redesignate areas to attainment as states submit redesignation requests for the remaining nonattainment areas. Any area that is designated as nonattainment for the 1997 annual NAAQS at the time of the initial revocation would have to continue to make transportation and general conformity determinations for that NAAQS until such time that they are redesignated to attainment for that NAAQS.

For any area that has been redesignated to attainment for the 1997 annual $PM_{2.5}$ NAAQS (i.e., a maintenance area for the 1997 annual $PM_{2.5}$ NAAQS) and is not designated nonattainment for the 2012 primary annual $PM_{2.5}$ NAAQS, the relevant planning organization will not have to make conformity determinations for any annual $PM_{2.5}$ NAAQS after the effective date of the revocation of the 1997 primary annual $PM_{2.5}$ NAAQS because, as discussed earlier, the CAA does not require maintenance areas for secondary NAAQS to make conformity determinations and the 1997 primary annual NAAQS will have been revoked. This means that, after the

effective date of the revocation, areas redesignated to attainment for the 1997 annual $PM_{2.5}$ NAAQS will no longer be required to make metropolitan transportation plan, TIP, or project-level transportation conformity determinations for that NAAQS. In addition, federal agencies will no longer be required to make conformity determinations for that NAAQS. Areas that remain designated nonattainment for the 1997 annual $PM_{2.5}$ NAAQS will continue to make metropolitan transportation plan, TIP, and project-level conformity determinations for that NAAQS and federal agencies will be required to continue to make general conformity determinations for that NAAQS in these areas until such time as these areas attain that NAAQS and are redesignated to attainment (i.e., until the effective of the redesignation to attainment). Table 3 shows which types of areas are required to make conformity determinations for either the 1997 or 2012 annual $PM_{2.5}$ NAAQS after the revocation of the 1997 primary annual NAAQS is effective.

Table 3. Where Is Conformity Required for the Various $PM_{2.5}$ NAAQS After the Revocation of the 1997 Primary Annual $PM_{2.5}$ NAAQS?

Attainment Status	1997 Primary and Secondary Annual NAAQS	1997 24-hour NAAQS	2006 24-hour NAAQS	2012 Primary Annual NAAQS
Nonattainment	X	X	X	X
Redesignated to Attainment (i.e., Maintenance)		X	X	X

e. *Impact of Implementation of a New or Revised $PM_{2.5}$ NAAQS (such as the 2012 $PM_{2.5}$ NAAQS) on a State's Transportation and/or General Conformity SIP.* As long as the EPA does not make specific changes to its transportation or general conformity regulations states should not need to revise their transportation and/or general conformity SIPs. The EPA is not making any changes to its transportation conformity regulations and no transportation conformity SIP revisions are necessary. The only change that the EPA is making to its general conformity

regulations is to change the *de minimis* levels in its general conformity regulations as discussed in Section IX.B.2.a of this preamble. States with a general conformity SIP should evaluate the need to revise those SIPs in light of this change. States with new nonattainment areas may also need to revise conformity SIPs in order to ensure the state regulations apply in any newly designated areas.

In the event that a nonattainment designation causes transportation conformity to apply for the first time in a state[246], such a state is required by the statute and the EPA regulations to submit a SIP revision that addresses three specific transportation conformity requirements that address consultation procedures and written commitments to control or mitigation measures associated with conformity determinations for transportation plans, TIPs or projects. (40 CFR 51.390) Additional information and guidance can be found in the EPA's "Guidance for Developing Transportation Conformity State Implementation Plans" (*http://www3.epa.gov/otaq/stateresources/transconf/policy/420b09001.pdf*).

2. Additional General Conformity Requirements for $PM_{2.5}$ Nonattainment Areas

a. De minimis Emission Levels for Direct $PM_{2.5}$ and its Precursors. Federal actions estimated to have an annual net emissions increase less than the *de minimis* levels established in the general conformity regulations are not required to demonstrate conformity under those regulations. For direct $PM_{2.5}$ and its precursors (SO_2, NO_x, VOC and ammonia), the existing *de minimis* emission levels are set forth in the EPA's general conformity regulations at 40 CFR 93.153(b)(1). Those levels were based on the definition of a major stationary source for nonattainment NSR programs. The EPA believes it is appropriate to continue this practice for

[246] This is not currently the case for the areas designated for the 2012 $PM_{2.5}$ NAAQS, but the EPA is noting this in the event that future designations result in this situation.

implementing the current and any future $PM_{2.5}$ NAAQS. However, because the definition of precursors currently in the general conformity regulations at 40 CFR 93.153(b)(1) does not reflect the rebuttable presumptions for certain $PM_{2.5}$ precursors, the EPA is finalizing changes to these conformity provisions to make them consistent with the agency's revised precursor requirements. Specifically, the current definition of precursors for $PM_{2.5}$ in the general conformity regulations does not reflect the rebuttable presumptions for VOC and ammonia. To address the lack of rebuttable presumptions for VOC and ammonia the EPA is revising the tables in 40 CFR 93.153(b)(1) and (2) remove "(if determined to be a significant precursor)" from the entries in the tables that apply to VOC and ammonia emissions as $PM_{2.5}$ precursors. It also does not reflect the subpart 4 definitions for "major source" and "major stationary source" that apply for Serious $PM_{2.5}$ nonattainment areas. Therefore, the EPA is finalizing changes to the $PM_{2.5}$ precursor *de minimis* levels currently in 40 CFR 93.153(b)(1) to make those levels consistent with the statutory requirements for major stationary source thresholds under subpart 4 and any relevant changes finalized in Section III of this preamble. Comments received on this proposed change were supportive. The EPA is setting the *de minimis* levels that apply to direct $PM_{2.5}$ and $PM_{2.5}$ precursors for $PM_{2.5}$ nonattainment areas for purposes of general conformity as identified in Table 4.

Table 4. General Conformity *De minimis* Emission Levels for $PM_{2.5}$ Precursors

Type of Emission	Tons/Year in Moderate $PM_{2.5}$ nonattainment areas and all maintenance areas	Tons/Year in Serious $PM_{2.5}$ nonattainment areas
Direct emissions	100	70
SO_2	100	70
NO_x	100	70
VOC	100	70
Ammonia	100	70

b. Implementation Considerations for the General Conformity Program. The EPA did not propose any other revisions to the general conformity regulations and is not taking any additional final actions in this rule. However, as areas develop SIPs for the 2012 and future $PM_{2.5}$ NAAQS, the agency recommends that state and local air quality agencies work with federal agencies with large facilities (*e.g.*, commercial airports, ports and large military bases) that are subject to the general conformity regulations to establish an emissions budget for those facilities in order to facilitate future conformity determinations under the conformity regulations. Such a budget could be used by federal agencies in determining conformity or identifying mitigation measures if the budget level is included and identified in the SIP.

In a few cases, tracts of land under federal management may also be included in nonattainment and maintenance area boundaries. The role of fire in these areas should be assessed and emissions budgets developed in concert with those federal land management agencies. In such areas the EPA encourages states to consider in any baseline, modeling and SIP attainment inventory used and/or submitted to include emissions expected from projects subject to general conformity, including emissions from wildland fire that may be reasonably expected in the area. Where appropriate, states may consider developing plans for addressing wildland fuels in collaboration with land managers and owners. Information is available from DOI and USDA Forest Service on the ecological role of fire and on smoke management programs and basic smoke management practices.[247]

[247] USDA Forest Service and Natural Resources Conservation Service, Basic Smoke Management Practices Tech Note, October 2011, *http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046311.pdf.*

C. Clean Data Policy

1. Summary of the Proposal

In the proposed rule, the EPA described its longstanding clean data policy and proposed to codify the policy in regulatory text. A clean data determination (CDD) is a notice-and-comment rulemaking wherein the EPA determines that a specific nonattainment area has attained the relevant NAAQS based on 3 years of quality-assured certified air quality monitoring data. The CDD suspends the state's obligation to submit to the EPA the planning elements related to attaining the standard required of nonattainment areas under the Clean Air Act for as long as the area continues to attain the standard.[248] The CDD does not suspend certain CAA requirements, such as an emissions inventory, nonattainment new source review requirements, and certain emission reduction requirements, that are considered independent of attainment needs.

The proposal provided additional discussion about attainment demonstrations, control requirements for Moderate areas, RFP and quantitative milestones, and contingency measures. With regard to control requirements for Serious areas, the proposal included two options: one option would suspend BACT/BACM requirements under a CDD if elsewhere in the rule such requirements were considered necessary for expeditious attainment, and the other option would not suspend BACT/BACM requirements if elsewhere in the rule such requirements were considered to be generally independent of attainment.

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[248] In the context of CDDs, the EPA distinguishes between attainment planning requirements of the CAA, which relate to the attainment demonstration for an area and related control measures designed to bring an area into attainment for the given NAAQS as expeditiously as practicable, and other types of requirements, such as permitting requirements under the NNSR program, and any specific control requirements independent of those strictly needed to ensure timely attainment of the given NAAQS.

2. Final Rule

The final rule codifies the clean data policy in rules governing the implementation of current and future $PM_{2.5}$ NAAQS, and much of the guidance discussed in the proposal regarding which requirements are suspended remains the same. The EPA has already codified the clean data policy in a regulation implementing the 1997 8-hour ozone NAAQS that was specifically challenged and upheld by the D.C. Circuit in *NRDC v. EPA*, 571 F. 3d 1245 (D.C. Cir. 2009), and numerous United States Circuit Courts of Appeal have upheld the Clean Data Policy, including the EPA's application of this interpretation of the CAA with regard to implementation of the PM_{10} NAAQS under subpart 4. *See Latino Issues Forum v. EPA*, Nos. 06-75831 and 08-71238 (9th Cir. March 2, 2009) (memorandum opinion). The EPA had also codified the clean data policy for $PM_{2.5}$ in the now remanded 2007 $PM_{2.5}$ implementation rule. For a complete discussion of the Clean Data Policy's history and EPA's longstanding interpretation under the Clean Air Act, please refer to the proposal.

The planning elements under subpart 1 and subpart 4 generally include reasonable further progress (RFP) requirements, attainment demonstrations, RACM and RACT, nonattainment area contingency measures, and other state planning requirements related to attaining the NAAQS.[249] The suspension of the obligation to submit such requirements applies regardless of when the plan submissions are due. The CDD does not suspend CAA requirements that are independent of helping the area achieve attainment, such as the requirements to submit an emissions inventory and nonattainment new source review requirements. The determination of attainment is not

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[249] *See* December 14, 2004 memorandum from Stephen D. Page, Director, EPA Office of Air Quality Planning and Standards, to Air Division Directors, EPA Regions I-X, titled "Clean Data Policy for the Fine Particle National Ambient Air Quality Standards." Available at: *http://www.epa.gov/airquality/urbanair/sipstatus/docs/pm25_clean_data_policy_14dec2004.pdf*.

equivalent to a redesignation, and the state must still meet the statutory requirements for redesignation in order to be redesignated to attainment. A determination of attainment for purposes of the Clean Data Policy/regulations is also not linked to any particular attainment deadline, and is not necessarily equivalent to a determination that an area has attained the standard by its applicable attainment deadline, e.g., under CAA section 188(b). Note also that if the EPA determines that an area with a clean data determination subsequently is violating the standard prior to being redesignated to attainment, the area will be required to address the pertinent requirements when it submits the SIP to EPA. As has long been the EPA's policy, areas subject to a determination that a CDD is rescinded due to subsequent violation of the NAAQS would receive a reasonable amount of time to address the previously suspended requirements and submit revisions to their SIPs. The EPA would establish this SIP submittal date on a case-by-case basis, taking into account individual circumstances surrounding the particular SIP provisions at issue.[250]

This rule specifies that a determination that a nonattainment area is attaining the current and future $PM_{2.5}$ NAAQS would suspend the following attainment planning related requirements under subpart 1 and subpart 4: (i) the part D, subpart 4 and subpart 1 obligation to provide an attainment demonstration pursuant to CAA section 189(a)(1)(B); (ii) the RACM and RACT provisions of CAA section 189(a)(1)(C); (iii) the RFP and quantitative milestones provisions of CAA section 189(c); and, (iv) related attainment demonstration, RACM and RACT, RFP and contingency measure provisions requirements of subpart 1, section 172. The following sections

[250] *Ibid.*

a-d provide additional detail on the $PM_{2.5}$ NAAQS planning requirements that would be suspended by a CDD.

a. Attainment Demonstrations. With respect to the attainment demonstration requirements of section 172(c) and section 189(a)(1)(B) of the CAA, the EPA finds that if an area already has air quality monitoring data demonstrating attainment of the standard, there is no need for an area to make a further submission containing additional measures to achieve attainment, nor is there a need for the area to perform future modeling to show how the area will achieve attainment. The plain language of CAA section 189(a)(1)(B) requires that the attainment plan provide for "a demonstration (including air quality modeling) that the [SIP] will provide for attainment by the applicable attainment date." Where the area has attained the standard, such a demonstration no longer serves a purpose.

b. Control Measure Requirements for Moderate Areas. Both CAA sections 172(c)(1) and 189(a)(1)(C) require "provisions to assure that reasonably available control measures" (i.e., RACM) are implemented in a nonattainment area. Reasonably available control technology (i.e., RACT) is a subset of RACM. The EPA has long interpreted "reasonably available control measures" under CAA sections 172(c)(1) and 189(a)(1)(C) to mean only those measures that are necessary to help an area achieve attainment. Thus, where an area is already attaining the standard, no additional RACM are required, but all measures adopted into the SIP prior to attainment would remain. The EPA is interpreting CAA section 189(a)(1)(C) consistent with its interpretation of CAA section 172(c)(1).

c. RFP and Quantitative Milestones. The EPA has long interpreted the provisions of part D, subpart 1 of the CAA (sections 171 and 172) as not requiring the submission of RFP for an

area already attaining the PM_{10} NAAQS. For an area that is attaining, showing that the state will make RFP towards attainment "will, therefore, have no meaning at that point."

d. Contingency Measures. Other SIP submission requirements are linked with these attainment demonstration and RFP requirements, and similar reasoning applies to them. These requirements include the contingency measure requirements of CAA sections 172(c)(9). The EPA has interpreted the obligation to submit contingency measure requirements of CAA sections 172(c)(9) as suspended when an area has attained the standard because those "contingency measures are directed at ensuring RFP and attainment by the applicable date." 57 FR at 13564; *see* also Seitz memo at pgs. 5-6.

e. Control Measure Requirements for Serious Areas. Section VII.D of the preamble explains the rationale of the EPA's decision to maintain its longstanding policy of considering the BACT/BACM requirement of CAA section 189(b)(1)(B) to be generally independent of attainment. Accordingly, this rule states that a clean data determination would not suspend the obligation for the state to submit any applicable outstanding BACM and BACT requirements.

For a Serious area that failed to attain the relevant $PM_{2.5}$ NAAQS by the applicable attainment date and that is therefore subject to the annual 5 percent emissions reduction requirement under CAA section 189(d), but is nevertheless now attaining the relevant NAAQS, the EPA believes that the Clean Data Policy may apply to the obligations of the state to make an attainment plan submission to meet the requirements of CAA section 189(d). Once such an area is attaining the relevant NAAQS, a clean data determination would suspend the CAA section 189(d) submission requirement.

3. Comments and Responses

Comment: Several commenters supported the EPA's proposal to codify the clean data policy in the final rule because they believe the policy is lawful and relieves states from unnecessary planning burdens in areas where the NAAQS is met. Some commenters stated the policy has specifically been upheld by the D.C. Circuit in the context of review of nationally applicable implementation rules for the EPA's ozone NAAQS [*Natural Res. Def. Council v. EPA*, 571 F.3d 1245, 1260-61 (D.C. Cir. 2009)]. Other commenters, however, asserted that they "reiterate their previous comments regarding the illegality of the Clean Data Policy." To the extent that the Agency planned to continue to follow the policy, these commenters agreed with the EPA's interpretation that only those requirements tied to an area's demonstration of attainment should be suspended. To that end, the commenters requested clarification that measures that have been responsible for the area's attainment must be submitted and approved into the SIP even following a Clean Data Determination. Similarly, other commenters requested clarification as to EPA's statement that "Thus, where an area is already attaining the standard, no additional RACM are required, but all measures adopted into the SIP prior to attainment would remain." The commenter wondered if "all measures adopted into the SIP" includes measures that were included and identified as RACT or RACM in the original SIP, even if those measures have not yet been submitted to EPA in regulatory form.

Finally, some commenters noted that the Act requires that RACM/RACT be implemented within 4 years of a nonattainment designation and stated that, as sources reduce emissions of $PM_{2.5}$ and regional PM precursors due to national rules yet to be fully implemented (e.g., Boiler NESHAPS, CSAPR) it is entirely possible that an area may attain the standard prior to complete implementation of RACM/RACT. The commenters stated that, if an area attains the NAAQS

prior to implementation of the planning requirements, it is meaningless and overly burdensome to require the area to continue implementing RACM/RACT.

Response: The EPA disagrees with commenters who allege, without explanation, that the Clean Data Policy is "illegal." Rather, as noted by supportive commenters, the EPA has long interpreted certain CAA requirements that are designed to bring an area into attainment to serve no purpose once an area is attaining, and thus has interpreted the Act as permitting the Agency to suspend the requirements to submit revisions to the SIP addressing those requirements. This position has been upheld by multiple Circuit Courts of Appeals.[251]

In response to the requests for clarification of which RACM requirements are suspended by a CDD, we note that, for over 30 years, the EPA has consistently interpreted the RACM requirement in CAA section 172(c)(1) to apply only to those measures that, individually or collectively, contribute to expeditious attainment of the NAAQS. The suspension of the statutory requirement to submit RACM is premised on the idea that, "[t]o the extent an area is already achieving attainment as expeditiously as possible, imposition of additional control [measures] would not hasten achievement of the NAAQS. In such a situation, the EPA may reasonably conclude that no control [measures] are reasonably available and the area need not implement further [measures] to satisfy the [RACM] requirement." *See NRDC v. EPA*, 571 F.3d 1245, 1253 (D.C. Cir. 2009). Thus, upon the EPA's finalization of a CDD for a particular NAAQS, the EPA formally suspends the obligation to submit attainment-related plan elements for that particular NAAQS, including RACM. A CDD does not, however, affect the criteria in CAA section

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[251] *See, e.g., NRDC v. EPA*, 571 F.3d 1245 (D.C. Cir. 2009); *Sierra Club v. EPA*, 99 F.3d 1551 (10th Cir. 1996); *Latino Issues Forum v. EPA*, Nos. 06-75831 and 08-71238 (9th Cir. March 2, 2009) (memorandum opinion).

107(d)(3)(E) for redesignation to attainment, including the requirement for the state to demonstrate to the EPA's satisfaction that the improvement in air quality is due to "permanent and enforceable reductions in emissions resulting from implementation of the applicable implementation plan" and other permanent and enforceable reductions. Thus, to the extent certain state/local control measures were necessary to an area's attainment of the NAAQS, the state may need to submit those measures to the EPA for SIP approval in order to meet the statutory criteria for redesignation in CAA section 107(d)(3)I, notwithstanding the suspension of planning obligations under a CDD.

In this case, it is not clear to the EPA what the commenter means by the phrase "original SIP," since the SIP is only those measures that have been submitted and approved by the EPA. To the extent that a measure was adopted into the SIP prior to an area's attainment of the NAAQS, and therefore contributed to an area's attainment, that measure is therefore required to remain as part of the SIP. We infer that the comment might be referring to commitments that were approved into a SIP to adopt future measures, or that commenters might be asking for clarification regarding measures that have been adopted locally or at a state level prior to the area's coming into attainment but have not yet been submitted to the EPA for approval into the federally-approved SIP. As explained above, a CDD has no effect on the state's obligation to demonstrate that an area's improvement in air quality is due to "permanent and enforceable" emissions reductions in order to meet the statutory requirements for redesignation to attainment in CAA section 107(d)(3)(E). Additionally, a CDD does not alter the effect of any measure (including any state commitment) that has *already* been approved into a SIP, even if that measure is a commitment to adopt or submit a future measure. Once approved into a SIP, such a measure becomes an enforceable emission standard or limitation subject to EPA or citizen

enforcement under CAA section 304, which cannot be altered except through a SIP revision approved by the EPA. Along those same lines, even if an area has adopted into its SIP RACM/RACT but has yet to fully implement those measures when the area first starts attaining the NAAQS, a CDD does not excuse the area from continuing to implement its SIP requirements, i.e., the RACM/RACT measures that have been approved into the SIP. The CDD merely suspends the requirement to *submit* RACM/RACT, that is, additional measures on top of what brought the area into attainment; a state may only stop implementing those measures already in its SIP through a SIP revision approved by the EPA.

Comment: Some commenters supported the EPA's proposal to retain the BACM/BACT submission requirement even with a CDD (80 FR 15444). Other commenters, however, stated that, once the EPA makes an attainment determination, the EPA should suspend the requirements to submit BACM/BACT and that to do otherwise is illogical.

Response: The EPA is finalizing the option that requires BACM/BACT to be submitted even if the EPA has issued a CDD for an area. As discussed in our proposal and earlier in this section, the legal underpinning of the Clean Data Policy is that the EPA interprets the CAA not to require the submission of requirements that are designed to get an area to attainment once that area is already attaining the NAAQS. Thus, only those "attainment planning" requirements are suspended by a CDD. It is therefore illogical for the EPA to extend the Clean Data Policy to the submission of the BACM/BACT requirement for Serious Areas. Because the EPA interprets BACM/BACT as independent of attainment, as discussed above in Section VII.D of the preamble, the requirement to submit BACM/BACT continues to apply regardless of whether the EPA has determined that the area is attaining.

D. CAA Section 179B/International Border Areas

1. Specific Requirements

a. Summary of Proposal. Section 179B of the CAA, titled "International Border Areas," applies to areas that would attain the relevant NAAQS by the statutory attainment date "but for" emissions emanating from outside the U.S. Under CAA section 179B, if applicable, the provision modifies subpart 4 attainment plan obligations applicable to areas designated nonattainment for any PM NAAQS. The EPA proposed and sought comment on two approaches that would give greater clarity to the agency's existing interpretation of the RACM/RACT and additional reasonable measure requirements for Moderate area attainment plans to be approved under CAA section 179B. The first proposed interpretation would have clarified that the control strategy for an area that could attain by the Moderate area attainment date, "but for" foreign emissions of direct $PM_{2.5}$ or its precursors, must include all control measures identified by the state to be technologically and economically feasible and implementable on sources in the area by the end of the sixth calendar year following designation of the area. Under this approach, inclusion of such measures would satisfy requirements for RACM and RACT (for measures that can be implemented within four years) and additional reasonable measures (for measures than can be implemented within six years but not within four). The proposal also sought comment on a possible exception for any such measures that collectively would not be effective in reducing ambient $PM_{2.5}$ levels in the area. The second proposed approach would have required a state to demonstrate that its selected control measures for a Moderate nonattainment area would achieve reductions in $PM_{2.5}$ levels that exceeded the applicable NAAQS in proportion to their contribution to overall $PM_{2.5}$ levels. Inclusion of these proportional measures would thus satisfy RACM/RACT and additional reasonable measures under the second approach. The EPA sought

comment on these two approaches to clarify what constitutes a reasonable control strategy in the context of a SIP submitted pursuant to CAA section 179B.

The EPA also proposed that any Moderate area attainment plan submitted under CAA section 179B must include an RFP plan with required air quality targets consistent with the RFP Option 2. In addition, the EPA proposed requirements for establishing and reporting on quantitative milestones for areas with approved "but for" demonstrations.

b. Final Rule.

Section 179B(a) of the CAA provides that the EPA shall approve an attainment plan for a nonattainment area that is an international border area if: (i) the attainment plan meets all other applicable requirements of the CAA, and (ii) the submitting state can demonstrate satisfactorily that "but for emissions emanating from outside of the United States," the area would attain and maintain the relevant NAAQS. In addition, CAA section 179B(d) provides that if a state demonstrates that an area would have attained the NAAQS but for emissions emanating from outside the U.S., then the area is not subject to the mandatory reclassification element of CAA section 188(b)(2) for Moderate areas that fail to attain by the applicable attainment date.

Under CAA section 179B, areas affected by emissions from outside the U.S. continue to have attainment plan obligations. First, even if the area is impacted by emissions from outside the U.S., that fact does not affect the designation of the area. Such an area that is violating the relevant NAAQS will be designated nonattainment even if emissions from outside the U.S. contribute to that violation. Second, as a result of that designation, the state is required to meet the applicable attainment plan requirements for the relevant NAAQS. Section 179B of the CAA does not negate the attainment plan requirements. Rather, it allows the EPA to approve an

attainment plan that demonstrates attainment and maintenance of the NAAQS "but for" international emissions.

The EPA has determined that under the best reading of CAA section 179B, states remain obligated to meet the attainment plan requirements other than the requirement to demonstrate attainment and maintenance of the relevant NAAQS. This determination is based upon the fact that 179B(a)(1) explicitly states that such an attainment plan must meet all the requirements of the CAA with that exception. The applicable requirements for an attainment plan for $PM_{2.5}$ include those requirements that apply to a Moderate area attainment plan. Those requirements include an emissions inventory, RACM and RACT, additional reasonable measures, RFP, quantitative milestones, contingency measures, NNSR and motor vehicle emissions budgets for transportation conformity purposes. The Addendum includes a discussion of the applicable attainment plan requirements in the context of developing a SIP subject to CAA section 179B. In it, the EPA clarified that "RACM/RACT must be implemented to the extent necessary to demonstrate attainment by the applicable attainment date if emissions emanating from outside the U.S. were not included in the analysis."[252] The EPA further encouraged states "to reduce emissions beyond the minimum necessary to satisfy the 'but for' test in order to reduce the PM concentrations to which their populations are exposed."[253] However, the EPA acknowledged that "if…States…were also required, because of contributions to PM_{10} violations caused by foreign emissions, to shoulder more of a regulatory and economic burden than States not similarly affected…such a requirement would unfairly penalize States containing international border areas and effectively undermine the purpose of CAA section 179B. Indeed, to the extent an

[252] Addendum to the General Preamble, 59 FR 41998 (August 16, 1994), at page 42001.
[253] *Ibid.*

affected State can satisfactorily demonstrate that implementation of such measures clearly would not have advanced the attainment date, the EPA could conclude they are unreasonable and hence do not constitute RACM."[254]

In the proposal, the EPA specifically took comment on the most appropriate way to address the RACM and RACT requirements. The past interpretation of RACM and RACT requirements in the context of CAA section 179B was considered when the agency proposed an option to allow a state not to adopt such measures if the state could demonstrate that collectively the measures will not be effective in reducing $PM_{2.5}$ levels in the area. Some commenters supported this exception, stating that it would prevent wasting resources on ineffective measures. Some commenters stated that requiring implementation of all RACM/RACT and additional reasonable measures circumvents Congressional intent and the CAA. Other commenters disagreed, stating that these areas should implement all measures due to the importance to public health.

Regarding RACM/RACT and additional reasonable measures, the EPA reviewed the comments received and its past interpretation of RACM and RACT requirements in the context of CAA section 179B attainment plans for $PM_{2.5}$ NAAQS. The EPA is persuaded that this approach is most appropriate and most consistent with the Act and with the control requirements for other Moderate areas that demonstrate they cannot practicably attain by the Moderate area attainment date. *See* section 51.1009(a)(4)(ii). In longstanding guidance the EPA has encouraged states "to reduce emissions beyond the minimum necessary to satisfy the 'but for' test in order to

[254] *Ibid.*

reduce the PM_{10} concentrations to which their populations are exposed."[255] Given that the primary purpose of an attainment plan is to ensure expeditious attainment of the NAAQS and protection of public health and welfare through implementation of control measures that achieve emissions reductions, adopting an interpretation that would allow for continued emissions of pollutants that the state could reasonably reduce would be antithetical to the objectives of the CAA. Just as it is appropriate and consistent with the Act to adopt reasonable measures (i.e., RACT/RACM or additional reasonable measures) in areas that cannot practicably attain by the attainment date, as previously discussed, it is also appropriate and consistent with the Act to adopt reasonable measures in areas that cannot attain due to international emissions.

Therefore, the EPA requires that Moderate area attainment plans approved under CAA section 179B must implement all technologically and economically feasible measures that can be implemented on sources in the area by the end of the sixth calendar year following designation of the area (*i.e.*, RACM and RACT and additional reasonable measures). This requirement is intended to ensure that the area makes reasonable progress toward attaining the standard even if such measures are not expected to yield attainment by the statutory Moderate area attainment date. This approach parallels the requirements described in Section IV.D in this preamble, pursuant to CAA section 189(a)(1), for Moderate $PM_{2.5}$ nonattainment areas that cannot practicably attain the NAAQS by the latest statutory attainment date for the area. Requiring the implementation of all reasonable measures is even more important in the context of a Moderate area for which CAA section 179B applies because sources in such areas will not be subject to the more stringent BACM/BACT, MSM, or 5 percent requirement because such areas are not

[255] *Ibid.*

subject to mandatory reclassification as Serious areas pursuant to CAA section 179B(d). Thus, the only level of $PM_{2.5}$ control requirements that will likely ever apply to these sources is the less-stringent RACM/RACT and additional reasonable measures level of control; therefore, all the sources in the area should reduce emissions if such reduction is reasonable since the public in those areas will continue to be subject to ambient levels of emissions that the agency has determined are unsafe notwithstanding implementation of those reasonable measures. Additionally, the EPA notes that the process to determine RACM already allows states to identify the subset of all control measures that are technologically and economically feasible, which should be adequate to prevent significant wasting of resources on ineffective measures.

The EPA has determined that it will not finalize the proposed option of achieving reductions in $PM_{2.5}$ levels in proportion to the area's contribution to overall $PM_{2.5}$ levels. The EPA received several comments on the proposed option to allow states to implement control measures for a Moderate nonattainment area with a plan approved under CAA section 179B that would achieve reductions in $PM_{2.5}$ levels in proportion to the area's contribution to overall $PM_{2.5}$ levels. Although some commenters supported the possibility of proportionally implementing control measures, other commenters raised possible negative consequences of this option. Commenters highlighted the difficulty that states would face in apportioning responsibility for emissions between foreign and non-foreign sources, which would be necessary under the proportional approach. These commenters also disagreed as to whether the EPA or states should be responsible to determine the proportional allocation of international emissions. The EPA is also concerned that a proportional approach would introduce too much complexity into an already complex analytical process. Additionally, the EPA notes that no other NAAQS pollutant

offers a proportional approach to implementation of control measures and is not convinced that there are sufficient reasons to finalize this approach for $PM_{2.5}$ nonattainment areas.

Section 179B(d) of the CAA states that any area for which the state establishes to the EPA's satisfaction that the area "would have attained the NAAQS by the applicable attainment date, but for emissions emanating from outside the United States, shall not be subject to the provisions of section [188(b)(2)]." CAA section 188(b)(2) requires the EPA to determine, within 6 months following the applicable attainment date for a Moderate $PM_{2.5}$ nonattainment area, whether the area attained the NAAQS by that date and to reclassify the area as Serious if it is not in attainment after the applicable attainment date. For any Serious area subject to an EPA determination of failure to attain by the Serious area attainment date, CAA section 189(d) requires the state to submit plan revisions which provide for attainment of the $PM_{2.5}$ NAAQS and for annual emissions reductions of not less than 5 percent until the area attains. These planning requirements in section 189(d) apply only upon the EPA's determination that a Serious area has failed to attain the applicable NAAQS by the Serious area attainment date. Because section 179B(d) explicitly provides that any area that satisfies the "but for" attainment test in CAA section 179B shall not be subject to the provisions for reclassification to Serious upon failure to attain in CAA section 188(b)(2), the consequences for failure to attain by the Serious area attainment date in section 189(d) generally do not apply to such areas.

In the event that the EPA has already reclassified an international border area as Serious, when the state submits a "but for" demonstration under section 179B, all of the Serious area requirements that apply to the area (e.g., the requirements to implement BACM/BACT and additional feasible measures) would remain in effect. This is because at the time the state submits the "but for" demonstration, these statutory requirements already apply. Upon the EPA's

approval of a Serious area plan and section 179B demonstration for such an area, however, the EPA would no longer be obligated to make a determination of failure to attain by the Serious area attainment date triggering the additional planning requirements of section 189(d). Consistent with Congress's clear intent in section 179B(d) to relieve Moderate $PM_{2.5}$ nonattainment areas that satisfy the "but for" attainment test of the additional planning obligations that result from a mandatory determination of failure to attain by the Moderate area attainment date, the EPA interprets section 179B as also relieving Serious $PM_{2.5}$ nonattainment areas of the additional planning obligations in section 189(d) that result from a mandatory determination of failure to attain by the Serious area attainment date, once the EPA approves the state's Serious area plan and section 179B demonstration.

Where a Serious area fails to attain by the Serious area attainment date and is therefore subject to the requirements of section 189(d), the EPA's approval of a section 189(d) plan and 179B demonstration would mean that the EPA is no longer obligated to make further determinations of failure to attain or to trigger additional planning requirements. The EPA intends to review each SIP submission containing a "but for" attainment demonstration for an international border area for compliance with the requirements of section 179B.

The EPA notes that, with one exception for contingency measures, the final rule provisions governing for the RFP, quantitative milestone, and contingency measure requirements for $PM_{2.5}$ nonattainment areas are the same for areas seeking plan approval under CAA section 179B as they are for any other area. For example, the EPA requires that as part of any Moderate area attainment plan submitted under CAA section 179B, a state must include an RFP plan developed consistent with the process described in Section IV.F of this preamble as a Moderate nonattainment area that cannot practicably attain the relevant NAAQS by the statutory

attainment date. In addition, the EPA requires that the state must identify quantitative milestones for the area to be achieved 4.5 years and 7.5 years from the date of designation of the area. The EPA will apply the same requirements for establishing and reporting on quantitative milestones for Moderate nonattainment areas with an approved "but for" demonstration under CAA section 179B as for all other Moderate nonattainment areas, as described in Section IV.G of this preamble. Furthermore, the state must include as part of any attainment plan submission made for such an area contingency measures that are ready to be implemented quickly and with minimal further action by the state or by the EPA in the event the EPA determines that such area failed to meet RFP or quantitative milestone requirements. The contingency measures should achieve approximately 1 year's worth of emissions reductions as calculated by the state for purposes of the RFP analysis. The exception to the contingency measure requirement for areas with approved CAA section 179B demonstrations is that contingency measures for failure to attain are not required in such plans, because under CAA section 179B(d) the EPA is not required to make determinations concerning attainment for such areas. Further explanation of contingency measures can be found in Section IV.H of this preamble.

Regarding the "but for" demonstrations under CAA section 179B, the EPA has historically evaluated these demonstrations on a case-by-case basis, based on the individual circumstances and data provided by the submitting state. These demonstrations have included information such as ambient air quality monitoring data, modeling scenarios, emissions inventory data and meteorological or satellite data.[256] The Moderate area attainment

[256] *Ibid.* The Addendum includes further examples of information a state may present for the EPA to consider as part of the "but for" demonstration, including additional monitors in

demonstration modeling and other elements of the attainment demonstration must show attainment and maintenance of the NAAQS but for the emissions from outside of the U.S. However, CAA section 179B does not provide authority to exclude monitoring data influenced by international transport from regulatory determinations related to attainment and nonattainment.

Where international transport of emissions contributes to an exceedance or violation, such data may be excluded from consideration only if they were significantly influenced by exceptional events under section 319(b) of the CAA. If the data meet the criteria contained in the EPA's Exceptional Events Rule, the exceedance can be addressed by that rule.[257] Specifically, if the EPA concurs with a state's request to exclude affected data, the event-influenced data are officially noted and removed from the data set used to calculate official design values, which may be used as part of a regulatory determination.

The EPA expects that the best approach for evaluating the potential impacts of international transport on nonattainment is for states to work with the EPA on a case-by-case basis to determine the most appropriate information and analytical methods for each area's unique situation. The EPA will work with states that are developing exceptional events demonstrations and attainment plans for which CAA section 179B is relevant, and ensure the states have the benefit of the EPA's understanding of international transport of $PM_{2.5}$ and $PM_{2.5}$ precursors.

c. Comments and Responses.

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international border areas, more detailed emissions inventories, and speciation data that identifies $PM_{2.5}$ components from foreign sources.

[257] *See* 40 CFR 40 CFR 50.1, 50.14 and 51.930.

Comment: Commenters stated the EPA should not require the state to implement a section 189(d) 5 percent reduction plan, since attaining such reductions may well be impossible if there are significant international emissions.

Response: The EPA agrees that as long as the affected nonattainment area satisfactorily meets the provisions of CAA section 179B, that area should not be subjected to the additional requirements of CAA section 189(d) even if the area fails to attain.

Comment: Commenters stated that requiring implementation of all RACM and RACT for CAA section l79B nonattainment areas would penalize rural communities and would run counter to the intent of CAA section 179B of providing regulatory relief to areas affected by foreign emissions.

Response: For the reasons stated earlier, the EPA has determined that section 179B nonattainment areas should be required to implement control measures to the same extent as a Moderate nonattainment area that demonstrates it will not be able to attain the $PM_{2.5}$ NAAQS by the statutory attainment date.

Comment: Some commenters stated that the EPA's current interpretation of section 179B and the agency's guidance which encourages states "to reduce emissions beyond the minimum necessary to satisfy the 'but for' test," circumvents Congressional intent and the CAA and establishes a second ambient air quality threshold not related to the NAAQS.

Response: The EPA disagrees that encouraging states to minimize emissions as much as possible to protect public health circumvents Congressional intent. The EPA has determined that the reasonable control measure requirements outlined in section 51.1009(a)(4)(ii) represent the most appropriate interpretation of the CAA in line with the overriding Congressional intent to protect and improve air quality thereby enabling the associated public health benefit.

Comment: Some commenters stated that if an area's demonstration is approved under CAA section 179B, any contingency measures should only be required to obtain emissions reductions in proportion to the contribution of emissions excluding the international pollution, or at least to the contribution of emissions reductions that the state can feasibly attain.

Response: The EPA agrees that contingency measures relate to the domestic portion of emissions affecting the nonattainment area. The state will not be required to develop contingency measures to make up for those emissions coming from international sources. The EPA emphasizes that contingency measures for a section 179B area will be for failure to meet RFP requirements, not for failure to attain.

However, the EPA expects states with a section 179B area to follow the guidance and requirements outlined in Section IV.H of this preamble to identify contingency measures that can provide emissions reductions from sources within the state's jurisdiction. As discussed in Section IV.H of the preamble, this should include an explanation of the amount of anticipated emissions reductions to be accomplished by the contingency measures. If such an area is unable to identify approximately 1 year's worth of emissions reductions to constitute contingency measures, the explanation should describe the factors considered by the state when reaching this conclusion.

E. Enforcement and Compliance

a. Summary of Proposal. The agency proposed that in general, in order for a SIP regulation to be enforceable, it must clearly spell out which sources or source types are subject to its requirements and what its requirements (*e.g.*, emission limits or work practices) are. The EPA proposed that an enforceable regulation would also specify the timeframes within which these requirements must be met, and definitively state the recordkeeping and monitoring requirements appropriate to the type of sources being regulated. Additionally, the EPA proposed that an

enforceable regulation would also contain test procedures in order to determine whether sources are in compliance.

b. Final Rule. Section 172(c)(6) in subpart 1 of the CAA requires nonattainment SIPs to "include enforceable emission limitations, and such other control measures, means or techniques… as well as schedules and timetables for compliance, as may be necessary or appropriate to provide for attainment." In the remanded 2007 $PM_{2.5}$ Implementation Rule, the EPA described the general elements that characterize an enforceable SIP regulation, recognizing that enforceable SIP regulations may address the elements in different ways depending on the type of source category being regulated. The agency continues to believe and hereby finalizes that in general, in order for a SIP regulation to be enforceable, it must clearly spell out which sources or source types are subject to its requirements and what its requirements (*e.g.*, emission limits or work practices) are. An enforceable regulation would also specify the timeframes within which these requirements must be met, and definitively state the recordkeeping and monitoring requirements appropriate to the type of sources being regulated. The recordkeeping and monitoring requirements would have to be sufficient to enable the state or the EPA to determine whether the source is complying with the emission limit on a continuous basis. An enforceable regulation would also contain test procedures in order to determine whether sources are in compliance.

The EPA continues to believe that complete and effective regulations that ensure compliance with an applicable emissions limit must include requirements for both performance testing of emissions and ongoing monitoring of the compliance performance of control measures, and the agency requires that SIP regulations that establish emission limits include the following for performance testing:

1) Indicator(s) of compliance - the pollutant or pollutants of interest (*e.g.*, filterable and condensable $PM_{2.5}$) and the applicable units of measurement for expressing compliance (*e.g.*, ng/J of heat input, lb/hr);
2) Test method - reference to a specific EPA or other published set of sample collection and analytical procedures, equipment design and performance criteria, and the calculations providing data in units of the indicator of compliance (Section IX.K of this preamble presents a discussion of specific test methods for condensable $PM_{2.5}$ emissions);
3) Sample collection characteristics – conditions related to the sample collection portion of the performance test. Such conditions would include duration of sampling period, either on a time or volume collected basis; the number of runs comprising a test (*e.g.,* three runs per test); and the averaging period, i.e., the time over which the emissions limit is averaged (*e.g.*, 8 hours); and,
4) Frequency - the time between emissions or performance tests (*e.g.*, within 30 days of facility start-up and once each successive quarter, every 6-month period, or yearly).

In order to be complete with regard to compliance monitoring provisions, the EPA requires that regulations adopted into the SIP must include the following critical elements:

1) Indicator(s) of performance - the parameter or parameters measured or observed for demonstrating proper operation of the pollution control measure or compliance with the applicable emissions limitation or standard. Indicators of performance could include direct or predicted emissions measurements, process or control device (and capture system) operational parametric values that correspond to compliance with efficiency or emissions limits, and recorded findings of verification of work practice activities, raw material or fuel pollutant content, or design characteristics. Indicators could be expressed

as a single maximum or minimum value, a function of process variables (*e.g.*, within a range of pressure drops), a particular operational or work practice status (*e.g.*, a damper position, completion of a waste recovery task), raw material or fuel pollutant content, or an interdependency between two or more variables;

2) Measurement technique - the means used to gather and record information of or about the indicators of performance. The components of the measurement technique include the detector type or analytical method, location and installation specifications, inspection procedures, and quality assurance and quality control measures. Examples of measurement approaches include continuous emissions monitoring systems (CEMS), continuous opacity monitoring systems (COMS), continuous parametric monitoring systems (CPMS), performance testing, vendor or laboratory analytical data, and manual inspections and data collection that include making records of process conditions, raw materials or fuel specifications, or work practices. Directly enforceable emission measurements, such as PM CEMS, are preferred wherever feasible. Where COMS are feasible, it should be clear that opacity is a directly enforceable standard, not merely an indicator of compliance;

3) Averaging time - the period over which to average data to verify compliance with the emissions limitation or standard or proper operation of the pollution control measure. Examples of averaging time include a 3-hour average in units of the emissions limitation, a 30-day rolling average emissions value, a daily average of a control device operational parametric range, periodic (*e.g.*, monthly, annual) average of raw materials or fuel pollutant content, and an instantaneous alarm;

4) Monitoring frequency - the number of monitoring data values recorded over a specified time interval. Examples of monitoring frequencies include at least one data value every 15 minutes for CEMS or CPMS, at least every 10 seconds for COMS, upon receipt or application of raw materials or fuel to the process, or at least once per operating day (or week, month, etc.) for performance testing, work practice verification, or equipment design inspections; and,

5) Reporting and record retention requirements – criteria for retaining monitoring and test data in an electronic form and periodic electronic reporting of information as needed to the compliance office. Electronic record retention and submission have been widely adopted, and the EPA believes that such readily accessible documentation could be used by state, federal and other analysts to spot trends and non-compliance more easily than if these entities conducted reviews of paper documents. The EPA also recommends that compliance reports be made available online so that the general public can readily access the information without the need to submit Freedom of Information Act (FOIA) requests to the EPA. The EPA is in the process of revising federal rules to make similar requirements apply.

The EPA acknowledges that one way for regulatory authorities to have owners or operators of regulated sources demonstrate compliance via ongoing monitoring is to use a Compliance Assurance Monitoring (CAM) rule-type approach.[258] Under such an approach, an owner or operator would be able to establish operating ranges of continuously monitored parameters determined through concurrent performance testing as indicators of performance. A

[258] *See* the CAM rule, available at 40 CFR part 64.

CAM rule-type approach would require owners or operators who chose parameter monitoring as indicative of compliance to immediately take corrective action should a measured parameter value occur outside the demonstrated range associated with compliance. Moreover, concurrent performance testing and parameter measurement would be necessary on a periodic basis, generally annually, and may be necessary on a more frequent basis to reverify or reset parameter value range, particularly when the operating range is exceeded. Failure of the owner or operator to take immediate corrective action would constitute a violation of the applicable rule. Moreover, failure of a parameter range to demonstrate compliance when reverification or resetting performance testing occurred would also constitute a violation of the emission limit. This implementation rule does not prohibit states from taking a CAM rule type approach and making parameters directly enforceable limits.

The EPA continues to believe that approval of regulations adopted into SIPs should ensure that these critical elements are present and clearly defined to be approvable. In particular, the compliance obligations, including emissions limits and other applicable requirements, should be representative of and accountable to the assumptions used in a state's attainment demonstration. This accountability should include the ability to transfer the applicable regulatory requirements to a title V operating permit subject to the EPA and public review.[259]

c. Comments and Responses.

[259] Under the title V regulations, sources have an obligation to include in their title V permit applications, among other components, all emissions of pollutants for which the source is major, and all emissions of regulated air pollutants. *See*, *e.g.*, 40 CFR 70.5(c)(3). The definition of regulated air pollutant in 40 CFR 70.2 includes any pollutant for which the NAAQS has been promulgated, including $PM_{2.5}$.

Comment: Commenters suggested that the proposal's use of the term "indicators of compliance" is confusing and suggested the EPA should simply express that emission limitations must identify the pollutant of interest and the units of measurement. The commenters suggested the EPA use the term "measurement method" and the EPA acknowledge that sources may use procedures that are not published by the EPA, especially for pollutants for which there is no federally promulgated test method, performance specification, or voluntary consensus standard. The commenters disagreed that "averaging time" is always the appropriate term, since it has no applicability for standards that use test methods that specify minimum run times or sample volumes, and numbers of runs, and suggested the EPA use the term "sample time or volume" and make clear that it can be a minimum or an absolute value.

Response: The EPA does not agree with the commenters' suggestion. The proposal identified four components associated with demonstrating compliance via performance testing – the indicator of compliance (for which the commenters expressed concern), the test method, the averaging time associated with the test method, and the frequency of conducting the test – as well as five components associated with demonstrating compliance via ongoing monitoring. However, the commenters appear to suggest to expand compliance demonstration techniques beyond testing and monitoring. To the extent that SIP regulations are developed that do not rely on performance testing or ongoing monitoring as means for demonstrating compliance, the EPA agrees that other components, including emission limitations that identify the pollutant of interest and units of measurement, as suggested by the commenter, would be appropriate.

The EPA believes neither a change in term from "test method" to "measurement method" nor an additional acknowledgement regarding its current wording "specific EPA or other published set of [criteria]" is needed. The component to which the commenter refers is based on

performance testing; ongoing measurement components are covered as ‘measurement technique’ in one of the five critical elements for ongoing measurement.

The EPA agrees with the commenters that in some circumstances, test methods rely on sample volumes as opposed to specific durations. The ‘averaging time’ component of performance tests will be changed to ‘sample collection characteristics’, where such characteristics will include averaging time, duration, or sample volume and number of runs, as applicable. While the EPA does not believe it to be necessary to identify that the sample collection characteristics could be minima, maxima, or ranges, the preamble discussion associated with this change indicates that specific test methods, or regulatory agencies, may impose restrictions or specific conditions on sample collection characteristics.

Comment: Some commenters stated the EPA should make clear that states can rely on CAM-type parameters as indicators of compliance. The commenters stated the EPA should make clear that states that follow the CAM rule model are not required to establish those “indicators” as directly enforceable limitations, as long as the SIP imposes directly enforceable review and corrective action requirements that will ensure that the source takes corrective action prior to the point when the indicator would predict noncompliance with an emission limitation.

Response: The EPA agrees with the commenters that one way regulatory authorities have owners or operators of regulated sources demonstrate compliance via ongoing monitoring is to use a CAM rule-type approach. Under such an approach, an owner or operator would be able to establish operating ranges of continuously monitored parameters determined through concurrent performance testing as indicators of performance (indicators of compliance are components of performance testing). Nothing in the CAM rule precludes an owner or operator from establishing parameters as directly enforceable limitations, and neither does this rule. The CAM rule-type

approach would require owners or operators who chose parameter monitoring as indicative of compliance to immediately take corrective action should a measured parameter value occur outside the demonstrated range associated with compliance. Moreover, concurrent performance testing and parameter measurement would be necessary on a periodic basis and may be necessary on a more frequent basis to reverify or reset a parameter value range. Failure to take immediate corrective action would constitute a violation. Moreover, failure of a parameter range to demonstrate compliance when reverification or resetting performance testing occurred would also constitute a violation.

Comment: Commenters agreed that a compliance monitoring provision must specify a "measurement technique" and stated the EPA should defer to states regarding the most appropriate measurement techniques. The commenter disagreed that use of CEMS for "directly enforceable measurements" is always preferable.

Response: The EPA appreciates the commenters' support and notes that the measurement technique component used in this rule corresponds to a similarly-named component contained in the definition of monitoring in the general provisions of 40 CFR part 63. To the extent that regulatory authorities choose appropriate measurement techniques, the EPA agrees with the commenter. The EPA believes the commenters take the language regarding use of directly enforceable emissions measurements out of context; the EPA said it is preferred wherever feasible, not that it is always required.

Comment: Commenters stated the EPA should make clear that "averaging time" is only required for measurement techniques that collect continuous data that will be averaged over some period in order to assess source operations; i.e., the element is only essential to certain types of compliance monitoring requirements. The commenters suggested the EPA should not

attempt to impose or require minimum frequencies in terms of calendar days, months, or year and urged the EPA to allow states flexibility to determine how best to address operational variability.

Response: The EPA disagrees with the commenters, noting that averaging time remains an important aspect of demonstrating compliance via ongoing monitoring for all types of monitoring. It remains important to know how the period over which collected data are used to determine compliance, whether that period is daily, hourly, or annually. The EPA has not assigned minimum averaging times that regulatory authorities must use; however, the EPA expects those regulatory authorities to select averaging times appropriate to demonstrate compliance for specific types of sources.

Comment: Commenters supported the EPA's recommendation that information demonstrating compliance be made available online for general public access (80 FR 15448) so that the public can provide the oversight that the Act contemplates (42 U.S.C. section 7604). Other commenters opposed an absolute requirement that all monitoring, testing, and reporting be done electronically since many permits are for small businesses who may not have the capital and technical expertise for electronic recordkeeping and reporting; commenters recommended that the EPA change this criterion into a recommendation that electronic means be used where feasible.

Response: The EPA agrees that electronic reporting and public access to information is important. The EPA notes that it is and has been moving towards electronic emissions reporting from all regulated sources for some time now. New NSPS and NESHAP require electronic emissions reporting, and efforts are underway to require existing NSPS and NESHAP to use

electronic emissions reporting.[260] Consistent with this approach, and with the approach taken by the next generation of compliance program,[261] this rule will assist the shift toward electronic reporting to make environmental reporting more accurate, complete, and efficient. Moreover, electronic reporting of emissions will help us and regulatory authorities better manage information, improve effectiveness, and improve transparency.

F. Multi-pollutant Considerations

1. Summary of Proposal

The EPA described many benefits of coordinating air quality planning efforts across a range of air quality programs addressing the NAAQS, air toxics, and climate change and encouraged states to pursue multipollutant planning approaches where possible.

2. Final Rule

The final rule reiterates many of the points made in support of multipollutant planning efforts in the proposal. Efforts to reduce fine particle concentrations fit well as part of multi pollutant planning efforts because of the involvement of $PM_{2.5}$ precursor gases (i.e., NO_x, SO_2, VOC, and ammonia) and direct $PM_{2.5}$ emissions in a number of other air quality and climate issues. NO_x and VOC play important roles in atmospheric chemistry and in the formation of ground-level ozone. Certain VOCs and constituents of direct $PM_{2.5}$ are also hazardous air pollutants. SO_2 and NO_x emissions, and their reactions with ammonia to form ammonium sulfate and ammonium nitrate, have played important roles in acidic deposition, haze in national parks, and in fine particle formation. Black carbon from direct $PM_{2.5}$ emissions is an important short-

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[260] *See* 80 FR 15099, March 20, 2015.
[261] *See http://www2.epa.gov/sites/production/files/2014-09/documents/next-gen-compliance-strategic-plan-2014-2017.pdf.*

lived climate pollutant. Increasing average temperatures due to climate change are expected to lead to higher ozone concentrations. Many efforts to address traditional air pollutants have important co-benefits in terms of reducing emissions of CO_2 and other GHGs, and vice versa. For these reasons, efforts to reduce air pollution to address multiple objectives can provide important benefits to states, the regulated community, and the general public.

Multipollutant planning issues have been an area of strong interest by scientists and policymakers for many years. In 1995-1997, the EPA sought recommendations from a federal advisory committee with broad stakeholder representation on ways to coordinate and make more efficient the implementation programs for upcoming ozone and $PM_{2.5}$ standards and the regional haze program. The National Academy of Sciences issued "Air Quality Management in the United States," a report on multipollutant planning issues and recommendations, in 2004. In June 2007, the EPA's CAA Advisory Committee (CAAAC) recommended that the agency allow states to integrate SIP requirements and other air quality goals into a comprehensive plan.[262] The recommended plan would demonstrate attainment/maintenance of multiple NAAQS, accomplish sector-based reductions, realize risk reductions of HAPs and make improvements in visibility. It could also be structured to integrate programs addressing land use, transportation, energy and climate.

The EPA believes that in many cases it can be more efficient for states to develop integrated control strategies that address multiple pollutants rather than separate strategies for individual air quality programs. An integrated air quality control strategy that reduces multiple pollutants can help ensure that reductions are efficiently achieved and produce the greatest

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[262] Recommendations to the Clean Air Act Advisory Committee: Phase II, June 2007, *http://www2.epa.gov/caaac/caaac-reports.*

overall air quality benefits. The EPA has encouraged states to take a multi-pollutant approach to managing air quality to the extent possible.

While the agency encourages states to develop multi-pollutant plans, it recognizes that certain factors can make such efforts challenging. For example, the NAAQS are to be reviewed every 5 years, and any revisions to the standards will lead to a series of implementation steps required by specific statutory schedules. In some cases program requirements and deliverables may not be coordinated easily, but in other situations there are good opportunities for conducting technical analyses and developing policy approaches that can have important health and environmental benefits while addressing multiple key air pollution issues at the same time.

One such opportunity is the increased use of multi-pollutant assessments. A multi-pollutant assessment, or one-atmosphere modeling, is conducted with a single air quality model (such as CMAQ or CAMx) that is capable of simulating transport and formation of multiple pollutants simultaneously.[263] For example, this type of model can simulate formation and deposition involving pollutants associated with $PM_{2.5}$, ozone and regional haze, and it can include algorithms simulating gas phase chemistry, aqueous phase chemistry, aerosol formation and acid deposition. This type of model could also include the formation and deposition of key air toxics and the chemical interactions that occur with these individual toxic species to produce $PM_{2.5}$ and ozone. It can also account for estimated changes in traditional air pollutant emissions resulting from programs (such as energy efficiency and renewable energy programs) to reduce emissions of CO_2 and other greenhouse gases.

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[263] Depending on the context, "multi-pollutant" can be defined in different ways. In this context the agency is defining multi-pollutant modeling as simultaneous modeling of $PM_{2.5}$, ozone, key air toxics, and regional haze. Future multi-pollutant models may include the ability to model a broader array of air toxics as well as greenhouse gases.

Models and data analysis intended to address $PM_{2.5}$ could be beneficial for use in addressing ozone, visibility impairment, and climate change. States that undertake multi-pollutant assessments as part of their attainment demonstration have the opportunity to assess the impact of their $PM_{2.5}$ strategies on ozone, visibility, and climate programs to ensure that optimal emission reduction strategies are developed to the extent possible. This could facilitate addressing all of these pollutants in a more cost effective manner.

States may also find it desirable to assess the impact of $PM_{2.5}$, ozone, and/or regional haze control strategies on toxic air pollutants regulated under the CAA or under state air toxic initiatives. Given the relationships that exist between air toxics and the formation of $PM_{2.5}$ and ozone, states may find that controls can be selected to meet goals for $PM_{2.5}$ and/or ozone attainment as well as those of specific air toxic programs.

3. Comments and Response

Comments: Some commenters urged the EPA to provide assistance to those states that might be precluded from developing Multi-Pollutant SIPs due to lack of resources. Other commenters stated the EPA should support the states' use of various approaches and tools suggested the EPA make the Control Strategy (CoST) tool fully available, as well as provide any necessary training to facilitate states' ability to effectively use the tool. The commenter also suggested that the EPA entertain the possibility for states to demonstrate that the controls put in place to comply with multi-pollutant CAIR and CSAPR are valid and should be accepted as part of attainment demonstrations; allowing states to credit emissions reductions that have occurred.

Response: The Control Strategy Tool (CoST) is a component of the EPA's Emissions Modeling Framework that is a client-server system developed to support emissions modeling. CoST was developed by the EPA to model the emissions reductions and engineering costs

associated with control strategies applied to point, area, and mobile sources of air pollutant emissions to support the analyses of the EPA air pollution policies and regulations. Links to the software and documentation are available at the EPA's CoST Web site at *http://www3.epa.gov/ttnecas1/cost.htm*. Note that because of resource limitations, the EPA is not able to provide any support for the installation or operation of CoST outside of the agency.

G. Measures to Ensure Appropriate Protections for Overburdened Populations

1. Summary of Proposal

The EPA requested comments on ways that states can provide public health protection specifically for overburdened populations when preparing attainment plans for the $PM_{2.5}$ NAAQS.

2. Final Rule

Environmentally overburdened, underserved, and economically distressed communities may be subject to a higher risk of pollutant-related health effects than the general population because they may be exposed to higher pollutant concentrations than the general population; they may experience a larger health impact at a given pollutant concentration; or they may be adversely affected by lower pollutant concentrations than the general population.[264] Thus, the NAAQS review process inherently takes into consideration appropriate environmental justice factors as part of the standard-setting process for each pollutant.

Section 109(d) of the CAA requires the EPA to periodically review (every 5 years) the science upon which the standards are based and the standards themselves. The policy assessment

[264] *See* EPA 2011. Policy Assessment for the Review of the Particulate Matter National Ambient Air Quality Standards, Office of Air Quality Planning and Standards, Research Triangle Park, NC, EPA 452/R-11-003, April 2011.

for the 2012 PM NAAQS review (U.S. EPA, 2011a, p. 2-60) observed that the highest concentrations of $PM_{2.5}$ in an area tend to be measured at monitors located in areas where the surrounding populations are more likely to live below the poverty line and to have higher percentages of minorities. In its 2012 review of the PM NAAQS, the EPA revised the primary annual $PM_{2.5}$ standard by lowering the level to 12.0 micrograms per cubic meter ($\mu g/m^3$) to provide increased protection against health effects associated with long- and short-term $PM_{2.5}$ exposures.[265] The agency also 1) revised the form of the primary annual $PM_{2.5}$ standard to eliminate the spatial averaging provisions to avoid potential disproportionate impacts on at-risk populations; and 2) directed states to relocate a limited number of existing monitors to near-roadway sites in large urban areas. Both of these actions were informed by scientific evidence that underscored the potentially disproportionate exposure to high $PM_{2.5}$ concentrations and therefore disproportionate risk to low-income and minority populations.

In conjunction with these revisions, the EPA retained the primary 24-hour $PM_{2.5}$ standard, as revised in 2006 (71 FR 61144, October 17, 2006), to provide supplemental protection against health effects associated with short-term $PM_{2.5}$ exposures, especially in areas with high peak $PM_{2.5}$ concentrations. This suite of primary annual $PM_{2.5}$ standards provides increased public health protection, including the health of at-risk populations which include children, older adults, persons with pre-existing health and lung disease, and persons of lower socioeconomic status, against a broad range of $PM_{2.5}$-related effects that include premature

[265] 78 FR 3086 (January 15, 2013).

mortality, increased hospital admissions and emergency department visits, and development of chronic respiratory disease. [266]

Relationship between direct $PM_{2.5}$ emissions and $PM_{2.5}$ precursor emissions reductions and at-risk populations. Sources of direct PM emissions have their greatest impact on $PM_{2.5}$ concentrations and public health in the general vicinity of the source (e.g., within 10 miles), while sources of precursor emissions can contribute to $PM_{2.5}$ concentrations more than 100 miles away and are considered to have a more regional impact. To date, state $PM_{2.5}$ attainment plans have generally relied to a greater extent on reductions of precursor pollutants rather than on reductions of direct $PM_{2.5}$ emissions. Studies show, however, that on a per ton basis, the reduction of a ton of direct $PM_{2.5}$ emissions leads to greater health benefits than the reduction of a ton of SO_2 or NO_x.[267]

The process for developing attainment plans for the current and future $PM_{2.5}$ NAAQS presents a potential opportunity to target the health protections afforded by the NAAQS, as the EPA expects that attainment for the 2012 $PM_{2.5}$ NAAQS and future $PM_{2.5}$ NAAQS in nonattainment areas with the most severe pollution problems may need to give greater emphasis

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[266] In the final 2012 PM NAAQS rule, based on information presented in the *Integrated Science Assessment for Particulate Matter* (U.S. EPA, 2009, sections 2.2.1 and 8.1.7), the EPA made a finding that persons with lower socioeconomic status are at increased risk for experiencing adverse health effects related to PM exposures (78 FR 3085, January 15, 2013, at page 3104). Persons with lower socioeconomic status (SES) have been generally found to have a higher prevalence of pre-existing diseases, limited access to medical treatment, and increased nutritional deficiencies, which can increase this population's risk to PM-related effects (77 FR 38911, June 29, 2012).

[267] *See* Fann, N., Fulcher, C., and B. Hubbell, 2009. The Influence of location, source, and emission type in estimates of the human health benefits of reducing a ton of air pollution. Air Quality, Atmosphere & Health. Volume 2, Number 3, 169-176, June 2009. *See also* Fann et. al., 2011. Maximizing health benefits and minimizing inequality: incorporating local-scale data in the design and evaluation of air quality policies. Society for Risk Analysis, vol. 31, no. 6, p. 908–922, June 2011.

to reducing direct $PM_{2.5}$ emissions in combination with efforts already underway to further reduce precursor emissions. Placing greater emphasis on reducing emissions from sources of direct $PM_{2.5}$ (e.g., certain industrial facilities located in more densely populated areas; areas with high motor vehicle and other diesel engine emissions, such as rail yards and near major roadways; and, areas with high wood smoke emissions) could provide the added benefit of reducing exposure to $PM_{2.5}$ in low-income and minority communities.

Options for states to consider to ensure appropriate protections from $PM_{2.5}$ exposure for overburdened populations. The EPA believes that states have sufficient flexibility and discretion under the CAA in implementing their attainment strategies to focus resources on controlling those sources of emissions that directly and adversely affect low-income and other at risk populations. By reducing impacts on at-risk populations, states can maximize health benefits, thereby creating greater net benefits for the state in a cost-effective manner.[268] In addition, reducing adverse impacts to low-income and minority populations advances the environmental justice goal of fair treatment for these populations.

There are a number of actions that states could take to focus resources in this way. Some of these actions can help identify areas where additional ambient monitoring may be needed in low income and overburdened communities. Such information can be used to support updates to the state's annual monitoring plan.

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[268] Wesson, K., Fann, N., Morris, M, Fox, T., Hubbell, T., 2010. A multipollutant, risk-based approach to air quality management. Case study for Detroit. *Atmospheric Pollution Research*, 1, 296-304. The study compared air quality control strategies and concluded that the multi-pollutant, risk-based approach was able to produce approximately two times greater monetized benefits through avoided health impacts and was more cost effective than a pollutant-by-pollutant approach.

Screening is a useful first step in understanding or highlighting locations that may be candidates for further review. The EPA has developed EJSCREEN, a public screening tool that allows users to access high-resolution environmental and demographic information for locations in the United States, and compare their selected locations to the rest of the state, the EPA region, or the nation. The tool may help users identify areas with minority and/or low-income populations, potential environmental quality issues, a combination of environmental and demographic indicators that is greater than usual, and other factors that may be of interest. Other examples of actions to support updates to the annual monitoring plan include:

- Develop databases and online mapping tools that enable users (including state staff, public, and the regulated community) to understand where sources of direct $PM_{2.5}$ emissions are located and where new or modified sources of emissions could have potential impacts on low income and other overburdened communities;
- Incorporate existing mapping tools that identify target areas in the attainment plan development process and related actions; and,
- Analyze emissions data, ambient data, and available modeling to identify potential unmonitored $PM_{2.5}$ hotspots in areas with a high percentage of low income, minority or indigenous persons (*see* Section III.E of this preamble for further discussion of this option).

Once target areas for addressing these sensitive population needs within a nonattainment area have been identified, the state could consider taking any of the following actions, which help target emissions reductions that may be needed to attain the $PM_{2.5}$ NAAQS:

- Prioritize the selection of control measures that target reductions of direct $PM_{2.5}$, particularly from sources located in "at-risk" areas as part of the state's RACM and

RACT analysis (for Moderate nonattainment areas) or BACM and BACT analysis (for Serious nonattainment areas), as well as other measures needed to demonstrate attainment (*see* Sections III.D and V.D of this preamble, respectively, of this preamble for further discussion of this option);

- Improve the understanding of the potential impact of minor sources by improving or generating an emissions inventory for such minor sources, including sources that are not currently required to report emissions, to generate options on how emissions can be reduced in the target area;
- Design voluntary programs to reduce VMT and mobile source-related $PM_{2.5}$ emissions (e.g., diesel retrofits);
- Incorporate environmental justice criteria into the alternatives analysis to ensure appropriate siting and require cumulative impact studies for proposed projects;
- Eliminate exemptions from and/or lower thresholds for minor source permitting;
- Prioritize targeted enforcement strategies; and
- Develop a list of potential supplemental environmental projects (SEPs)[269] that could be applied in the target area.

In addition to the previous steps, states could increase opportunities for meaningful involvement of community groups in attainment plan development, annual monitoring network

[269] For more information on SEPs, go to *https://www.epa.gov/enforcement/supplemental-environmental-projects-seps*.

plan reviews, and permitting processes[270] for at-risk and minority populations by taking the following steps:

- Develop advisory boards and/or develop enhanced notice-and-comment requirements for low income and minority communities to assure meaningful involvement relative to projects that impact their communities;
- Provide special notice of important actions affecting target areas in appropriate languages and with attention to cultural barriers;
- Provide advance notification for low income and minority communities of upcoming opportunities for public comment on SIPs, ambient air monitoring plans, and other relevant actions such as permit actions;
- Maintain multi-lingual Web sites and offer translators for public meetings and hearings; and,
- Coordinate with the state's EJ coordinator, if applicable, to assist with outreach efforts.

3. Comment and Response

Comment: Some commenters supported the EPA's recommendations for measures to ensure protections for overburdened communities, but stated that the EPA's proposal to allow areas to ignore near-roadway monitors is inconsistent with these objectives. The commenter stated that communities near heavily trafficked areas tend to be disproportionately low-income minority communities that suffer from disproportionately higher $PM_{2.5}$ exposure risks; and that the EPA and states should address the information gaps that disempower these communities in their ability to protect themselves from pollution sources. The commenter also stated that making

[270] *See* 78 FR 27220 (May 9, 2013) notice of availability, "EPA Activities To Promote Environmental Justice in the Permit Application Process."

sources disclose and report compliance information and providing that information in easy to access formats would go a long way to improve the ability of these communities to be informed of their risks and to assure compliance in their communities.

Response: The EPA agrees that near-road monitoring data should not be ignored in future attainment planning. However, the EPA wishes to clarify that the statements in the proposal referenced the fact that the near-road monitors were not required to be in place before January 1, 2015. Compliance with the $PM_{2.5}$ standards is based on 3 years of complete, quality-assured data at a monitor. Thus, the earliest that these monitors would have valid design values would be in early 2018 (based on data from 2015-2017). This timing makes it unlikely that sufficient data from these monitors will be available to be considered in attainment demonstrations that are due in 2016. In addition, the base modeling year of the attainment demonstration may pre-date the startup date of the near-road monitor(s). In this case, it may be possible to consider the near-road data in the attainment demonstration, but the recommended default projection methodology may not be applicable (since the time period of the near-road data may not correspond to the 5 year time period centered about the base modeling year, as recommended in the modeling guidance). Additionally, near-road $PM_{2.5}$ monitors are only required in the 27 largest metropolitan areas of the country, and some $PM_{2.5}$ nonattainment areas may not have any near-road monitoring sites. Thus, when complete data from near-road $PM_{2.5}$ ambient monitors become available, the data should be used by states and the EPA for all aspects of the NAAQS implementation process, from attainment planning to the determination of attainment, in a manner similar to any other quality-assured $PM_{2.5}$ monitoring data. States should consult with the appropriate the EPA regional office to determine how and when near-road data should be used in the $PM_{2.5}$ NAAQS implementation process for specific nonattainment areas.

With regard to the comment about having easy access to facility compliance information, the EPA directs the commenter to the Enforcement and Compliance History Online web site to search for facilities to assess compliance with environmental regulations. The site provides the ability to investigate pollution sources, examine and create enforcement-related maps, or explore an individual state's performance. As noted earlier in this section, the EJSCREEN tool can also provide important information about estimated pollution impacts in specific communities.

H. Tribal Issues

The 1998 Tribal Authority Rule (TAR) (40 CFR part 49), which implements section 301(d) of the CAA, gives tribes the option of developing Tribal Implementation Plans (TIPs). Specifically, the TAR provides for the tribes to be treated in the same manner as a state in implementing certain sections of the CAA. However, tribes are not required to develop implementation plans. The EPA determined in the TAR that it was inappropriate to treat tribes in a manner similar to a state with regard to specific plan submission and implementation deadlines for the NAAQS-related requirements, including, but not limited to, such deadlines in CAA sections 110(a)(1), 172(a)(2), 182 187, and 191. *See* 40 CFR 49.4(a). In addition, the EPA determined it was not appropriate to treat tribes similarly to states with respect to provisions of the CAA requiring as a condition of program approval the demonstration of criminal enforcement authority or providing for the delegation of such criminal enforcement authority. *See* 40 CFR 49.4(g). To the extent a tribe is precluded from asserting criminal enforcement authority, the federal government will exercise primary criminal enforcement responsibility. *See* 40 CFR 49.8. In such circumstances, tribes seeking approval for CAA programs provide potential investigative leads to an appropriate federal enforcement agency.

If a tribe elects to do a TIP, the agency will work with the tribe to develop an appropriate schedule that meets the needs of the tribe and does not interfere with the attainment of the NAAQS in other jurisdictions. The tribe developing a TIP can work with the EPA Regional Office on the appropriateness of addressing RFP and other substantive SIP requirements that may or may not be appropriate for the tribe's situation.

The CAA and the TAR provide tribes opportunity and flexibility, but not the obligation to develop a TIP to address the NAAQS. If a tribe elects to develop a TIP, the TAR offers flexibility for the tribe to identify and implement on a case-by-case basis only those CAA programs or reasonably severable program elements needed to address their specific air quality problems. In the TAR, the EPA described this flexible implementation approach as a modular approach. Each tribe may evaluate the particular activities, including potential sources of air pollution within the exterior boundaries of its reservation (or within non-reservation areas for which it has demonstrated jurisdiction), that cause or contribute to its air pollution problem. A tribe may adopt measures for controlling those sources of $PM_{2.5}$-related emissions, as long as these elements of the TIP are reasonably severable from other CAA requirements. A TIP must include regulations designed to solve specific air quality problems for which the tribe is seeking the EPA's approval, as well as a demonstration that the tribal air agency has the authority from the tribal government to develop and run their program, the capability to enforce their rules, and the resources to implement the program they adopt. In addition, the tribe must receive an eligibility determination from the EPA to be treated in the same manner as a state for the particular matter at issue and to receive authorization from the EPA to run a CAA program.

The EPA would review and approve, where appropriate, these TIPs as one step of an overall air quality plan to attain the NAAQS. A tribe may step in later to add other elements to

the plan, or the EPA may step in to fill gaps in the air quality plan as necessary or appropriate. In approving a TIP, the agency would evaluate whether the plan appropriately coordinates with the overall air quality plan for an area when tribal lands are part of a multi-jurisdictional area.

Because many $PM_{2.5}$ nonattainment areas will include multiple jurisdictions, and in some cases both Indian country and state lands, it is particularly important for the tribes and the states to work together to coordinate their planning efforts. States need to incorporate Indian country emissions in their base emissions inventories if Indian country is part of an attainment or nonattainment area.[271] Tribes and states should coordinate their planning activities as appropriate to ensure that neither is adversely affecting attainment of the NAAQS in the area as a whole. Coordinated planning in these areas will help ensure that the planning decisions made by the states and tribes complement each other and that the nonattainment area makes reasonable progress toward attainment and ultimately attains the applicable $PM_{2.5}$ NAAQS. In reviewing and approving individual TIPs and SIPs, the EPA will determine if together they are consistent with the overall air quality needs of an area.

To date, very few tribes have submitted for the EPA's approval TIPs covering areas over which they have jurisdiction. In the absence of a TIP, the EPA is authorized under the TAR to implement CAA programs in such areas as necessary or appropriate. For example, an unhealthy

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[271] On January 17, 2014, the United States Court of Appeals for the District of Columbia Circuit issued a decision vacating the EPA's 2011 rule titled "Review of New Sources and Modifications in Indian Country" (76 FR 38748, July 1, 2011) with respect to non-reservation areas of Indian country (*See Oklahoma Department of Environmental Quality v. EPA*, 740 F.3d 185 (D.C. Cir. 2014)). Under the court's reasoning, with respect to CAA state implementation plans, a state has primary regulatory jurisdiction in non-reservation areas of Indian country (i.e., Indian allotments located outside of reservations and dependent Indian communities) within its geographic boundaries unless the EPA or a tribe has demonstrated that a tribe has jurisdiction over a particular area of non-reservation Indian country within the state.

air quality situation on an Indian reservation may require the EPA to develop a FIP to reduce emissions from sources on the reservation. Likewise, if the agency determines that sources in an area under tribal jurisdiction could interfere with a larger nonattainment area meeting the NAAQS by its attainment date, it would develop a FIP for those sources in consultation with the tribe as necessary or appropriate.

States have an obligation to notify other states in advance of any public hearing(s) on their state plans if such plans will significantly impact such other states. 40 CFR 51.102(d)(5). Under section 301(d) of the CAA and the TAR, tribes may become eligible to be treated in a manner similar to states (TAS) for this purpose. Affected tribes with this status must also be informed of the contents of such state plans and given access to the documentation supporting these plans. In addition to this mandated process, the EPA encourages states to extend the same notice to all affected tribes, regardless of their TAS status.

Executive Orders and the EPA's Indian policies generally call for the EPA to coordinate and consult with tribes on matters that affect tribes. Executive Order 13175, titled, "Consultation and Coordination with Indian Tribal Governments" requires the EPA to develop a process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have Tribal implications." In addition, the EPA's policies include the agency's 1984 Indian Policy relating to Indian tribes and implementation of federal environmental programs, the 2014 Office of Air and Radiation's "Handbook for Interacting with Tribal Governments," and the "EPA Policy on Consultation and Coordination with Indian Tribes." Consistent with these policies, the EPA intends to meet with tribes on activities potentially affecting the attainment and maintenance of the current and future $PM_{2.5}$ NAAQS in Indian country, including agency actions on SIPs. As such, it would be helpful for states to work with tribes with land that is part of the

same air quality area during the SIP development process and to coordinate with tribes as they develop their SIPs.

I. Voluntary Programs for Reducing Ambient $PM_{2.5}$

1. PM Advance Program

The EPA believes there are significant advantages for states, tribes and local agencies to take steps to reduce direct $PM_{2.5}$ emissions and emissions of $PM_{2.5}$ precursors as early as possible. First and foremost, early reductions help to achieve cleaner air sooner, and help to ensure continued health protection. Second, early steps could help an area avoid a nonattainment designation in the first place, or for an area eventually designated as nonattainment, early reductions could help bring the area back into attainment sooner, which may lead to qualifying for a CDD and subsequent suspension of attainment planning requirements as described in Section IX.C of this preamble. In addition, early action to improve air quality can help an eventual nonattainment area, particularly an area that has never been designated nonattainment before, to establish working relationships between key stakeholders. The EPA's expectation is that early actions to reduce emissions in such areas would be less resource-intensive than actions taken once a nonattainment designation has been made, since at that point the implementation of controls would need to occur in conjunction with actions to comply with other requirements such as nonattainment NSR and transportation conformity.

In January 2013, the EPA began a new early emissions reduction program for attainment areas called "PM Advance," which is much like the related "Ozone Advance" program that began in April 2012. For additional information and a list of areas that are currently participating in the program, *see https://www.epa.gov/advance*.

2. Residential Wood Smoke Programs

The EPA recognizes that residential wood smoke is a concern for many nonattainment areas. The EPA estimates that wood stoves, indoor wood furnaces, hydronic heaters and fireplaces emit more than 382,000 tons of $PM_{2.5}$ into the air throughout the country each year – mostly during the winter months. Residential wood smoke can increase fine particle pollution to levels that cause significant health concerns (*e.g.*, asthma attacks, heart attacks, premature death). Wood smoke causes many counties throughout the U.S. to either exceed the national health-based standards for fine particles, or places them on the cusp of exceeding the standards. Because wood stoves, hydronic heaters and other similar appliances can be used around the clock in residential areas, they can cause significant and varying health and quality of life issues.

To reduce fine particle pollution, many $PM_{2.5}$ nonattainment areas will need to address residential wood smoke. The EPA has developed the "Strategies for Reducing Residential Wood Smoke" document that provides education and outreach tools, information on regulatory approaches to reduce wood smoke, as well as information about voluntary programs that communities around the country have used.[272] In addition, it includes methods for calculating emissions reductions, funding ideas and the basic components of a wood smoke reduction plan

[272] On February 3, 2015, the EPA strengthened the New Source Performance Standards (NSPS) for new residential wood heaters and established NSPS for other new wood heaters, including outdoor and indoor wood-fired boilers (also known as hydronic heaters). The standards will reduce emissions of direct $PM_{2.5}$ as well as carbon monoxide, VOC, air toxics (including formaldehyde, benzene and polycyclic organic matter), and black carbon. *See http://www2.epa.gov/residential-wood-heaters.*

that can be adopted into a SIP as an enforceable control measure.[273] To access the document, go to *https://epa.gov/burnwise/burn-wise-strategies-reducing-residential-wood-smoke.* For more information on the EPA's wood smoke reduction program, *see https://www.epa.gov/burnwise*.

J. Improved Stationary Source Emissions Monitoring

1. Summary of Proposal

For purposes of demonstrating compliance with the EPA's air quality regulatory requirements, the EPA, states, and sources rely on two basic types of monitoring: ambient air quality monitoring and stationary source emissions monitoring. Ambient air quality monitoring entails collecting and measuring samples of criteria pollutants in ambient air to evaluate air quality as compared to clean air standards and historical information. Stationary source emissions monitoring, on the other hand, entails collecting and using measurement data (or other information) from individual stationary sources to demonstrate compliance with emissions standards, to assess process or control device performance, or to verify work practices. While ambient air quality monitoring is used to assess compliance with the NAAQS, stationary source emissions monitoring is used to assess compliance with source-specific regulations under programs like the New Source Performance Standards (NSPS), the National Emissions Standards for Hazardous Air Pollutants (NESHAP), the compliance assurance monitoring (CAM) program, the title V air operating permits program, and the acid deposition control program, as well as specific SIP control measures.

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[273] For further guidance on incorporating voluntary measures into a SIP, *see* "Incorporating Emerging and Voluntary Measures in a State Implementation Plan (SIP)." U.S. EPA. Office of Air and Radiation. September 2004. Available at *http://www3.epa.gov/ttn/caaa/t1/memoranda/evm_ievm_g.pdf*.

Accurate stationary source emissions monitoring is also critical for the purposes of developing accurate emissions inventories and in order to identify appropriate control measures to reduce emissions from stationary sources. In addition, after control measures are in place, stationary source emissions monitoring provides process and control device performance information to the facility operator so that appropriate corrective action can be taken if indicated that emission levels may exceed applicable thresholds. Thus, appropriate stationary source emissions monitoring requirements, like the control measures with which they are associated, are a fundamental element of an approvable SIP.

Because of the important role that effective stationary source emissions monitoring can play in informing the development of attainment strategies for $PM_{2.5}$ NAAQS nonattainment areas, the EPA is interested in applied best practices for stationary source emissions monitoring that could be included in guidance for other stationary sources and states. As a result of this interest, the EPA sought to gather information about ways to make the source emissions monitoring data collection process easier and more transparent. In the proposal, the EPA therefore asked for information regarding appropriate examples and supporting data from individual sources and states with experience in this area to inform such future guidance. The EPA sought comment on specific topics and questions regarding source monitoring techniques and asked commenters to submit any examples of improved stationary source emissions monitoring and any other methodologies—complete with equations and explanations—for estimating emissions reductions due to improved monitoring.

2. Final Rule

The EPA did not propose any specific changes to source monitoring requirements for $PM_{2.5}$ and is therefore not finalizing any specific requirements, beyond what is required elsewhere in the final rule.

3. Comments and Responses

Comment. Several commenters focused on critiquing PM CEMS, PM CPMS and BLDS technology and claim that improved monitoring changes the stringency of existing rules and requires rulemaking. The commenters provided no examples or specific information in response to the request for information.

Response. We appreciate the information submitted by the commenters, but we are not responding to the comments here because they are not directly pertinent to the rule being finalized. The EPA will continue to explore and implement innovative, cost-effective ideas that offer tangible incentives for improved source monitoring to be adopted as part of the associated emissions limitations that will help achieve additional reductions from stationary sources and bring areas into attainment for the $PM_{2.5}$ NAAQS in a timely way. *See* the response to comments document for more detailed information.

K. Stationary Source Test Methods for Emissions of Condensable $PM_{2.5}$

1. Summary of Proposal

As discussed in the proposal, direct $PM_{2.5}$ is comprised of two components: Filterable $PM_{2.5}$ and condensable $PM_{2.5}$ emissions. Accurate test methods for condensable $PM_{2.5}$ emissions have only been recently developed and approved by the EPA, and in the proposal the EPA explained that use of these test methods, including methods to quantify condensable $PM_{2.5}$ emissions, were essential for identifying sources of direct $PM_{2.5}$ emissions which, if better

controlled, can help to bring a $PM_{2.5}$ nonattainment area into attainment. However, the EPA did not propose any changes to those test methods.

The EPA did propose to require that, where a state needs to adopt new or revised control measures for direct $PM_{2.5}$ from sources in a nonattainment area, the state must specify $PM_{2.5}$ emission limits in its SIP that include both filterable and condensable emissions. In addition, compliance testing of those sources must include measurement of condensable emissions (such as through the use of Method 202). The EPA proposed that any new or revised emission limit used as a control measure to bring an area into attainment for any current or future $PM_{2.5}$ NAAQS must use methods that measure $PM_{2.5}$ or total PM including both filterable and condensable particulate matter.

The 2007 $PM_{2.5}$ Implementation Rule required, beginning on January 1, 2011, that states take into consideration condensable $PM_{2.5}$ emissions when establishing emission limits for stationary sources as part of any control strategy for $PM_{2.5}$ NAAQS nonattainment areas. [274] This date coincided with the effective date of the agency's revisions to test methods for measuring filterable PM_{10} emissions from stationary sources (Method 201A) and for measuring condensable PM emissions from stationary sources (Method 202). [275] The revisions to those test methods added procedures to measure $PM_{2.5}$ filterable and condensable particulate material and increased the precision of Method 202 and improved the consistency in the measurements obtained between source tests performed under different regulatory authorities.

In the preamble to the 2007 $PM_{2.5}$ Implementation Rule, the EPA explained that the use of the (then anticipated) revisions to the EPA Method 201A combined with Method 202 to

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[274] 72 FR 20586 (April 25, 2007).
[275] 75 FR 80118 (December 21, 2010).

obtain measured source specific emissions of $PM_{2.5}$ would improve the quality of emissions inventories for stationary sources and would aid in the development of a more reliable attainment strategy, as sources that may have a considerable amount of condensable $PM_{2.5}$ emissions could be better characterized with the new methods.

2. Final Rule

The EPA is finalizing the $PM_{2.5}$ emissions limit and testing requirement as proposed. For sources that are required to adopt a new or revised direct $PM_{2.5}$ emissions limit as part of the attainment demonstration (including, but not limited to, for RACT, BACT, or MSM), the state must specify $PM_{2.5}$ emission limits in its SIP that include both filterable and condensable emissions. In addition, compliance testing requirements for those sources must include both measurement of filterable and condensable emissions. Existing filterable PM emission limitations that are not being revised as part of a Moderate area or Serious area attainment plan can remain expressed in terms of filterable PM and can rely on the existing test method used by the state for compliance determination.

The EPA continues to believe that using these improved test methods, including methods to quantify condensable $PM_{2.5}$ emissions, can help identify sources of direct $PM_{2.5}$ emissions which, if better controlled, can help to bring a $PM_{2.5}$ nonattainment area into attainment. Likewise, use of these test methods may help a state identify sources whose condensable emissions may have been incorrectly estimated and therefore may not provide meaningful $PM_{2.5}$ control opportunities.

3. Comments and Responses

Comment: Some commenters stated that the EPA should make clear that as long as testing and monitoring is required for any new filterable and/or condensable PM emission

limitation imposed, testing for "total $PM_{2.5}$" is not required and the EPA should allow states flexibility in determining the best way to demonstrate compliance with any new emission limitations. The new emission limitation could take the form either of a limitation on condensable $PM_{2.5}$ or a limitation on total direct $PM_{2.5}$ emissions. The commenter further stated the EPA should make clear that states that specify condensable PM or total $PM_{2.5}$ emission limitations are not required to adopt Method 202 as the compliance test method.

Response: In the final rule, the EPA is requiring new or revised $PM_{2.5}$ emissions limits and associated source testing to account for condensable emissions, but the EPA is not imposing any specific source testing requirements that would require total $PM_{2.5}$ testing or the use of a specific test method. The EPA acknowledges that states have flexibility to determine the necessary emissions limitations of $PM_{2.5}$ to meet SIP requirements for the NAAQS attainment. When states assess the contribution of the filterable and condensable PM component to $PM_{2.5}$ they may require stationary source tests that include both filterable $PM_{2.5}$ and condensable particulate matter to ensure emission limits are attained by subject facilities. Since we recognize that primary $PM_{2.5}$ emissions can be measured with the combination of several promulgated test methods depending on the stationary source emission temperature and moisture content, states have the flexibility to require the appropriate filterable and condensable particulate measurement methods based on source conditions.

Comment: Some commenters agreed with the EPA's proposal not to require consideration of condensable PM in any existing emission limitations that are not otherwise being revised. The commenters stated that no purpose would be served by requiring states to include condensable PM in such standards if no revision is necessary to demonstrate attainment. Other commenters objected to the EPA's proposal to not require states to update all existing PM

emission limitations to include limitations on condensable PM. The commenters stated the EPA's proposal is nonsensical and undermines any ability to demonstrate compliance with the Act. The commenters stated that, by the EPA's own admission, inventories that do not reflect measured condensables from direct $PM_{2.5}$ sources are not an "accurate" inventory of "actual emissions." The commenters further stated that, similarly, areas could not satisfy the criteria for RACM or BACM, or demonstrate expeditious attainment if the existing state emission limitations are not required to be updated to account for condensable emissions from these sources.

Response. The EPA agrees with the commenters who maintain that existing $PM_{2.5}$ emissions limits do not need to be revised to include emissions limits for condensable PM for sources from which additional emissions reductions are not needed in order to demonstrate attainment. The EPA does not agree that all existing direct $PM_{2.5}$ emissions limits in the SIP have to include emissions limits that account for or specifically address condensable PM. However sources with new or revised $PM_{2.5}$ emissions limits and associated source testing must account for condensable emissions.

If the state has submitted an attainment demonstration that includes an adequate RACT, BACT, and/or MSM analysis, and has taken into account all known emissions of filterable and condensable $PM_{2.5}$ in the area, then there is no need to require new condensable $PM_{2.5}$ emissions limits and testing for sources that were not needed to be additionally controlled for attainment purposes. The state may want to require additional condensable $PM_{2.5}$ emissions limits and testing to gain a better understanding of the sources in the nonattainment area (especially for sources which may be most likely to emit condensables). This could provide additional information for future SIPs and control programs if nonattainment persists. However, unless

specific direct $PM_{2.5}$ emissions reductions are shown to be needed in order for the area to attain the NAAQS, there does not need to be a SIP requirement to include new condensable emissions limits and testing for all existing sources with $PM_{2.5}$ emissions limits.

Additionally, the commenters stated that emissions inventories would not be "accurate" and states could not satisfy their RACM/BACM requirements if condensable emissions were not included in the SIP. Regardless of emissions limits and source testing requirements, quantification and reporting of filterable and condensable $PM_{2.5}$ emissions is required as part of the emissions inventory and RACT/BACT rule requirements. In some cases, condensable $PM_{2.5}$ information is available from previous source testing. In other cases, condensable $PM_{2.5}$ emissions must be estimated through the use of emissions factors that have been developed from source testing of similar sources. States are therefore already required to take into account both filterable and condensable emissions as part of their inventory and control strategy (RACT/BACT) development. *See* section IV.B of this preamble for more information on emissions inventory requirements, section IV.D of this preamble for more information on RACT requirements, and section VI.D of this preamble for more information on BACT requirements.

X. Revocation of the 1997 Primary Annual $PM_{2.5}$ NAAQS

A. Summary of the Proposal

The EPA proposed two options for revoking the 1997 primary annual $PM_{2.5}$ NAAQS and sought comment on whether to revoke the NAAQS at the current time.

The two proposed options were:

- *Option 1*: Revoke the 1997 primary annual $PM_{2.5}$ NAAQS for all purposes *in attainment areas* for that NAAQS 1 year after the effective date of the designations for the 2012 primary annual $PM_{2.5}$ NAAQS; and

- *Option 2*: Revoke the 1997 primary annual $PM_{2.5}$ NAAQS for all purposes *in all nonattainment and attainment areas* for that NAAQS 1 year after the effective date of the designations for the 2012 primary annual $PM_{2.5}$ NAAQS.

Under the first proposed option, the EPA would revoke the 1997 primary annual $PM_{2.5}$ NAAQS for all purposes in areas that are designated as attainment for that NAAQS 1 year after the effective date of designations for the 2012 primary annual $PM_{2.5}$ NAAQS, as well as in the future as additional areas are redesignated as attainment areas after the initial revocation. The areas addressed by this option are:

- those that were originally designated as attainment areas for the 1997 annual $PM_{2.5}$ NAAQS; and

- those that were originally designated as nonattainment but have since or will in the future be redesignated to attainment for that NAAQS.

Under this option, the EPA would not revoke the 1997 primary annual $PM_{2.5}$ NAAQS in any area as long as it is designated nonattainment for that NAAQS. This option is consistent with the approach established for the transition to the current lead and SO_2 NAAQS.

Areas designated nonattainment for the 2012 primary annual $PM_{2.5}$ NAAQS would be required under Option 1 to comply with applicable CAA requirements as set forth in the CAA. For transportation conformity purposes, these requirements began to apply 1-year after the effective date of designations and include using adequate or approved SIP motor vehicle emissions budgets for the 1997 annual $PM_{2.5}$ NAAQS or the 2006 24-hour $PM_{2.5}$ NAAQS where they exist until the area has approved or adequate budgets for the 2012 primary annual $PM_{2.5}$

NAAQS.[276] Areas that have adequate or approved motor vehicle emissions budgets for both the 1997 annual $PM_{2.5}$ NAAQS or the 2006 24-hour $PM_{2.5}$ NAAQS should refer to Question 3.3 in EPA's "Implementing Transportation Conformity Guidance for 2012 $PM_{2.5}$ Nonattainment Areas" for additional information on which budgets to use in conformity determinations prior to having adequate or approved budgets for the 2012 primary annual $PM_{2.5}$ NAAQS.[277] The use of such budgets serves as the appropriate anti-backsliding measure for transportation conformity purposes.

Under the second proposed option, the EPA would revoke the 1997 primary annual $PM_{2.5}$ NAAQS for all CAA purposes in all nonattainment and attainment areas 1 year after the effective date of designations for the 2012 primary annual $PM_{2.5}$ NAAQS. The requirements associated with revoking the 1997 primary annual $PM_{2.5}$ NAAQS in attainment areas for that NAAQS would be the same as those that would apply under Option 1. However, revoking the 1997 primary annual $PM_{2.5}$ NAAQS in nonattainment areas for that NAAQS would require anti-backsliding measures for areas designated nonattainment for the 1997 annual $PM_{2.5}$ NAAQS at the time of the revocation. For details on the proposed anti-backsliding measures, refer to the discussion in the proposal for this final rule. (80 FR 15340)

The EPA also requested comment on not revoking the 1997 primary annual $PM_{2.5}$ NAAQS at this time. For additional details on all of the proposed options refer to the proposal. (80 FR 15340)

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[276] Areas that do not have adequate or approved motor vehicle emissions budgets for the 1997 annual $PM_{2.5}$ NAAQS or the 2006 24-hour $PM_{2.5}$ NAAQS would use one of the two interim emissions tests required by 40 CFR 93.109(c)(3) and 40 CFR 93.119(b).
[277] The guidance is available at: *http://www3.epa.gov/otaq/stateresources/transconf/documents/420b15091.pdf.*

The EPA did not propose to revoke the 1997 secondary annual $PM_{2.5}$ NAAQS in this action because that NAAQS has been retained in order to prevent certain welfare effects associated with $PM_{2.5}$.[278]

For details on past revocations of the NAAQS including the 1-hour and 1997 ozone NAAQS and prior SO_2 and lead NAAQS, refer to the proposal for this final rule. (80 FR 15340)

B. Final Rule

The EPA is finalizing the revocation of the 1997 primary annual $PM_{2.5}$ NAAQS for all purposes in attainment areas for that NAAQS as described in Option 1. *See* 40 CFR 50.13(d). The EPA had proposed that the revocation would be effective 1 year after the effective date of designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Those designations were effective on April 15, 2015. (80 FR 2206) Therefore, the proposed effective date of the revocation was effectively April 15, 2016. However, this final rule will not be effective before April 15, 2016. Therefore, the EPA is establishing the effective date of this final rule as the effective date of the revocation of the 1997 primary annual $PM_{2.5}$ NAAQS.

On the effective date of this final rule, the 1997 primary annual $PM_{2.5}$ NAAQS will be revoked for all purposes in all attainment areas for that NAAQS, including the areas that were initially designated attainment for the 1997 annual $PM_{2.5}$ NAAQS. The final rule will have no practical impact on these areas that have always attained the 1997 primary annual $PM_{2.5}$ NAAQS. These areas have never been required to conduct air quality planning for this NAAQS

[278] 78 FR 3086 (January 15, 2013).

for any CAA nonattainment purpose, although these areas would continue to implement applicable PSD requirements.

This final rule also revokes the 1997 primary annual $PM_{2.5}$ NAAQS in areas that have been redesignated to attainment for this NAAQS (i.e., maintenance areas for this NAAQS). These areas will be required to implement their approved maintenance plan for the 1997 primary annual $PM_{2.5}$ NAAQS and their PSD program. The approved maintenance plan can only be revised if the revision meets the requirements of CAA section 110(l) and, if applicable, CAA section 193,

Similarly, all states will be required to continue to implement applicable control requirements in a FIP or approved SIP designed to address the interstate transport requirements of CAA section 110(a)(2)(D)(i) and (ii) with respect to the 1997 primary annual $PM_{2.5}$ NAAQS, such as CAIR or CSAPR. These requirements continue to be necessary for downwind nonattainment areas to make progress towards attainment and to assure that the air quality protection achieved in all areas is maintained into the future. These provisions may only be modified if the revision meets the requirements of section 110(l). A similar provision was finalized to preserve interstate transport requirements with respect to the revocation of the 1997 ozone NAAQS. *See* 40 CFR § 51.1105.

For areas that remain nonattainment for the 1997 annual $PM_{2.5}$ NAAQS, the EPA will continue to redesignate areas to attainment as appropriate. For an area that is redesignated to attainment after the effective date of this final rule, the 1997 primary annual $PM_{2.5}$ NAAQS will be revoked in such an area on the effective date of its redesignation to attainment for that NAAQS. The EPA will not revoke the 1997 primary annual $PM_{2.5}$ NAAQS in any area as long as it is designated nonattainment for that NAAQS. Until the 1997 primary annual $PM_{2.5}$ NAAQS

is revoked, that NAAQS remains in effect, in parallel with the 2012 primary annual $PM_{2.5}$ NAAQS, and continues to apply independently and by its own terms.

After revocation of the 1997 primary annual $PM_{2.5}$ NAAQS in a given area, the designation for that standard is no longer in effect. The only $PM_{2.5}$ designations that remain in effect in areas where the 1997 primary annual $PM_{2.5}$ NAAQS has been revoked are those for the 1997 24-hour $PM_{2.5}$ NAAQS, the 1997 secondary annual $PM_{2.5}$ NAAQS, the 2006 24-hour $PM_{2.5}$ NAAQS and the 2012 primary annual $PM_{2.5}$ NAAQS. However, the EPA is retaining the listing of the designated areas for the 1997 annual $PM_{2.5}$ NAAQS in 40 CFR part 81, for the purposes of identifying which areas remain designated as nonattainment for the 1997 annual $PM_{2.5}$ NAAQS and therefore subject to the requirements of subpart 4 and the areas that have been redesignated to attainment for the 1997 secondary annual $PM_{2.5}$ NAAQS. Accordingly, such references to historical designations of areas where the 1997 primary annual $PM_{2.5}$ NAAQS has been revoked should not be viewed as current designations under CAA section 107(d) for the 1997 primary annual $PM_{2.5}$. As additional areas are redesignated to attainment for the 1997 annual $PM_{2.5}$ NAAQS, the EPA will indicate in the redesignation rulemaking that the 1997 primary annual NAAQS is revoked on the effective date of the redesignation.

The EPA notes that areas designated nonattainment for the 1997 annual $PM_{2.5}$ NAAQS at the time of the final rule's revocation would be required to continue to comply with applicable conformity requirements for that NAAQS. This obligation would continue until the effective date of the redesignation of such an area to attainment for the 1997 annual $PM_{2.5}$ NAAQS. Transportation and general conformity would apply in all areas that are designated nonattainment for the more health protective 2012 primary annual $PM_{2.5}$ NAAQS on April 15, 2016, the end of the conformity grace period (CAA section 176 (c)(c)(6) and 40 CFR 93.102(d)). Any areas that

are also designated nonattainment or redesignated to attainment for the 1997 24-hour $PM_{2.5}$ NAAQS or the 2006 24-hour $PM_{2.5}$ NAAQS are required to continue to make conformity determinations for those NAAQS. *See* Section IX.B of this preamble for more information about conformity implementation including information pertaining to conformity requirements for the 1997 secondary annual NAAQS.

As with other NAAQS revocations, this revocation is framed in the context of the CAA requirements that apply to the NAAQS transitions to ensure that states and nonattainment areas continue to make progress and do not reverse progress, or backslide, from improvements already made in air quality. The CAA contains several provisions indicating Congressional intent not to allow a state to alter or remove provisions from an approved attainment or maintenance plan if the revision would reduce air quality protection. CAA section 193 prohibits modification of a control requirement in effect or required to be adopted as of November 15, 1990 (the date of enactment of the 1990 CAA Amendments), unless such a modification would ensure equivalent or greater emissions reductions. CAA section 172(e), which addresses relaxations of the NAAQS, requires protections for areas that have not attained the NAAQS prior to a relaxation by requiring controls which are at least as stringent as the controls applicable in nonattainment areas prior to any such relaxation. CAA Section 110(l) provides that a SIP revision cannot be approved if it will interfere with attainment or other CAA requirements. Under CAA section 175A(d), an area that is redesignated to attainment may, with an appropriate showing of no interference,

cease to implement a measure that is contained in the SIP at the time of redesignation, but only if that measure is retained as a contingency measure in the area's maintenance plan.[279, 280]

The EPA has concluded that revoking the 1997 primary annual $PM_{2.5}$ NAAQS in attainment areas for that NAAQS is consistent with the CAA and precedent in transitioning from a previous NAAQS to a new, more stringent NAAQS. The approach taken in this final rule is consistent with the approach taken in the transition from the past SO_2 and lead NAAQS to the current NAAQS for those pollutants. Revoking the 1997 primary annual $PM_{2.5}$ NAAQS only in attainment areas ensures that any areas that remain designated nonattainment for the 1997 annual $PM_{2.5}$ NAAQS make progress toward attaining that NAAQS as expeditiously as practicable by implementing the CAA requirements that apply to $PM_{2.5}$ nonattainment areas as described elsewhere in this final rule.

Continued attainment of the 1997 primary annual $PM_{2.5}$ NAAQS in areas that have been redesignated to attainment for that NAAQS will be ensured through the ongoing implementation of the approved maintenance plan that applies in these areas. These areas are required to implement their approved CAA section 175A maintenance plan for the 1997 primary annual $PM_{2.5}$ NAAQS. They are also required to implement a PSD program for the annual $PM_{2.5}$

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[279] Nonattainment areas that were redesignated to attainment with an approved CAA section 175A maintenance plan are referred to throughout this document as "maintenance areas."

[280] Unimplemented requirements in the SIP or those shown to be unnecessary for maintenance can be shifted to the contingency measures portion of the SIP upon redesignation. *See* "Procedures for Processing Requests to Redesignate Areas to Attainment," Memorandum from John Calcagni, Director, Air Quality Management Division, September 4, 1992; "State Implementation Plan (SIP) Requirements for Areas Submitting Requests for Redesignation to Attainment of the Ozone and Carbon Monoxide (CO) National Ambient Air Quality Standards (NAAQS) On or After November 15, 1992," Memorandum from Michael H. Shapiro, Acting Assistant Administrator for Air and Radiation, September 17, 1993. As discussed elsewhere in this document, an exception is made for NNSR, which can be removed from the SIP completely and need not be retained as a contingency measure after redesignation to attainment.

NAAQS, unless they are designated nonattainment for the 2012 primary annual $PM_{2.5}$ NAAQS where an NNSR program would apply.[281] Revisions to the approved maintenance plan can only be made if the revisions meet the requirements of CAA section 110(l) and, if applicable, CAA section 193.

Under the selected option for revocation, it is unnecessary to finalize anti-backsliding requirements that would apply to nonattainment areas for the 1997 primary annual $PM_{2.5}$ NAAQS, because the NAAQS is only being revoked in attainment areas. For former nonattainment areas that have been redesignated to attainment, the EPA has already determined through the redesignation process and approval of maintenance plans that all applicable requirements for the 1997 primary annual $PM_{2.5}$ NAAQS–including anti-backsliding requirements – have been fulfilled. For areas that were initially designated as attainment for both the 1997 annual $PM_{2.5}$ NAAQS and the 2012 primary annual $PM_{2.5}$ NAAQS, the approved PSD SIPs satisfy the obligation to submit an approvable maintenance plan for the 2012 primary annual $PM_{2.5}$ NAAQS under CAA section 110(a)(1).

The NAAQS is not being revoked in nonattainment areas. Therefore, nonattainment areas will continue to comply with the requirements applicable to their classification for the 1997 annual $PM_{2.5}$ NAAQS as described in this final rule. For example, areas classified as Serious will be required to implement BACT and BACM level controls and implement an NNSR program that meets the Serious area requirements. Any areas that do not attain by the Serious area deadline would be required to comply with other requirements including most stringent measures

[281] Areas initially designated as attainment for the 1997 annual $PM_{2.5}$ NAAQS would also be required to continue to implement a PSD program unless an area was designated nonattainment for the 2012 primary annual $PM_{2.5}$ NAAQS or the 2006 24-hour $PM_{2.5}$ NAAQS. In that case, such an area would be required to implement an NNSR program for that NAAQS.

and a 5 percent plan. This would ensure that these areas continue to make progress toward attaining the 1997 annual $PM_{2.5}$ NAAQS and attain that NAAQS as expeditiously as practicable. It would also serve to provide early emissions reductions toward attaining the 2012 primary annual $PM_{2.5}$ NAAQS. When these areas are eligible for redesignation to attainment, they may submit a redesignation request including a maintenance plan for the 1997 primary annual $PM_{2.5}$ NAAQS as required by CAA sections 107(d)(3) and 175A. On the effective date of the approval of the redesignation request and maintenance plan, the 1997 primary annual $PM_{2.5}$ NAAQS would be revoked and the approved maintenance plan along with the implementation of a PSD program for this NAAQS, if they are designated attainment for the 2012 primary annual $PM_{2.5}$ NAAQS, would ensure continued attainment of the 1997 primary annual $PM_{2.5}$ NAAQS.[282] Revisions to the approved maintenance plan can only be made if the revisions meet the requirements of CAA section 110(l) and, if applicable, CAA section 193.

As the EPA proposed, the areas where the NAAQS is being revoked are not required to submit a second 10-year maintenance plan for the 1997 primary annual $PM_{2.5}$ NAAQS because there is no justification for additional maintenance plan burdens to be imposed on these areas solely because at one time they were designated nonattainment under the revoked 1997 primary annual $PM_{2.5}$ NAAQS. Not requiring a second 10-year maintenance plan for these areas helps to minimize the burden associated with preparing SIPs for a succession of the NAAQS of increasing stringency. These areas are required to continue to implement their approved maintenance plans for the 1997 primary annual $PM_{2.5}$ NAAQS. The maintenance plan remains in effect beyond the end of the maintenance period. It may only be revised if the revision complies

[282] Areas designated nonattainment for the 2012 primary annual $PM_{2.5}$ NAAQS would implement a NNSR program for that NAAQS, instead of a PSD program for the 1997 primary annual PM.

with the requirements of CAA section 110(l) and, if applicable, CAA section 193. Any areas that are designated nonattainment for the 2012 primary annual $PM_{2.5}$ NAAQS are required to comply with the applicable CAA requirements as described in this final rule.

The EPA notes that most of the 39 areas that were initially designated as nonattainment for the 1997 annual $PM_{2.5}$ NAAQS have already been redesignated to attainment (*i.e.*, they are maintenance areas) and their approved maintenance plans and PSD programs along with the CAA's anti-backsliding provisions in CAA sections 110(l) and 193 ensure continued attainment of the 1997 primary annual $PM_{2.5}$ NAAQS. If additional areas are redesignated to attainment for the 1997 primary annual $PM_{2.5}$ NAAQS, their approved maintenance plan and PSD program for the 1997 primary annual $PM_{2.5}$ NAAQS would prevent backsliding for that NAAQS. As stated previously, applicable conformity requirements would continue to apply for the 1997 annual $PM_{2.5}$ NAAQS until the effective date of the redesignation of such an area to attainment for the 1997 annual $PM_{2.5}$ NAAQS.

In addition, transportation and general conformity will apply in all areas that are designated nonattainment for the more health protective 2012 primary annual $PM_{2.5}$ NAAQS on April 15, 2016, the end of the conformity grace period (CAA section 176(c)(6) and 40 CFR 93.102(d)). In the DC Circuit Court's December 2006 decision in South Coast v. EPA, as modified following rehearing, the Court held with respect to the anti-backsliding approach for transportation conformity that 1-hour ozone motor vehicle emissions budgets must be used in transportation conformity determinations for the more protective 1997 ozone NAAQS where such SIP motor vehicle emissions budgets have been found adequate or approved, until SIP

motor vehicle emissions budgets for the 1997 8-hour ozone NAAQS are available.[283] In addition, the Court affirmed more broadly that in order for transportation conformity determinations to fulfill the requirements of CAA section 176(c)(1), motor vehicle emissions budgets for a prior NAAQS must be used in transportation conformity determinations under a revised NAAQS until emissions budgets for the revised NAAQS are either found adequate or are approved, but that conformity determinations need not be made for a revoked standard. Therefore, areas designated nonattainment for the 2012 primary annual $PM_{2.5}$ NAAQS that have adequate or approved SIP budgets for the 1997 annual $PM_{2.5}$ NAAQS must continue to use such budgets in transportation

[283] *See South Coast Air Quality Management District v. EPA*, 472 F.3d at 882.

conformity determinations until budgets for the 2012 primary annual $PM_{2.5}$ NAAQS are found adequate or are approved.[284]

With regard to general conformity, the D.C. Circuit Court did not address the need for specific anti-backsliding measures in its initial decision or in the modified decision on the *South Coast* litigation. However, general conformity determinations will be required in nonattainment areas for the 2012 primary annual NAAQS as required by CAA section 176(c)(5) to ensure that the actions of federal agencies do not cause a violation of that NAAQS, make an existing violation worse or delay timely attainment of the NAAQS or an interim milestone.

The EPA believes that revoking the 1997 primary annual $PM_{2.5}$ NAAQS is logical because it results in only one primary annual $PM_{2.5}$ NAAQS – the 2012 primary annual $PM_{2.5}$ NAAQS – applying for purposes of transportation and general conformity in most areas, on the effective date of this rulemaking, which is after the end of the 1-year conformity grace period that applies to newly designated nonattainment areas. (CAA section 176(c)(6)).

An area that is attaining the more health-protective 2012 primary annual $PM_{2.5}$ NAAQS would no longer have to expend resources to make conformity determinations or complete other applicable CAA air quality planning requirements for any of the current annual $PM_{2.5}$ NAAQS after the 1997 primary annual $PM_{2.5}$ NAAQS is revoked in the area. It should be noted that any areas that are attaining the more health protective 2012 primary annual NAAQS are also necessarily attaining the less stringent 1997 annual $PM_{2.5}$ NAAQS by a wide margin. *See* further

[284] Such areas without adequate or approved SIP budgets for either the 1997 annual $PM_{2.5}$ NAAQS or the 2006 24-hour $PM_{2.5}$ NAAQS are required to demonstrate transportation conformity using one of the interim emissions tests depending on their classification as required by 40 CFR 93.119.

information for how conformity will be implemented for the 2012 $PM_{2.5}$ NAAQS in Section IX.B of this preamble.

C. Comments and Responses

1. Comments on Revocation Options 1 and 2 and Not Revoking the 1997 Primary Annual $PM_{2.5}$ NAAQS

Comment: Two commenters supported Option 1 and stated that any areas that are attaining the more protective 2012 $PM_{2.5}$ NAAQS are also necessarily attaining the less stringent 1997 $PM_{2.5}$ NAAQS. Some commenters agreed that it is confusing to continue to maintain two NAAQS for the same pollutant. Two commenters stated that revocation of the 1997 NAAQS would relieve the states of the administrative burden of developing and submitting an additional maintenance plan, as well as demonstrating transportation conformity, for areas that are in compliance with the more stringent 2012 $PM_{2.5}$ NAAQS.

Response: The EPA is finalizing Option 1, and we agree with the commenter that:

- any area that is attaining the more health protective 2012 primary annual $PM_{2.5}$ NAAQS of 12.0 $\mu g/m^3$ is also attaining the 1997 annual $PM_{2.5}$ NAAQS of 15.0 $\mu g/m^3$;
- revoking the 1997 primary annual NAAQS in areas that have either always been in attainment for that NAAQS or have been redesignated to attainment reduces confusion concerning implementation of the various $PM_{2.5}$ NAAQS; and
- burden on states is reduced because a second 10-year maintenance plan is not being required for the 1997 primary annual $PM_{2.5}$ NAAQS.

If the 1997 primary annual $PM_{2.5}$ NAAQS were to remain in place after CAA requirements begin to apply for the 2012 primary annual $PM_{2.5}$ NAAQS, federal agencies, metropolitan planning organizations (MPOs) and other state, local, and federal transportation and

air quality agencies in areas that are currently designated nonattainment or maintenance for the 1997 annual $PM_{2.5}$ NAAQS and are now designated nonattainment for the 2012 primary annual NAAQS would be required to implement CAA requirements for both annual $PM_{2.5}$ NAAQS concurrently. Additionally, some areas would also be implementing requirements for the 2006 24-hour $PM_{2.5}$ NAAQS, and two areas remain subject to requirements for the 1997 24-hour $PM_{2.5}$ NAAQS. This could lead to unnecessary complexity for transportation conformity determinations, especially if an area's boundaries for the various $PM_{2.5}$ NAAQS differ from one another, as boundaries for several areas do, and the same test of conformity cannot be used for all the $PM_{2.5}$ NAAQS. Even where an area's boundaries are unchanged, different analysis years under the transportation conformity rule may be required for each $PM_{2.5}$ NAAQS. It could also lead to general conformity determinations being made in areas that are attainment for the 2012 primary annual $PM_{2.5}$ NAAQS. Finally, state and local air quality agencies would be required to continue attainment planning activities for the 1997 primary annual $PM_{2.5}$ NAAQS even if they had air quality data that resulted in their being designated attainment for the 2012 primary annual $PM_{2.5}$ NAAQS.

Comment: Some commenters opposed revocation of the 1997 primary annual $PM_{2.5}$ NAAQS but stated that if the EPA decides to revoke the standard, then Option 1 is preferable since it more fully complies with the health protection functions of the Act. This commenter stated that Option 2 would violate the Act by creating flexibility for regions that have failed to meet the standard. The commenter provides a number of reasons for why Option 2 should not be finalized. The commenter is primarily concerned that revoking the 1997 primary annual NAAQS in areas that are designated nonattainment for that NAAQS at the time of revocation would delay improvements in air quality and allow areas to postpone implementation of controls that apply in

$PM_{2.5}$ areas that are classified as Serious. The commenter also stated that the EPA must identify specific problems to be addressed by revocation and a beneficial purpose for the revocation, and not solely on a claim of the need for flexibility. While the DC Circuit held that the EPA can revoke a NAAQS, the EPA cannot do so to maximize its own discretion.

Response: The EPA concluded that it is important to have all of the CAA's tools in subpart 4 and, as applicable, subpart 1 available in order to bring areas that are still violating the 1997 annual $PM_{2.5}$ NAAQS into attainment as expeditiously as practicable. Finalizing Option 1, which revokes the 1997 primary annual $PM_{2.5}$ NAAQS in attainment areas, including areas redesignated to attainment with an approved CAA section 175A maintenance plan, leaves the CAA's compliance plan for PM areas in place as Congress envisioned it. As described earlier, the EPA is finalizing Option 1 for revoking the 1997 primary annual $PM_{2.5}$ NAAQS. Under Option 1, the primary annual NAAQS is being revoked in areas that have always been attainment for the 1997 annual $PM_{2.5}$ NAAQS and in areas that have been redesignated to attainment for that NAAQS. Any area that remains designated nonattainment for the 1997 annual $PM_{2.5}$ NAAQS on the date of the revocation will have the 1997 primary annual $PM_{2.5}$ NAAQS revoked after the area attains the 1997 annual $PM_{2.5}$ NAAQS and is redesignated to attainment consistent with CAA section 107(d)(3)(E) (including the requirement to have an approved CAA section 175A maintenance plan for the primary NAAQS). This means that any area that remains designated nonattainment on the date of the revocation will remain subject to all subpart 4 requirements, including Serious area requirements such as BACT and BACM and more stringent NNSR requirements. If the area does not attain by the Serious area deadline and is not eligible for a 1-year attainment date extension, the area would become subject to the requirement to

develop a 5 percent plan. If the area has still not attained, it would be subject to the requirements in CAA section 179(d) for areas that fail to attain.

The EPA agrees with the commenter's assessment that attaining the 1997 annual $PM_{2.5}$ NAAQS as expeditiously as practicable has both health and welfare benefits. The final rule ensures that attainment of the 1997 $PM_{2.5}$ NAAQS is achieved in all areas. Furthermore, the final rule also requires that progress is made toward attainment of the 2012 primary annual $PM_{2.5}$ NAAQS in nonattainment areas for that NAAQS. In addition, the 1997 annual secondary NAAQS was retained to protect against certain welfare effects. The EPA agrees that if we had revoked the 1997 primary annual $PM_{2.5}$ NAAQS in areas that are still violating that NAAQS those areas would have started over as Moderate areas for the 2012 NAAQS, rather than being required to move forward with more stringent measures that would have applied to a Serious area for the 1997 annual $PM_{2.5}$ NAAQS. The revocation of the 1997 primary annual $PM_{2.5}$ NAAQS as proposed under Option 1 and being finalized is fully consistent with principles of CAA section 172(e). The 1997 primary annual $PM_{2.5}$ NAAQS is only revoked after an area has attained that NAAQS and been redesignated to attainment with an approved CAA section 175A maintenance plan for that NAAQS. The NAAQS is not being revoked in any area that remains designated nonattainment for the NAAQS and areas that continue to violate the NAAQS continue to be required to implement all of the measures required by subpart 4 (e.g., BACT, BACM and Serious area NNSR) and would be subject to additional subpart 4 requirements (e.g., most stringent measures and a 5 percent plan) if the area cannot or does not attain by the Serious area deadline.

The EPA is finalizing the revocation of the 1997 primary annual $PM_{2.5}$ NAAQS only in former nonattainment areas that have been redesignated to attainment. Areas that continue to

violate the 1997 annual NAAQS must attain that NAAQS and be redesignated to attainment with an approved CAA section 175A maintenance plan for the 1997 primary annual $PM_{2.5}$ NAAQS. The nonattainment areas where the NAAQS is not being revoked will be required to comply with all subpart 4 requirements in order to bring them into attainment with the 1997 annual $PM_{2.5}$ NAAQS as expeditiously as practicable. In sum, the final rule requires CAA subpart 4 to be implemented in all nonattainment areas for the 1997 primary annual $PM_{2.5}$ NAAQS.

The EPA also disagrees with the commenter's assertion that the final rule changes CAA subpart 4's requirements. Revocation under Option 1 requires that nonattainment areas attain the 1997 annual $PM_{2.5}$ NAAQS and be redesignated to attainment before that NAAQS is revoked. Any area that remains nonattainment and continues to violate the 1997 annual NAAQS must first attain that NAAQS by complying with the requirements for subpart 4 and then be redesignated to attainment with an approved maintenance plan for the 1997 primary annual $PM_{2.5}$ NAAQS as described earlier.

The EPA has concluded that the final rule fully complies with CAA requirements and is consistent with both past precedents for revoking the original SO_2 and lead NAAQS and the tenets of the *South Coast* decision concerning revocation of the 1-hour ozone NAAQS. (*South Coast Air Quality Management Dist.* v. *EPA*, 472 F.3d 882) Areas that continue to violate the 1997 annual NAAQS at the time of the initial revocation are required to attain that NAAQS as expeditiously as practicable through implementation of requirements in subpart 4. This will ensure that these areas continue to make progress toward and eventually attain the 1997 annual NAAQS and make progress toward expeditious attainment of the more health protective 2012 primary annual $PM_{2.5}$ NAAQS.

With regard to the comment that the EPA needs a better rationale for the revocation, the EPA is revoking the 1997 primary annual $PM_{2.5}$ NAAQS in areas that have always been attainment for that NAAQS and in areas that were initially designated nonattainment but have been redesignated to attainment for that NAAQS because this action ensures that only one primary annual $PM_{2.5}$ NAAQS—the more protective 2012 primary annual $PM_{2.5}$ NAAQS--applies in areas that are designated as attainment for the 1997 annual $PM_{2.5}$ NAAQS. These areas have successfully attained the less stringent 1997 annual $PM_{2.5}$ NAAQS and have a maintenance plan in place to ensure that they do not slip back into nonattainment for that NAAQS. These areas can only revise their approved maintenance plans if the revision complies with CAA section 110(l) and, if applicable, CAA section 193. Any of these areas that are designated nonattainment for the more health protective 2012 primary annual $PM_{2.5}$ NAAQS can now focus their efforts on expeditiously attaining the more protective NAAQS as required under subpart 4. Any of these areas that are designated attainment for the more health protective 2012 primary annual $PM_{2.5}$ NAAQS can focus their resources on other pressing air quality issues.

The EPA believes that appropriately integrating prior requirements with new goals facilitates coherent, effective and timely planning and controls, and minimizes the separate potentially duplicative submission of requirements left over from previous standards. Expeditious attainment of the 1997 annual $PM_{2.5}$ NAAQS in nonattainment areas provides both health and welfare benefits that should not be delayed by allowing nonattainment areas to restart the $PM_{2.5}$ planning process under the Moderate area classification in subpart 4 for areas that are designated nonattainment for the more health protective 2012 primary annual $PM_{2.5}$ NAAQS. For these reasons and the reasons stated earlier in Section X.a of this preamble, the EPA believes that the revocation of the 1997 primary annual $PM_{2.5}$ NAAQS in areas that have always been

attainment for that NAAQS and in areas that have been redesignated to attainment for that NAAQS provides the appropriate way to move toward attaining the more protective standard in a timely and effective manner. This approach ensures that progress made under previous $PM_{2.5}$ NAAQS continues in attainment areas and continues in nonattainment areas.

Comment: Other commenters stated that it causes unnecessary complexity, confusion, and burden to have multiple national standards for the same criteria pollutant. The commenter stated that any concerns about states and nonattainment areas not continuing to make progress or reversing progress can be mitigated through anti-backsliding requirements. On the other hand, two commenters supported the option of not revoking the standard at all. One of these commenters believed that past experience has led to confusion and litigation and has diminished the urgency to attain a new NAAQS.

Response: As described earlier, the EPA is finalizing revocation Option 1, which leaves the nonattainment designation in place until the area is redesignated to attainment and for those areas to fulfill the requirements of CAA subpart 4 that apply to them. Revoking the 1997 primary annual $PM_{2.5}$ NAAQS in areas that were designated nonattainment at the time of the revocation could delay attainment of that NAAQS and slow progress on attaining the 2012 primary annual $PM_{2.5}$ NAAQS because such areas would not be subject to all of the planning requirements in CAA subpart 4 after the date of the revocation. The EPA believes that the final rule simplifies the revocation because the approved maintenance plan and an area's PSD program serve to prevent backsliding. Anti-backsliding measures are not required for nonattainment areas because the NAAQS is not being revoked in nonattainment areas.

Comment: Several commenters supported Option 2 and stated that it is consistent with implementation rules for the other NAAQS, the 2012 primary annual $PM_{2.5}$ NAAQS is more

stringent and more protective of health than the 1997 primary annual $PM_{2.5}$ standard, and revocation of the 1997 $PM_{2.5}$ NAAQS would reduce the burden on states. One of these commenters also stated that, in 1997 $PM_{2.5}$ NAAQS maintenance areas that have good $PM_{2.5}$ air quality, revoking the 1997 $PM_{2.5}$ NAAQS in its entirety will alleviate transportation conformity requirements as well as requirements for the submission of additional maintenance plans.

Response: As discussed in the proposal, the revocations of the prior lead and SO_2 NAAQS were accomplished in a manner consistent with Option 1. (80 FR 15340) The EPA notes that both Options 1 and 2 would reduce burden on the states. Under Option 1, areas that are redesignated to attainment would not be required to submit a second 10-year maintenance plan. However, under Option 1, areas that are designated nonattainment at the time of the revocation would remain subject to the CAA subpart 4 requirements applicable to the area until it attains the NAAQS and is redesignated to attainment through approval of a redesignation request and a CAA section 175A maintenance plan for the primary NAAQS. Under Option 2, areas that remain designated nonattainment at the time of the revocation would be required to implement their approved SIPs for the 1997 annual $PM_{2.5}$ NAAQS but would not be susceptible to a reclassification from Moderate to Serious, and thus would not be required to adopt additional subpart 4 requirements including requirements for Serious areas that would apply if such an area were reclassified. Not requiring Serious area measures in such an area would delay emissions reductions and improvements in air quality.

The EPA also notes it retained the 1997 secondary annual NAAQS when the $PM_{2.5}$ NAAQS was revised in December 2012, thus, full revocation of the 1997 standard would not be appropriate.

Comment: Two commenters opposed the possible approach of not revoking the 1997 primary annual $PM_{2.5}$ NAAQS at this time because it would be inconsistent with past actions when a NAAQS has been replaced by the more stringent NAAQS and because it presents an unnecessary burden.

Response: The EPA is finalizing the proposed revocation of the 1997 primary annual $PM_{2.5}$ NAAQS for the reasons set forth earlier.

2. Comments on Anti-backsliding Requirements Under Option 1

Comment: Some commenters expressed concern that the proposal that an approved CAA section 175A maintenance plan would serve as the anti-backsliding measures may not be consistent with the language of CAA section 172(e).

Response: The EPA disagrees with the commenter. CAA section 172(e) applies in areas that have not attained the prior NAAQS. In this final rule, the EPA is only revoking the 1997 primary annual $PM_{2.5}$ NAAQS in areas that have attained that NAAQS and been redesignated to attainment with an approved CAA section 175A maintenance plan. The EPA has determined that implementing the approved maintenance plan along with a PSD program will serve to prevent backsliding in the areas where the NAAQS is being revoked. The approved maintenance plan can only be revised if the revision meets the requirements of CAA section 110(l) and, if applicable, CAA section 193. In order for the 1997 primary annual $PM_{2.5}$ NAAQS to be revoked in the future in an area that remains designated nonattainment at the time of the initial revocation, such an area would have to attain the NAAQS, submit a redesignation request including a maintenance plan for the primary NAAQS, and the EPA would have to approve that submission. The 1997 primary annual $PM_{2.5}$ NAAQS would then be revoked in such an area on

the effective date of the approval of the redesignation and maintenance plan. That approved maintenance plan would serve to prevent backsliding.

Comment: Some commenters questioned whether the EPA's conclusion is correct that under Option 1 there is no need for anti-backsliding measures, because the area would have already attained. Commenter stated there may be no need for implementing additional measures, but it seems the state should continue to keep in effect those measures that have brought it to attainment (except NNSR which by statute is replaced by PSD permitting).

Response: The final rule addresses this comment. Former nonattainment areas where the 1997 primary annual $PM_{2.5}$ NAAQS is being revoked are required to implement the approved maintenance plan for that NAAQS and to implement a PSD program. The approved maintenance plan remains in effect beyond the end of the maintenance period. The approved maintenance plan can only be revised if the revision complies with CAA section 110(l) and, if applicable, CAA section 193.

XI. Environmental Justice Considerations

The EPA believes the human health or environmental risk addressed by this action will not have disproportionately high and adverse human health or environmental effects on minority, low-income, or indigenous populations because it would not negatively affect the level of protection provided to human health or the environment under the $PM_{2.5}$ NAAQS. When promulgated, these regulations will clarify the state implementation plan requirements and the NNSR permitting requirements to be met by states in order to attain the $PM_{2.5}$ NAAQS as expeditiously as practicable. These requirements are designed to protect all segments of the general population. The EPA included specific discussion in this preamble about actions that could be considered for the protection of minority, low-income or indigenous populations in

Section IV.D.6 of this preamble on Moderate area attainment plan control strategies; Section VI.D.7 on Serious area attainment plan control strategies; and Section IX.G of this preamble, measures to ensure appropriate protections for overburdened populations. In addition, as part of the consultation activities conducted in developing this rule, the EPA participated in training and outreach activities with representatives from environmental justice organizations in a March 2014 conference held in Research Triangle Park, NC titled, "Clean Air Act Rulemaking and Permitting Training for EJ Communities." These proposed regulations are designed to protect and enhance the health and safety of these and other populations, and they will not adversely affect the health or safety of minority, low-income or indigenous populations.

XII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review because it raises novel policy issues. Any changes made in response to OMB recommendations have been documented in the docket.[285]

B. Paperwork Reduction Act (PRA)

The information collection activities in this rule have been submitted to the Office of Management and Budget (OMB) under the PRA. The Information Collection Request (ICR) document prepared by the EPA has been assigned the EPA ICR number 2258.04, OMB Control

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[285] Note that a regulatory impact analysis evaluating the costs and benefits associated with attaining the 2012 $PM_{2.5}$ NAAQS was released at the time the NAAQS review was finalized. *See* "Regulatory Impact Analysis for the Final Revisions to the National Ambient Air Quality Standards for Particulate Matter." U.S. Environmental Protection Agency, Office of Air Quality and Planning Standards, Health and Environmental Impacts Division, February 28, 2013. EPA-452/R-12-005.

No. 2060-0611. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

The EPA is finalizing this $PM_{2.5}$ NAAQS SIP Requirements Rule to describe the CAA requirements that must be met by states with nonattainment areas required to develop attainment plans for attaining and maintaining the NAAQS. The intended effect of the SIP Requirements Rule is to provide certainty to states regarding their planning obligations such that states may begin SIP development. Only states with nonattainment areas are required to submit SIPs under this rule.

For purposes of analysis of the estimated paperwork burden, the EPA assumed there were 14 existing nonattainment areas for the 1997and 2006 $PM_{2.5}$ NAAQS, and 14 designated nonattainment areas.[286] The attainment plan requirements would appear as 40 CFR 51.1000 through 51.1015 which implement CAA subsections 172(c)(1) and (2), and 189(a)(1)(B) and (C), 189(b)(1)(A) and (B) and 189(c). Some states have new nonattainment areas and some states should already have information from emission sources, as facilities should have provided this information to meet 1997 and 2006 $PM_{2.5}$ NAAQS SIP requirements, operating permits and/or emissions reporting requirements. Such information does not generally reveal the details of production processes. But, to the extent it may, confidential business information for the affected facilities is protected. Specifically, submissions of emissions and control efficiency information that is confidential, proprietary and trade secret and is not emission data are protected from disclosure under the requirements of subsections 503(e) and 114(c) of the CAA.

[286] On December 18, 2014, the EPA issued final area designations for the 2012 annual national air quality standard for fine particulate matter ($PM_{2.5}$). The EPA designated 14 areas in six states as "nonattainment." The effective date was April 15, 2015.

The annual state burden for this information collection for the 14 designated 2012 $PM_{2.5}$ nonattainment areas, averaged over the first 3 years of this ICR, is estimated to be a total of 42,000 labor hours per year at an annual a labor cost of $2.5 million (present value) over the 3 year period, or approximately $420,000 per state for the 6 state respondents. The average annual reporting burden is approximately 2,625 hours per response, with approximately 3 responses per state for 16 state responses. There are no capital or operating and maintenance costs associated with the proposal requirements. Burden is defined at 5 CFR 1320.3(b).

The annual state burden for this information collection for the 14 existing nonattainment areas for the 1997 and 2006 $PM_{2.5}$ NAAQS, averaged over the first 3 years of this ICR, is estimated to be a total of 48,600 labor hours per year at an annual labor cost of $2.9 million (present value) over the 3 year period, or approximately $417,000 per state for the 7 state respondents. The average annual reporting burden is approximately 3,240 hours per response, with approximately two responses per state for 15 state responses. There are no capital or operating and maintenance costs associated with the proposal requirements. Burden is defined at 5 CFR 1320.3(b).

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 the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule

relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This rule will not impose any requirements directly on small entities. Entities potentially affected directly by this final rule include state, local and tribal governments and none of these governments are small governments. Other types of small entities are not directly subject to the requirements of this rule.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531-1538, and does not significantly or uniquely affect small governments. This action imposes no enforceable duty on any state, local or tribal governments or the private sector. The CAA imposes the obligation for states to submit attainment plans to implement the $PM_{2.5}$ NAAQS. In this rule, the EPA is clarifying those requirements. Therefore, this action is not subject to the requirements of sections 202, 203, and 205 of the UMRA.

E. Executive Order 13132: Federalism

This action 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.

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

This final rule does not have tribal implications. It would not have a substantial direct effect on one or more Indian tribes. Furthermore, these regulation revisions do 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 characterizing air quality and developing plans to attain the NAAQS, and these

revisions to the regulations do nothing to modify that relationship. Thus, Executive Order 13175 does not apply to this action.

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

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it implements a previously promulgated health or safety-based federal standard established pursuant to the CAA.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a "significant energy action" as defined in Executive Order 13211 (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.

I. National Technology Transfer and Advancement Act

This rulemaking does not involve technical standards.

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

The EPA believes the human health or environmental risk addressed by this action will not have disproportionately high and adverse human health or environmental effects on minority, low-income, or indigenous populations. The results of this evaluation are contained in Section XI of this preamble. However, because of the benefits of improved air quality on low SES populations, the EPA conducted outreach to communities on the proposal to encourage comment

including a March 2014 environmental justice conference in Research Triangle Park, NC, conference calls and a meeting with the National Environmental Justice Advisory Committee.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a ‘‘major rule’’ as defined by 5 U.S.C. 804(2).

L. Determination Under Section 307(d)

Pursuant to sections 307(d)(1)(E) and 307(d)(1)(V) of the CAA, the Administrator proposes to determine that this action is subject to the provisions of section 307(d). Under section 307(d)(1)(V), the provisions of section 307(d) apply to “such other actions as the Administrator may determine.”

M. Judicial Review

Section 307(b)(1) of the CAA indicates which Federal Courts of Appeal have venue for petitions of review of final agency actions by the EPA under the CAA. This section provides, in part, that petitions for review must be filed in the U.S. Court of Appeals for the District of Columbia Circuit (i) when the agency action consists of ‘‘nationally applicable regulations promulgated, or final actions taken, by the Administrator’’ or (ii) when such action is locally or regionally applicable, if ‘‘such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination.’’

This rule implementing the $PM_{2.5}$ SIP Requirements is ‘‘nationally applicable’’ within the meaning of CAA section 307(b)(1). First, the rulemaking addresses the NAAQS that applies to all states and territories in the U.S. Second, the rulemaking addresses issues relevant to

specific existing SIP provisions in states across the U.S. that are located in each of the ten EPA regions, numerous federal circuits and multiple time zones. Third, the rulemaking addresses a common core of knowledge and analysis involved in formulating the decision and a common interpretation of the requirements of the CAA being applied to SIPs in states across the country. Fourth, the rulemaking, by addressing issues relevant to appropriate SIP provisions in one state, may have precedential impacts upon the SIPs of other states nationwide. Courts have found similar rulemaking actions to be of nationwide scope and effect.[287]

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 AFTER PUBLICATION IN THE FEDERAL REGISTER]**. Any such judicial review is limited to only those objections that are raised with reasonable specificity in timely comments. 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. Under section 307(b)(2) of the Act, the requirements of this final action may not be challenged later in civil or criminal proceedings brought by us to enforce these requirements.

XIII. Statutory Authority

The statutory authority for this action is provided by 42 U.S.C. 7403, 7407, 7410, and 7601.

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[287] *See, e.g., State of Texas, et al. v. EPA*, 2011 U.S. App. LEXIS 5654 (5th Cir. 2011) (finding SIP call to 13 states to be of nationwide scope and effect and thus transferring the case to the U.S. Court of Appeals for the D.C. Circuit in accordance with CAA section 307(b)(1)).

List of Subjects

40 CFR Part 50

Environmental protection, Air pollution control, Intergovernmental relations, Particulate matter, Sulfur dioxide, Nitrogen oxides, Volatile organic compounds, Ammonia.

40 CFR Part 51

Environmental protection, Air pollution control, Intergovernmental relations, Particulate matter, Sulfur dioxide, Nitrogen oxides, Volatile organic compounds, Ammonia.

40 CFR Part 93

Environmental protection, Air pollution control, Intergovernmental relations, Particulate matter, Sulfur dioxide, Nitrogen oxides, Volatile organic compounds, Ammonia.

Dated: July 29, 2016.

Gina McCarthy,
Administrator.

For the reasons stated in the preamble, Title 40, Chapter I of the Code of Federal Regulations is amended as follows:

PART 50 – NATIONAL PRIMARY AND SECONDARY AMBIENT AIR QUALITY STANDARDS

1. The authority citation for part 50 continues to read as follows:

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

2. In § 50.13, add paragraph (d) to read as follows:

§ 50.13 National primary and secondary ambient air quality standards for $PM_{2.5}$.

* * * * *

(d) Until the effective date of the final Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements rule to be codified at 40 CFR 51.1000 through 51.1016, the 1997 annual $PM_{2.5}$ NAAQS set forth in this section will continue in effect, notwithstanding the promulgation of the 2012 primary annual $PM_{2.5}$ NAAQS under § 50.18. The 1997 primary annual $PM_{2.5}$ NAAQS set forth in this section will no longer apply upon the effective date of the final Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements rule; except that for areas designated nonattainment for the 1997 annual $PM_{2.5}$ NAAQS set forth in this section as of the effective date of the final Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements rule, the requirements applicable to the 1997 primary annual $PM_{2.5}$ NAAQS set forth in this section will apply until the effective date of an area's redesignation to attainment for

the 1997 annual $PM_{2.5}$ NAAQS pursuant to the requirements of section 107 of the Clean Air Act. The 1997 secondary annual $PM_{2.5}$ NAAQS and the 1997 24-hour $PM_{2.5}$ NAAQS shall remain in effect. The area designations and classifications with respect to the 1997 annual and 24-hour $PM_{2.5}$ NAAQS remain codified in 40 CFR part 81 in order to provide information on where the 1997 primary annual $PM_{2.5}$ NAAQS has been revoked and to facilitate the implementation of the 1997 secondary annual $PM_{2.5}$ NAAQS and the 1997 24-hour $PM_{2.5}$ NAAQS.

PART 51 – REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS

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

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

4. In Appendix A to subpart A of part 51, revise table 1 to read as follows:

Appendix A to Subpart A of Part 51--Tables

Table 1 to Appendix A of Subpart A – Emission Thresholds[1] by Pollutant for Treatment as Point Source Under 40 CFR 51.30

Pollutant	Every-year	Triennial	
	Type A Sources [2]	Type B Sources	NAA Sources[3]
(1) SO_2	≥ 2500	≥ 100	≥ 100
			$PM_{2.5}$ (serious) ≥ 70
(2) VOC	≥ 250	≥ 100	≥ 100
			O_3 (serious) ≥ 50
			O_3 (severe) ≥ 25
			O_3 (extreme) ≥ 10
			$PM_{2.5}$ (serious) ≥ 70
(3) NO_x	≥ 2500	≥ 100	≥ 100
			$PM_{2.5}$ (serious) ≥ 70
(4) CO	≥ 2500	≥ 1000	O_3 (all areas) ≥ 100
			CO (all areas) ≥ 100
(5) Lead		≥ 0.5 (actual)	≥ 0.5 (actual)
(6) Primary	≥ 250	≥ 100	≥ 100

PM_{10}			
			PM_{10} (serious) ≥ 70
(7) Primary $PM_{2.5}$	≥ 250	≥ 100	≥ 100
			$PM_{2.5}$ (serious) ≥ 70
(8) NH_3	≥ 250	≥ 100	≥ 100
			$PM_{2.5}$ (serious) ≥ 70

[1] Thresholds for point source determination shown in tons per year of potential to emit as defined in 40 CFR part 70, with the exception of lead. Reported emissions should be in actual tons emitted for the required time period.
[2] Type A sources are a subset of the Type B sources and are the larger emitting sources by pollutant.
[3] NAA = Nonattainment Area. The point source reporting thresholds vary by attainment status for SO_2, VOC, NO_x, CO, $PM_{10,}$ $PM_{2.5}$, and NH_3.

* * * * *

Subpart I–Review of New Sources and Modifications

5. In §51.165:

a. Revise paragraphs (a)(1)(iv)(A)(*1*) and (a)(1)(x)(A);

b. Add paragraph (a)(1)(x)(F);

c. Revise paragraph (a)(1)(xxxvii)(C)(*2*);

d. Remove paragraphs (a)(1)(xxxvii)(C)(*3*), and (*4*);

e. Revise paragraphs (a)(2)(i) and (a)(2)(ii)(A); and

f. Add paragraph (a)(13).

The revisions and additions read as follows:

§51.165 Permit requirements.

(a) * * *

(1) * * *

(iv)(A) * * *

(*1*) Any stationary source of air pollutants that emits, or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant (as defined in paragraph (a)(1)(xxxvii) of this section), except that lower emissions thresholds shall apply in areas subject to subpart 2, subpart 3, or subpart 4 of part D, title I of the Act, according to paragraphs (a)(1)(iv)(A)(*1*)(*i*) through (*viii*) of this section.

(*i*) 50 tons per year of Volatile organic compounds in any serious ozone nonattainment area.

(*ii*) 50 tons per year of Volatile organic compounds in an area within an ozone transport region, except for any severe or extreme ozone nonattainment area.

(*iii*) 25 tons per year of Volatile organic compounds in any severe ozone nonattainment area.

(*iv*) 10 tons per year of Volatile organic compounds in any extreme ozone nonattainment area.

(*v*) 50 tons per year of Carbon monoxide in any serious nonattainment area for carbon monoxide, where stationary sources contribute significantly to Carbon monoxide levels in the area (as determined under rules issued by the Administrator).

(*vi*) 70 tons per year of PM_{10} in any serious nonattainment area for PM_{10}.

(*vii*) 70 tons per year of $PM_{2.5}$ in any serious nonattainment area for $PM_{2.5}$.

(*viii*) 70 tons per year of any individual precursor for $PM_{2.5}$ (as defined in paragraph (a)(1)(xxxvii) of this section), in any serious nonattainment area for $PM_{2.5}$.

*** * * * ***

(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, or 40 tpy of VOC emissions, to the extent that any such pollutant is defined as a precursor for $PM_{2.5}$ in paragraph (a)(1)(xxxvii) of this section.

* * * * *

(F) For the purposes of applying the requirements of paragraph (a)(13) of this section to modifications at existing major stationary sources of Ammonia located in a $PM_{2.5}$ nonattainment area, if the plan requires that the control requirements of this section apply to major stationary sources and major modifications of Ammonia as a regulated NSR pollutant (as a $PM_{2.5}$ precursor), the plan shall also define "significant" for Ammonia for that area, subject to the approval of the Administrator.

* * * * *

(xxxvii) * * *

(C) * * *

(*2*) Sulfur dioxide, Nitrogen oxides, Volatile organic compounds and Ammonia are precursors to $PM_{2.5}$ in any $PM_{2.5}$ nonattainment area.

* * * *

(2) *Applicability procedures.* (i) Each plan shall adopt a preconstruction review program to satisfy the requirements of sections 172(c)(5) and 173 of the Act for any area designated nonattainment for any national ambient air quality standard under subpart C of 40 CFR Part 81. Such a program shall apply to any new major stationary source or major modification that is major for the pollutant for which the area is designated nonattainment under section 107(d)(1)(A)(i) of the Act, if the stationary source or modification would locate anywhere in the designated nonattainment area. Different pollutants, including individual precursors, are not summed to determine applicability of a major stationary source or major modification.

(ii) * * *

(A) Except as otherwise provided in paragraphs (a)(2)(iii) and (iv) of this section, and consistent with the definition of major modification contained in paragraph (a)(1)(v)(A) of this section, a project is a major modification for a regulated NSR pollutant (as defined in paragraph (a)(1)(xxxvii) of this section) if it causes two types of emissions increases—a significant emissions increase (as defined in paragraph (a)(1)(xxvii) of this section), and a significant net emissions increase (as defined in paragraphs (a)(1)(vi) and (x) of this section). The project is not a major modification if it does not cause a significant emissions increase. If the project causes a significant emissions increase, then the project is a major modification only if it also results in a significant net emissions increase.

* * * * *

(13) The plan shall require that the control requirements of this section applicable to major stationary sources and major modifications of $PM_{2.5}$ shall also apply to major stationary sources and major modifications of $PM_{2.5}$ precursors in a $PM_{2.5}$ nonattainment area, except that a reviewing authority may exempt new major stationary sources and major modifications of a particular precursor from the requirements of this section for $PM_{2.5}$ if the NNSR precursor demonstration submitted to and approved by the Administrator shows that such sources do not contribute significantly to $PM_{2.5}$ levels that exceed the standard in the area. Any demonstration submitted for the Administrator's review must meet the conditions for a NNSR precursor demonstration as set forth in § 51.1006(a)(3).

* * * * *

6. Revise subpart Z to read as follows:

Subpart Z - Provisions for Implementation of $PM_{2.5}$ National Ambient Air Quality Standards

Sec.

51.1000 Definitions.

51.1001 Applicability of part 51.

51.1002 Classifications and reclassifications.

51.1003 Attainment plan due dates and submission requirements.

51.1004 Attainment dates.

51.1005 Attainment date extensions.

51.1006 Optional $PM_{2.5}$ precursor demonstrations.

51.1007 [Reserved]

51.1008 Emissions inventory requirements.

51.1009 Moderate area attainment plan control strategy requirements.

51.1010 Serious area attainment plan control strategy requirements.

51.1011 Attainment demonstration and modeling requirements.

51.1012 Reasonable further progress (RFP) requirements.

51.1013 Quantitative milestone requirements.

51.1014 Contingency measures requirements.

51.1015 Clean data requirements.

51.1016 Continued applicability of the FIP and SIP requirements pertaining to interstate transport under CAA section 110(a)(2)(D)(i) and (ii) after revocation of the 1997 primary annual $PM_{2.5}$ NAAQS.

Subpart Z - Provisions for Implementation of $PM_{2.5}$ National Ambient Air Quality Standards

§ 51.1000 Definitions.

The following definitions apply for purposes of this subpart. Any term not defined herein shall have the meaning as defined in 40 CFR 51.100 or Clean Air Act section 302.

Act means the Clean Air Act as codified at 42 U.S.C. 7401-7671q (2003).

Additional feasible measure is any control measure that otherwise meets the definition of "best available control measure" (BACM) but can only be implemented in whole or in part beginning 4 years after the date of reclassification of an area as Serious and no later than the statutory attainment date for the area.

Additional reasonable measure is any control measure that otherwise meets the definition of "reasonably available control measure" (RACM) but can only be implemented in whole or in part during the period beginning 4 years after the effective date of designation of a nonattainment area and no later than the end of the sixth calendar year following the effective date of designation of the area.

Applicable annual standard is the annual $PM_{2.5}$ NAAQS established, revised, or retained as a result of a particular $PM_{2.5}$ NAAQS review.

Applicable attainment date means the latest statutory date by which an area is required to attain a particular $PM_{2.5}$ NAAQS, unless the EPA has approved an attainment plan for the area to attain such NAAQS, in which case the applicable attainment date is the date approved under such

attainment plan. If the EPA grants an extension of an approved attainment date, then the applicable attainment date for the area shall be the extended date.

Applicable 24-hour standard is the 24-hour $PM_{2.5}$ NAAQS established, revised, or retained as a result of a particular $PM_{2.5}$ NAAQS review.

Attainment projected inventory for the nonattainment area means the projected emissions of direct $PM_{2.5}$ and all $PM_{2.5}$ precursors on the projected attainment date for the area. This projected inventory includes sources included in the base year inventory for the nonattainment area revised to account for changes in direct $PM_{2.5}$ and all $PM_{2.5}$ precursors through implementation of the plan and any additional sources of such emissions expected within the boundaries of the nonattainment area by the projected attainment date for the area.

Average-season-day emissions means the sum of all emissions during the applicable season divided by the number of days in that season.

Base year inventory for the nonattainment area means the actual emissions of direct $PM_{2.5}$ and all $PM_{2.5}$ precursors from all sources within the boundaries of a nonattainment area in one of the 3 years used for purposes of designations or another technically appropriate year.

Best available control measure (BACM) is any technologically and economically feasible control measure that can be implemented in whole or in part within 4 years after the date of reclassification of a Moderate $PM_{2.5}$ nonattainment area to Serious and that generally can achieve greater permanent and enforceable emissions reductions in direct $PM_{2.5}$ emissions and/or emissions of $PM_{2.5}$ plan precursors from sources in the area than can be achieved through the implementation of RACM on the same source(s). BACM includes best available control technology (BACT).

Date of designation means the effective date of a $PM_{2.5}$ area designation as promulgated by the Administrator.

Date of reclassification means the effective date of a $PM_{2.5}$ area reclassification from Moderate to Serious as promulgated by the Administrator.

Direct $PM_{2.5}$ emissions means solid or liquid particles emitted directly from an air emissions source or activity, or reaction products of gases emitted directly from an air emissions source or activity which form particulate matter as they reach ambient temperatures. Direct $PM_{2.5}$ emissions include filterable and condensable $PM_{2.5}$ emissions composed of elemental carbon, directly emitted organic carbon, directly emitted sulfate, directly emitted nitrate, and other organic or inorganic particles that exist or form through reactions as emissions reach ambient temperatures (including but not limited to crustal material, metals, and sea salt).

Implemented means adopted by the state, fully approved into the SIP by the EPA, and requiring expeditious compliance by affected sources with installation and/or operation of any equipment, control device, process change, or other emission reduction activity.

Major stationary source means any stationary source of air pollutant(s) that emits, or has the potential to emit 100 tons per year or more of direct $PM_{2.5}$ or any $PM_{2.5}$ precursor in any Moderate nonattainment area for the $PM_{2.5}$ NAAQS, or 70 tons per year or more of direct $PM_{2.5}$ or any $PM_{2.5}$ precursor in any Serious nonattainment area for the $PM_{2.5}$ NAAQS.

Mobile source means mobile sources as defined by 40 CFR 51.50.

Most stringent measure (MSM) is any permanent and enforceable control measure that achieves the most stringent emissions reductions in direct $PM_{2.5}$ emissions and/or emissions of $PM_{2.5}$ plan

precursors from among those control measures which are either included in the SIP for any other NAAQS, or have been achieved in practice in any state, and that can feasibly be implemented in the relevant $PM_{2.5}$ NAAQS nonattainment area.

Nonpoint source means nonpoint sources as defined by 40 CFR 51.50.

$PM_{2.5}$ design value (DV) for a $PM_{2.5}$ nonattainment area is the highest of the 3-year average concentrations calculated for the ambient air quality monitors in the area, in accordance with 40 CFR Part 50, appendix N.

$PM_{2.5}$ NAAQS are the fine particulate matter National Ambient Air Quality Standards codified at 40 CFR Part 50.

$PM_{2.5}$ plan precursors are those $PM_{2.5}$ precursors required to be regulated in the applicable attainment plan and/or NNSR program.

$PM_{2.5}$ precursors are Sulfur dioxide (SO_2), Oxides of nitrogen (NO_x), Volatile organic compounds (VOC), and Ammonia (NH_3).

Point source means point sources as defined by 40 CFR 51.50.

Precursor demonstration means an optional set of analyses provided by a state that are designed to show that emissions of a particular $PM_{2.5}$ precursor do not contribute significantly to $PM_{2.5}$ levels that exceed the relevant $PM_{2.5}$ standard in a particular nonattainment area. The three types of precursor demonstrations provided in this rule are the comprehensive precursor demonstration, the major stationary source precursor demonstration, and the NNSR precursor demonstration.

Reasonable further progress (RFP) means such annual incremental reductions in emissions of direct $PM_{2.5}$ and $PM_{2.5}$ plan precursors as are required for the purpose of ensuring attainment of the applicable $PM_{2.5}$ NAAQS in a nonattainment area by the applicable attainment date.

Reasonably available control measure (RACM) is any technologically and economically feasible measure that can be implemented in whole or in part within 4 years after the effective date of designation of a $PM_{2.5}$ nonattainment area and that achieves permanent and enforceable reductions in direct $PM_{2.5}$ emissions and/or $PM_{2.5}$ plan precursor emissions from sources in the area. RACM includes reasonably available control technology (RACT).

RFP projected emissions means the estimated emissions for direct $PM_{2.5}$ and $PM_{2.5}$ plan precursors by source category or subcategory for the years in which quantitative milestones are due for a nonattainment area.

Subpart 1 means subpart 1 of part D of title I of the Act.

Subpart 4 means subpart 4 of part D of title I of the Act.

§ 51.1001 Applicability of part 51.

The provisions in subparts A through X of this part apply to areas for purposes of the $PM_{2.5}$ NAAQS to the extent they are not inconsistent with the provisions of this subpart.

§ 51.1002 Classifications and reclassifications.

(a) *Initial classification as Moderate $PM_{2.5}$ nonattainment area.* Any area designated nonattainment for a $PM_{2.5}$ NAAQS shall be classified at the time of such designation, by operation of law, as a Moderate $PM_{2.5}$ nonattainment area.

(b) *Reclassification as Serious $PM_{2.5}$ nonattainment area*. A Moderate nonattainment area shall be reclassified to Serious under the following circumstances:

(1) The EPA shall reclassify as Serious through notice-and-comment rulemaking any Moderate $PM_{2.5}$ nonattainment area that the EPA determines cannot practicably attain a particular $PM_{2.5}$ NAAQS by the applicable Moderate area attainment date.

(2) A Moderate $PM_{2.5}$ nonattainment area shall be reclassified by operation of law as a Serious nonattainment area if the EPA finds through notice-and-comment rulemaking that the area failed to attain a particular $PM_{2.5}$ NAAQS by the applicable Moderate area attainment date.

§ 51.1003 Attainment plan due dates and submission requirements.

(a) *Nonattainment areas initially classified as Moderate*. (1) For any area designated as nonattainment and initially classified as Moderate for a $PM_{2.5}$ NAAQS, the state(s) shall submit a Moderate area attainment plan that meets all of the following requirements:

(i) Base year emissions inventory requirements set forth at § 51.1008(a)(1);

(ii) Attainment projected emissions inventory requirements set forth at § 51.1008(a)(2);

(iii) Moderate area attainment plan control strategy requirements set forth at § 51.1009;

(iv) Attainment demonstration and modeling requirements set forth at § 51.1011;

(v) Reasonable Further Progress (RFP) requirements set forth at § 51.1012;

(vi) Quantitative milestone requirements set forth at § 51.1013;

(vii) Contingency measure requirements set forth at § 51.1014; and,

(viii) Nonattainment new source review plan requirements pursuant to § 51.165.

(2) The state(s) shall submit its Moderate area attainment plan to the EPA no later than 18 months from the effective date of designation of the area.

(b) *Nonattainment areas reclassified to Serious*. (1) For any nonattainment area reclassified to Serious for a $PM_{2.5}$ NAAQS under § 51.1002(b), in addition to meeting the Moderate area attainment plan submission requirements set forth at § 51.1003(a), the state(s) shall submit a Serious area attainment plan that meets all of the following requirements:

(i) Base year emissions inventory requirements set forth at § 51.1008(b)(1);

(ii) Attainment projected emissions inventory requirements set forth at § 51.1008(b)(2);

(iii) Serious area attainment plan control strategy requirements set forth at § 51.1010;

(iv) Attainment demonstration and modeling requirements set forth at § 51.1011;

(v) Reasonable Further Progress (RFP) requirements set forth at § 51.1012;

(vi) Quantitative milestone requirements set forth at § 51.1013;

(vii) Contingency measure requirements set forth at § 51.1014; and,

(viii) Nonattainment new source review plan requirements pursuant to § 51.165.

(2) The state(s) shall submit its Serious area attainment plan to the EPA according to the following schedule:

(i) *Discretionary reclassification*. (A) For any nonattainment area reclassified to Serious for a particular $PM_{2.5}$ NAAQS under § 51.1002(b)(1) because the EPA determined it cannot

practicably attain the NAAQS by the applicable Moderate area attainment date, the state(s) shall submit to the EPA no later than 18 months from the effective date of reclassification the portion of the Serious area attainment plan that meets the following requirements:

(*1*) Base year emissions inventory requirements set forth at § 51.1008(b)(1);

(*2*) Serious area attainment plan control strategy requirements set forth at § 51.1010(a)(1) through (4); and,

(*3*) Nonattainment new source review plan requirements pursuant to § 51.165.

(B) The state(s) shall submit to the EPA the portion of the Serious area attainment plan that meets the requirements set forth at paragraphs (b)(1)(ii), and (b)(1)(iv) through (vii) of this section to the EPA by a date that is no later than 4 years after the effective date of reclassification, or 2 years prior to the attainment date, whichever is earlier.

(ii) Mandatory reclassification. For any nonattainment area reclassified to Serious for a particular $PM_{2.5}$ NAAQS under § 51.1002(b)(2) because the EPA determined it failed to attain the NAAQS by the applicable Moderate area attainment date, the state(s) shall submit to the EPA a Serious area attainment plan meeting the requirements set forth at paragraphs (b)(1)(i) through (viii) of this section within 18 months from the effective date of reclassification, or 2 years before the attainment date, whichever is earlier.

(iii) If the state(s) submits to the EPA a request for a Serious area attainment date extension simultaneous with the Serious area attainment plan due under paragraph (b)(1) of this section, such a plan shall meet the most stringent measure (MSM) requirements set forth at § 51.1010(b)

in addition to the BACM and BACT and additional feasible measure requirements set forth at § 51.1010(a).

(c) *Serious nonattainment areas subject to CAA section 189(d) for failing to attain the $PM_{2.5}$ NAAQS by the applicable Serious area attainment date*. (1) For any Serious nonattainment area that fails to attain the $PM_{2.5}$ NAAQS by the applicable Serious area attainment date, the state(s) shall submit a revised Serious area attainment plan that demonstrates that each year the area will achieve at least a 5 percent reduction in emissions of direct $PM_{2.5}$ or a 5 percent reduction in emissions of a $PM_{2.5}$ plan precursor based on the most recent emissions inventory for the area. The revised attainment plan shall meet the following requirements:

(i) Emissions inventory requirements set forth at § 51.1008(c)(1);

(ii) Emissions inventory requirements set forth at § 51.1008(c)(2);

(iii) Serious area attainment plan control strategy requirements set forth at § 51.1010;

(iv) Attainment demonstration and modeling requirements set forth at § 51.1011;

(v) Reasonable Further Progress (RFP) requirements set forth at § 51.1012;

(vi) Quantitative milestone requirements set forth at § 51.1013;

(vii) Contingency measure requirements set forth at § 51.1014; and

(viii) Nonattainment new source review plan requirements pursuant to § 51.165.

(2) The state(s) shall submit to the EPA the revised attainment plan meeting the requirements set forth at paragraphs (c)(1)(i) through (vii) of this section no later than 12 months from the applicable Serious area attainment date that was previously missed.

(d) Any attainment plan submitted to the EPA under this section shall establish motor vehicle emissions budgets for the projected attainment year for the area, if applicable. The state shall develop such budgets according to the requirements of the transportation conformity rule as they apply to $PM_{2.5}$ nonattainment areas (40 CFR part 93).

§ 51.1004 Attainment dates.

(a) The state shall submit a projected attainment date as part of its attainment plan submission under § 51.1003 for any $PM_{2.5}$ NAAQS nonattainment area located in whole or in part within its boundaries. The state shall justify the projected attainment date for each such nonattainment area (or portion of a nonattainment area) as part of the demonstration of attainment developed and submitted according to the requirements set forth at § 51.1011 and according to the following:

(1) Nonattainment areas initially classified as Moderate.

(i) Except for nonattainment areas that meet the criterion under paragraph (a)(1)(ii) of this section, the projected attainment date for a Moderate $PM_{2.5}$ nonattainment area shall be as expeditious as practicable through the implementation of all control measures required under § 51.1009. The attainment date may be as late as the end of the sixth calendar year after the effective date of designation if the state demonstrates that the implementation of the control measures that qualify as RACM, RACT, and additional reasonable measures, but that are not necessary for demonstrating attainment by the end of the sixth calendar year after the effective date of designation, will not collectively advance the attainment date by at least 1 year.

(ii) The projected attainment date for a Moderate $PM_{2.5}$ nonattainment area which the state demonstrates cannot practicably attain the applicable $PM_{2.5}$ NAAQS by the end of the sixth calendar year after the effective date of designation of the area with the implementation of all

control measures required under § 51.1009 shall be the end of the sixth calendar year after the effective date of designation unless and until the area is reclassified as Serious according to § 51.1002.

(2) *Nonattainment areas reclassified to Serious*. (i) Except for nonattainment areas that meet the criterion under paragraph (a)(2)(ii) of this section, the projected attainment date for a Serious $PM_{2.5}$ nonattainment area shall be as expeditious as practicable with the implementation of all control measures required under § 51.1010 but no later than the end of the tenth calendar year after the effective date of designation.

(ii) A state that submits an attainment plan that demonstrates that a Serious $PM_{2.5}$ nonattainment area cannot practicably attain the $PM_{2.5}$ NAAQS by the end of the tenth calendar year following the effective date of designation of the area with the implementation of all control measures required under § 51.1010(a) must request an extension of the Serious area attainment date consistent with § 51.1005(b). The request must propose a projected attainment date for the nonattainment area that is as expeditious as practicable, but no later than the end of the fifteenth calendar year following the effective date of designation of the area.

(3) Serious nonattainment areas subject to CAA section 189(d) for failing to attain by the applicable Serious area attainment date. The projected attainment date for a Serious $PM_{2.5}$ nonattainment area that failed to attain the $PM_{2.5}$ NAAQS by the applicable Serious area attainment date shall be as expeditious as practicable, but no later than 5 years following the effective date of the EPA's finding that the area failed to attain by the original Serious area attainment date, except that the Administrator may extend the attainment date to the extent the Administrator deems appropriate, for a period no greater than 10 years from the effective date of

the EPA's determination that the area failed to attain, considering the severity of nonattainment and the availability and feasibility of pollution control measures.

(b) Except for attainment plans that meet the conditions of paragraphs (a)(1)(ii) or (a)(3) of this section, the Administrator shall approve an attainment date at the same time and in the same manner in which the Administrator approves the attainment plan for the area.

(1) In accordance with paragraph (a)(1)(ii) of this section, if a state demonstrates that a Moderate $PM_{2.5}$ nonattainment area cannot practicably attain the $PM_{2.5}$ NAAQS by the end of the sixth calendar year following the effective date of designation of the area, the EPA shall proceed under the provisions of § 51.1002(b)(1) to reclassify the area to Serious through notice-and-comment rulemaking.

(2) [Reserved]

§ 51.1005 Attainment date extensions.

(a) *Nonattainment areas initially classified as Moderate*. (1) A state with a Moderate $PM_{2.5}$ nonattainment area may apply for a 1-year attainment date extension for the area if the following conditions are met in the calendar year that includes the applicable attainment date for the area:

(i) The state has complied with all requirements and commitments pertaining to the area in the applicable implementation plan;

(ii) For an area designated nonattainment for a particular 24-hour $PM_{2.5}$ NAAQS for which the state seeks an attainment date extension, the 98^{th} percentile 24-hour concentration at each monitor in the area for the calendar year that includes the applicable attainment date is less than

or equal to the level of the applicable 24-hour standard (calculated according to the data analysis requirements in 40 CFR Part 50, appendix N);

(iii) For an area designated nonattainment for a particular annual $PM_{2.5}$ NAAQS for which the state seeks an attainment date extension, the annual average concentration at each monitor in the area for the calendar year that includes the applicable attainment date is less than or equal to the level of the applicable annual standard (calculated according to the data analysis requirements in 40 CFR Part 50, appendix N).

(2) The applicable implementation plan for a Moderate $PM_{2.5}$ nonattainment area for which a state seeks an attainment date extension is the plan submitted to the EPA to meet the requirements of § 51.1003(a).

(3) A Moderate area 1-year attainment date extension runs from January 1 to December 31 of the year following the year that includes the applicable attainment date.

(4) A state with a Moderate area that received an initial 1-year attainment date extension may apply for a second 1-year attainment date extension for the area if the state meets the conditions described in paragraph (a)(1) of this section for the first 1-year extension year.

(b) *Nonattainment areas reclassified as Serious*. (1) A state may apply for one attainment date extension not to exceed 5 years for a Serious nonattainment area if the following conditions are met:

(i) The state demonstrates that attainment of the applicable $PM_{2.5}$ NAAQS by the approved attainment date for the area would be impracticable or, in the absence of an approved attainment

date, attainment of the applicable $PM_{2.5}$ NAAQS by the applicable statutory attainment date for the area would be impracticable;

(ii) The state has complied with all requirements and commitments pertaining to the area in the applicable implementation plan; and,

(iii) The state demonstrates that the attainment plan for the area includes the most stringent measures (MSM) that are included in the attainment plan of any state or are achieved in practice in any state, and can feasibly be implemented in the area consistent with § 51.1010(b).

(2) At the time of application for an attainment date extension, the state shall submit to the EPA a Serious area attainment plan that meets the following requirements:

(i) Base year and attainment projected emissions inventory requirements set forth at § 51.1008(b);

(ii) Most stringent measures (MSM) requirement described under paragraph (b)(1)(iii) of this section and § 51.1010(b), and best available control measures not previously submitted;

(iii) Attainment demonstration and modeling requirements set forth at § 51.1011 that justify the state's conclusion under paragraph (b)(1)(i) of this section, and that demonstrate attainment as expeditiously as practicable;

(iv) Reasonable Further Progress (RFP) requirements set forth at § 51.1012;

(v) Quantitative milestone requirements set forth at § 51.1013;

(vi) Contingency measure requirements set forth at § 51.1014; and,

(vii) Nonattainment new source review plan requirements pursuant to § 51.165.

(3) The applicable implementation plan for a Serious $PM_{2.5}$ nonattainment area for which a state seeks an attainment date extension under § 51.1004(a)(2)(ii) is the plan submitted to the EPA to meet the requirements set forth at § 51.1003(a).

(4) The applicable implementation plan for a Serious $PM_{2.5}$ nonattainment area for which a state seeks an attainment date extension under § 51.1004(a)(2)(i) is the plan submitted to the EPA to meet the requirements set forth at § 51.1003(b)(1).

(5) A state applying for an attainment date extension for a Serious nonattainment area under § 51.1004(a)(2)(ii) shall submit to the EPA a request for an extension at the same time as it submits the Serious area attainment plan due under § 51.1003(b)(1).

(6) A state applying for an attainment date extension for a Serious nonattainment area subsequent to submitting an initial Serious area attainment plan that demonstrated attainment of the NAAQS by the applicable attainment date consistent with § 51.1004(a)(2)(i) at the time of submission may apply for such an extension no later than 60 calendar days prior to the approved attainment date for the area or, in the absence of an approved attainment date, no later than 60 calendar days prior to the applicable statutory attainment date for the area.

(c) *Serious nonattainment areas subject to CAA section 189(d) for failing to attain by the applicable Serious area attainment date*. If a Serious area fails to attain a particular $PM_{2.5}$ NAAQS by the applicable Serious area attainment date, the area is then subject to the requirements of section 189(d) of the Act, and, for this reason, the state is prohibited from requesting an extension of the applicable Serious area attainment date for such area.

(d) For any attainment date extension request submitted pursuant to this section, the requesting state (or states) shall submit a written request and evidence of compliance with these regulations which includes both of the following:

(1) Evidence that all control measures submitted in the applicable attainment plan have been implemented, and

(2) Evidence that the area has made emission reduction progress that represents reasonable further progress toward timely attainment of the applicable $PM_{2.5}$ NAAQS.

(e) For a $PM_{2.5}$ nonattainment area located in two or more states or jurisdictions, all states and/or jurisdictions in which such area is located shall submit separate attainment date extension requests for the area consistent with the requirements set forth at paragraph (d) of this section.

§ 51.1006 Optional $PM_{2.5}$ precursor demonstrations

(a) A state may elect to submit to the EPA one or more precursor demonstrations for a specific nonattainment area. The analyses conducted in support of any precursor demonstration must be based on precursor emissions attributed to sources and activities in the nonattainment area.

(1) A comprehensive precursor demonstration must show that emissions of a particular precursor from all existing stationary, area, and mobile sources located in the nonattainment area do not contribute significantly to $PM_{2.5}$ levels that exceed the standard in the area. If the state chooses to conduct a comprehensive precursor demonstration, the state must conduct the analysis in paragraph (a)(1)(i) of this section and it may conduct the analysis in paragraph (a)(1)(ii) of this section.

(i) *Concentration-based contribution analysis*. The comprehensive precursor demonstration must evaluate the contribution of a particular precursor to $PM_{2.5}$ levels in the area. If the contribution of the precursor to $PM_{2.5}$ levels in the area is not significant, based on the facts and circumstances of the area, then the EPA may approve the demonstration.

(ii) *Sensitivity-based contribution analysis*. If the concentration-based contribution analysis does not support a finding of insignificant contribution, based on the facts and circumstances of the area, then the state may choose to submit an analysis evaluating the sensitivity of $PM_{2.5}$ levels in the area to a decrease in emissions of the precursor in order to determine whether the resulting air quality changes are significant. If the estimated air quality changes determined in the sensitivity analysis are not significant, based on the facts and circumstances of the area, then the EPA may approve the demonstration.

(iii) If a comprehensive precursor demonstration is approved by the EPA, the state will not be required to control emissions of the relevant precursor from existing sources in the current attainment plan.

(2) A major stationary source precursor demonstration must show that emissions of a particular precursor from all existing major stationary sources located in the nonattainment area do not contribute significantly to $PM_{2.5}$ levels that exceed the standard in the area. If the state chooses to conduct a major stationary source precursor demonstration, the state must conduct the analysis in paragraph (a)(2)(i) of this section and it may conduct the analysis in paragraph (a)(2)(ii) of this section.

(i) Concentration-based contribution analysis. The major stationary source precursor demonstration must evaluate the contribution of major source emissions of a particular precursor

to $PM_{2.5}$ levels in the area. If the contribution of the precursor to $PM_{2.5}$ levels in the area is not significant, based on the facts and circumstances of the area, then the EPA may approve the demonstration.

(ii) *Sensitivity-based contribution analysis*. If the concentration-based contribution analysis does not support a finding of insignificant contribution, based on the facts and circumstances of the area, then the state may choose to submit an analysis evaluating the sensitivity of $PM_{2.5}$ levels in the area to a decrease in emissions of the precursor in order to determine whether the resulting air quality changes are significant. If the estimated air quality changes determined in the sensitivity analysis are not significant, based on the facts and circumstances of the area, then the EPA may approve the demonstration.

(iii) If a major stationary source precursor demonstration is approved by the EPA, the state will not be required to control emissions of the relevant precursor from existing major stationary sources in the current attainment plan.

(3)(i) A NNSR precursor demonstration must evaluate the sensitivity of $PM_{2.5}$ levels in the nonattainment area to an increase in emissions of a particular precursor in order to determine whether the resulting air quality changes are significant. If the estimated air quality changes determined in the sensitivity analysis are not significant, based on the facts and circumstances of the area, the state may use that information to identify new major stationary sources and major modifications of a precursor that will not be considered to contribute significantly to $PM_{2.5}$ levels that exceed the standard in the nonattainment area.

(ii) If a NNSR precursor demonstration for a particular $PM_{2.5}$ nonattainment area is approved, the state may exempt such new major stationary sources or major modifications of the particular precursor from the requirements for $PM_{2.5}$ in § 51.165.

(b) If an area with one or more precursor demonstrations approved by the EPA is required to submit another $PM_{2.5}$ attainment plan in accordance with § 51.1003 of this part, the current precursor demonstration(s) will not apply to the new plan. The state must submit the appropriate updated precursor demonstration(s) if it seeks to exempt sources of a particular precursor from control requirements in the new Serious area attainment demonstration or in the NNSR program for the Serious area.

§ 51.1007 [Reserved]

§ 51.1008 Emissions inventory requirements.

(a) For any nonattainment area initially classified as Moderate, the state shall submit to the EPA all of the following:

(1) A base year inventory for the nonattainment area for all emissions sources that meets the following minimum criteria:

(i) The inventory year shall be one of the 3 years for which monitored data were used for designations or another technically appropriate inventory year if justified by the state in the plan submission.

(ii) The inventory shall include actual emissions of all sources within the nonattainment area.

(iii) The emissions values shall be either annual total emissions, average-season-day emissions, or both, as appropriate for the relevant $PM_{2.5}$ NAAQS. The state shall include as part of the plan

a rationale for providing annual or seasonal emissions, and the justification for the period used for any seasonal emissions calculations.

(iv) The inventory shall include direct $PM_{2.5}$ emissions, separately reported $PM_{2.5}$ filterable and condensable emissions, and emissions of the scientific $PM_{2.5}$ precursors, including precursors that are not $PM_{2.5}$ plan precursors pursuant to a precursor demonstration under § 51.1006.

(v) The state shall report emissions as point sources according to the point source emissions thresholds of the Air Emissions Reporting Requirements (AERR), 40 CFR Part 51, subpart A.

(vi) The detail of the emissions inventory shall be consistent with the detail and data elements required by 40 CFR Part 51, subpart A.

(2) An attainment projected inventory for the nonattainment area that meets the following minimum criteria:

(i) The year of the projected inventory shall be the most expeditious year for which projected emissions show modeled $PM_{2.5}$ concentrations below the level of the NAAQS.

(ii) The emissions values shall be projected emissions of the same sources included in the base year inventory for the nonattainment area (*i.e.*, those only within the nonattainment area) and any new sources. The state shall include in this inventory projected emissions growth and contraction from both controls and other causes during the relevant period.

(iii) The temporal period of emissions shall be the same temporal period (annual, average-season-day, or both) as the base year inventory for the nonattainment area.

(iv) Consistent with the base year inventory for the nonattainment area, the inventory shall include direct $PM_{2.5}$ emissions, separately reported $PM_{2.5}$ filterable and condensable emissions,

and emissions of the scientific $PM_{2.5}$ precursors, including precursors that are not $PM_{2.5}$ plan precursors pursuant to a precursor demonstration under § 51.1006 of this part.

(v) The same sources reported as point sources in the base year inventory for the nonattainment area shall be included as point sources in the attainment projected inventory for the nonattainment area. Stationary nonpoint and mobile source projected emissions shall be provided using the same detail (*e.g.*, state, county, and process codes) as the base year inventory for the nonattainment area.

(vi) The same detail of the emissions included shall be consistent with the level of detail and data elements as in the base year inventory for the nonattainment area (*i.e.*, as required by 40 CFR Part 41, subpart A).

(b) For any nonattainment area reclassified as Serious, the state shall submit to the EPA all of the following:

(1) For purposes of meeting the emissions inventory requirements of CAA section 172(c)(3), a base year inventory for the nonattainment area for all emissions sources that meets the requirements listed under paragraphs (a)(1) (ii) through (a)(1)(vi) of this section. In addition, the inventory shall use the Serious area definition of a major source listed under § 51.165(a)(1)(iv)(A), and(a)(1)(vii) and (viii), and consistent with Table 1 of Appendix A to subpart A of this part in determining sources to include as point sources. Finally, the inventory year shall be one of the 3 years for which monitored data were used for reclassification to Serious, or another technically appropriate inventory year if justified by the state in the plan submission.

(2) An attainment projected inventory for the nonattainment area that meets the criteria listed under paragraph (a)(2) of this section.

(c) *Serious nonattainment areas subject to CAA section 189(d) for failing to attain a $PM_{2.5}$ NAAQS by the applicable Serious area attainment date*. No later than 12 months after the EPA finds through notice-and-comment rulemaking that a Serious nonattainment area, or portion thereof contained within a state's borders, fails to attain a $PM_{2.5}$ NAAQS by the applicable attainment date and thus becomes subject to the requirements under CAA section 189(d), the state shall submit to the EPA all of the following:

(1) For purposes of meeting the emissions inventory requirements of CAA section 172(c)(3), a base year inventory for the nonattainment area for all emissions sources that meets the requirements listed under paragraphs (a)(1) (ii) through (a)(1)(vi) of this section. In addition, the inventory shall use the Serious area definition of a major source listed under § 51.165(a)(1)(iv)(A)(vii) and (viii) and consistent with Table 1 of Appendix A to subpart A of this part in determining sources to include as point sources. The inventory year shall be one of the 3 years for which monitored data were used to determine that the area failed to attain the $PM_{2.5}$ NAAQS by the applicable Serious area attainment date, or another technically appropriate inventory year if justified by the state in the plan submission.

(2) An attainment projected inventory for the nonattainment area as defined by § 51.1000(e) and that meets the criteria listed under paragraph (a)(2) of this section.

§ 51.1009 Moderate area attainment plan control strategy requirements.

(a) The state shall identify, adopt, and implement control measures, including control technologies, on sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ plan

precursors located in any Moderate $PM_{2.5}$ nonattainment area or portion thereof located within the state consistent with the following:

(1) The state shall identify all sources of direct $PM_{2.5}$ emissions and all sources of emissions of $PM_{2.5}$ precursors in the nonattainment area in accordance with the emissions inventory requirements of § 51.1008(a).

(2) The state shall identify all potential control measures to reduce emissions from all sources of direct $PM_{2.5}$ emissions and all sources of emissions of $PM_{2.5}$ plan precursors in the nonattainment area identified under paragraph (a)(1) of this section.

(i) The state is not required to identify and evaluate potential control measures to reduce emissions of a particular $PM_{2.5}$ precursor from any existing sources if the state has submitted a comprehensive precursor demonstration approved by the EPA pursuant to § 51.1006, except where the EPA requires such information as necessary to evaluate the comprehensive precursor demonstration pursuant to § 51.1006(a)(1)(ii).

(ii) The state is not required to identify and evaluate potential control measures to reduce emissions of a particular $PM_{2.5}$ precursor from any existing major stationary sources if the state has submitted a major stationary source precursor demonstration approved by the EPA pursuant to § 51.1006, except where the EPA requires such information as necessary to evaluate the major stationary source precursor demonstration pursuant to § 51.1006(a)(1)(ii).

(3) For any potential control measure identified under paragraph (a)(2) of this section, the state may make a demonstration that such measure is not technologically or economically feasible to implement in whole or in part by the end of the sixth calendar year following the effective date

of designation of the area, and the state may eliminate such whole or partial measure from further consideration under this paragraph.

(i) For purposes of evaluating the technological feasibility of a potential control measure, the state may consider factors including but not limited to a source's processes and operating procedures, raw materials, physical plant layout, and potential environmental impacts such as increased water pollution, waste disposal, and energy requirements.

(ii) For purposes of evaluating the economic feasibility of a potential control measure, the state may consider factors including but not limited to capital costs, operating and maintenance costs, and cost effectiveness of the measure.

(iii) The state must submit to the EPA as part of its Moderate area attainment plan a detailed written justification for eliminating from further consideration any potential control measure identified under paragraph (a)(2) of this section on the basis of technological or economic infeasibility.

(4) The state shall use air quality modeling that meets the requirements of § 51.1011(a) and that accounts for emissions reductions estimated due to all technologically and economically feasible control measures identified for sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ plan precursors in the Moderate $PM_{2.5}$ nonattainment area to demonstrate that the area can attain the applicable $PM_{2.5}$ NAAQS as expeditiously as practicable but no later than the end of the sixth year following the effective date of designation of the area. The state may use air quality modeling to demonstrate that the Moderate $PM_{2.5}$ nonattainment area cannot practicably attain the applicable $PM_{2.5}$ NAAQS by such date.

(i) If the state demonstrates through air quality modeling that the area can attain the applicable $PM_{2.5}$ NAAQS by the end of the sixth calendar year following the effective date of designation of the area, the state shall adopt and implement all technologically and economically feasible control measures identified under paragraph (a)(3) of this section that are necessary to bring the area into attainment by such date. The state shall also adopt and implement all other technologically and economically feasible measures identified under paragraph (a)(3) of this section that, when considered collectively, would advance the attainment date for the area by at least 1 year. If the state demonstrates through this analysis that control measures for reducing emissions of a $PM_{2.5}$ precursor would not be necessary for attainment as expeditiously as practicable or to advance the attainment date, then the state would not be required to include control measures for the precursor in the Moderate area attainment plan, nor be required to address the precursor in the RFP plan, quantitative milestones and associated reports, and contingency measures.

(A) Any control measure identified for adoption and implementation under this paragraph that can be implemented in whole or in part by 4 years after the effective date of designation of the Moderate $PM_{2.5}$ nonattainment area shall be considered RACM for the area. Any such control measure that is also a control technology shall be considered RACT for the area.

(B) Any control measure identified for adoption and implementation under this paragraph that can only be implemented in whole or in part during the period beginning 4 years after the effective date of designation of the Moderate $PM_{2.5}$ nonattainment area and the applicable attainment date for the area shall be considered an additional reasonable measure for the area.

(ii) If the state demonstrates that the area cannot practicably attain the applicable $PM_{2.5}$ NAAQS by the end of the sixth calendar year following the effective date of designation of the area, the state shall adopt all technologically and economically feasible control measures identified under paragraph (a)(3) of this section. This requirement also applies to areas that demonstrate pursuant to section 179B that the plan would be adequate to attain or maintain the standard but for emissions emanating from outside the United States.

(A) Any control measure identified for adoption and implementation under this paragraph that can be implemented in whole or in part by 4 years after the effective date of designation of the Moderate $PM_{2.5}$ nonattainment area shall be considered RACM for the area. Any such control measure that is also a control technology shall be considered RACT for the area.

(B) Any control measure identified for adoption and implementation under this paragraph that can only be implemented in whole or in part during the period beginning 4 years after the effective date of designation of the Moderate $PM_{2.5}$ nonattainment area through the end of the sixth calendar year following the effective date of designation of the area shall be considered an additional reasonable measure for the area.

(b) The state shall adopt control measures, including control technologies, on sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ plan precursors located within the state but outside the Moderate $PM_{2.5}$ nonattainment area if adopting such control measures is necessary to provide for attainment of the applicable $PM_{2.5}$ NAAQS in such area.

(c) For new or revised source emissions limitations on sources of direct $PM_{2.5}$ emissions, the state shall establish such emission limitations to apply either to the total of the filterable plus condensable fractions of direct $PM_{2.5}$, or to filterable $PM_{2.5}$ and condensable $PM_{2.5}$ separately.

§ 51.1010 Serious area attainment plan control strategy requirements.

(a) The state shall identify, adopt, and implement best available control measures, including control technologies, on sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ plan precursors located in any Serious $PM_{2.5}$ nonattainment area or portion thereof located within the state and consistent with the following:

(1) The state shall identify all sources of direct $PM_{2.5}$ emissions and all sources of emissions of $PM_{2.5}$ precursors in the nonattainment area in accordance with the emissions inventory requirements of § 51.1008(b).

(2) The state shall identify all potential control measures to reduce emissions from all sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ plan precursors in the nonattainment area identified under paragraph (a)(1) of this section.

(i) The state shall survey other NAAQS nonattainment areas in the U.S. and identify any measures for direct $PM_{2.5}$ and $PM_{2.5}$ plan precursors not previously identified by the state during the development of the Moderate area attainment plan for the area.

(ii) The state is not required to identify and evaluate potential control measures to reduce emissions of a particular $PM_{2.5}$ precursor from any existing sources if the state has submitted a comprehensive precursor demonstration approved by the EPA, except where the EPA requires such information as necessary to evaluate the comprehensive precursor demonstration pursuant to § 51.1006(a)(1)(ii).

(iii) The state is not required to identify and evaluate potential control measures to reduce emissions of a particular $PM_{2.5}$ precursor from any existing major stationary sources if the state

has submitted a major stationary source precursor demonstration approved by the EPA, except where the EPA requires such information as necessary to evaluate the major stationary source demonstration pursuant to § 51.1006(a)(1)(ii).

(3) The state may make a demonstration that any measure identified under paragraph (a)(2) of this section is not technologically or economically feasible to implement in whole or in part by the end of the tenth calendar year following the effective date of designation of the area, and may eliminate such whole or partial measure from further consideration under this paragraph.

(i) For purposes of evaluating the technological feasibility of a potential control measure, the state may consider factors including but not limited to a source's processes and operating procedures, raw materials, physical plant layout, and potential environmental impacts such as increased water pollution, waste disposal, and energy requirements.

(ii) For purposes of evaluating the economic feasibility of a potential control measure, the state may consider capital costs, operating and maintenance costs, and cost effectiveness of the measure.

(iii) The state shall submit to the EPA as part of its Serious area attainment plan submission a detailed written justification for eliminating from further consideration any potential control measure identified under paragraph (a)(2) of this section on the basis of technological or economic infeasibility. The state shall provide as part of its written justification an explanation of how its criteria for determining the technological and economic feasibility of potential control measures under paragraphs (a)(3)(i) and (ii) of this section are more stringent than its criteria for determining the technological and economic feasibility of potential control measures under § 51.1009(a)(3)(i) and (ii) for the same sources in the $PM_{2.5}$ nonattainment area.

(4) Except as provided under paragraph (a)(3) of this section, the state shall adopt and implement all potential control measures identified under paragraph (a)(2) of this section.

(i) Any control measure that can be implemented in whole or in part by the end of the fourth year following the date of reclassification of the area to Serious shall be considered a best available control measure for the area. Any such control measure that is also a control technology for a stationary source in the area shall be considered a best available control technology for the area.

(ii) Any control measure that can be implemented in whole or in part between the end of the fourth year following the date of reclassification of the area to Serious and the applicable attainment date for the area shall be considered an additional feasible measure.

(5) The state shall use air quality modeling that meets the requirements of § 51.1011(b) and that accounts for emissions reductions estimated due to all best available control measures, including best available control technologies, and additional feasible measures identified for sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ plan precursors in the area to demonstrate that the area can attain the $PM_{2.5}$ NAAQS as expeditiously as practicable but no later than the end of the tenth calendar year following the effective date of designation of the area, or to demonstrate that the Serious $PM_{2.5}$ nonattainment area cannot practicably attain the applicable $PM_{2.5}$ NAAQS by such date.

(b) For a Serious $PM_{2.5}$ nonattainment area for which air quality modeling demonstrates the area cannot practicably attain the applicable $PM_{2.5}$ NAAQS by the end of the tenth calendar year following the date of designation of the area, the state shall identify, adopt, and implement the most stringent control measures that are included in the attainment plan for any state or are

achieved in practice in any state, and can be feasibly implemented in the area, consistent with the following requirements.

(1) The state shall identify all sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ precursors in the nonattainment area in accordance with the emissions inventory requirements of § 51.1008(b).

(2) The state shall identify all potential control measures to reduce emissions from all sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ plan precursors in the nonattainment area identified under paragraph (b)(1) of this section.

(i) For the sources and source categories represented in the emission inventory for the nonattainment area, the state shall identify the most stringent measures for reducing direct $PM_{2.5}$ and $PM_{2.5}$ plan precursors adopted into any SIP or used in practice to control emissions in any state.

(ii) The state shall reconsider and reassess any measures previously rejected by the state during the development of any previous Moderate area or Serious area attainment plan control strategy for the area.

(3) The state may make a demonstration that a measure identified under paragraph (b)(2) of this section is not technologically or economically feasible to implement in whole or in part by 5 years after the applicable attainment date for the area, and may eliminate such whole or partial measure from further consideration under this paragraph.

(i) For purposes of evaluating the technological feasibility of a potential control measure, the state may consider factors including but not limited to a source's processes and operating

procedures, raw materials, physical plant layout, and potential environmental impacts such as increased water pollution, waste disposal, and energy requirements.

(ii) For purposes of evaluating the economic feasibility of a potential control measure, the state may consider capital costs, operating and maintenance costs, and cost effectiveness of the measure.

(iii) The state shall submit to the EPA as part of its Serious area attainment plan submission a detailed written justification for eliminating from further consideration any potential control measure identified under paragraph (b)(2) of this section on the basis of technological or economic infeasibility.

(4) Except as provided under paragraph (b)(3) of this section, the state shall adopt and implement all control measures identified under paragraph (b)(2) of this section that collectively shall achieve attainment as expeditiously as practicable but no later than 5 years after the applicable attainment date for the area.

(5) The state shall use air quality modeling that meets the requirements of § 51.1011(b) and that accounts for emissions reductions estimated due to all most stringent measures; best available control measures, including best available control technologies; and additional feasible measures identified for sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ plan precursors in the area to demonstrate that the area can attain the $PM_{2.5}$ NAAQS as expeditiously as practicable but no later than the end of the fifteenth calendar year following the effective date of designation of the area.

(c) For a Serious $PM_{2.5}$ nonattainment area that the EPA has determined has failed to attain by the applicable attainment date, the state shall submit a revised attainment plan with a control

strategy that demonstrates that each year the area will achieve at least a 5 percent reduction in emissions of direct $PM_{2.5}$ or a 5 percent reduction in emissions of a $PM_{2.5}$ plan precursor based on the most recent emissions inventory for the area; and that the area will attain the standard as expeditiously as practicable consistent with § 51.1004(a)(3). The plan shall meet the requirements of § 51.1003(c)-(d), and the following requirements:

(1) The state shall identify all sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ precursors in the nonattainment area in accordance with the emissions inventory requirements of § 51.1008(b).

(2) The state shall identify all potential control measures to reduce emissions from all sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ plan precursors in the nonattainment area identified under paragraph (c)(1) of this section.

(i) For the sources and source categories represented in the emission inventory for the nonattainment area, the state shall identify the most stringent measures for reducing direct $PM_{2.5}$ and $PM_{2.5}$ plan precursors adopted into any SIP or used in practice to control emissions in any state, as applicable.

(ii) The state shall reconsider and reassess any measures previously rejected by the state during the development of any Moderate area or Serious area attainment plan control strategy for the area.

(3) The state may make a demonstration that a measure identified under paragraph (c)(2) of this section is not technologically or economically feasible to implement in whole or in part within 5 years or such longer period as the EPA may determine is appropriate after the EPA's

determination that the area failed to attain by the Serious area attainment date, and may eliminate such whole or partial measure from further consideration under this paragraph.

(i) For purposes of evaluating the technological feasibility of a potential control measure, the state may consider factors including but not limited to a source's processes and operating procedures, raw materials, physical plant layout, and potential environmental impacts such as increased water pollution, waste disposal, and energy requirements.

(ii) For purposes of evaluating the economic feasibility of a potential control measure, the state may consider capital costs, operating and maintenance costs, and cost effectiveness of the measure.

(iii) The state shall submit to the EPA as part of its Serious area attainment plan submission a detailed written justification for eliminating from further consideration any potential control measure identified under paragraph (c)(2) of this section on the basis of technological or economic infeasibility.

(4) Except as provided under paragraph (c)(3) of this section, the state shall adopt and implement all control measures identified under paragraph (c)(2) of this section that collectively achieve attainment of the standard as expeditiously as practicable pursuant to § 51.1004(a)(3).

(5) The state shall conduct air quality modeling that meets the requirements of § 51.1011(b) and that accounts for emissions reductions due to control measures needed to meet the annual reduction requirement of 5 percent of direct $PM_{2.5}$ or a $PM_{2.5}$ plan precursor; most stringent measures; best available control measures, including best available control technologies; and additional feasible measures identified for sources of direct $PM_{2.5}$ emissions and sources of

emissions of $PM_{2.5}$ plan precursors in the area in order to demonstrate that the area can attain the $PM_{2.5}$ NAAQS as expeditiously as practicable.

(d) The state shall adopt control measures, including control technologies, on sources of direct $PM_{2.5}$ emissions and sources of emissions of $PM_{2.5}$ plan precursors located within the state but outside the Serious $PM_{2.5}$ nonattainment area if adopting such control measures is necessary to provide for attainment of the applicable $PM_{2.5}$ NAAQS in such area by the attainment date.

(e) For new or revised source emissions limitations on sources of direct $PM_{2.5}$ emissions, the state shall establish such emission limitations to apply either to the total of the filterable plus condensable fractions of direct $PM_{2.5}$, or to filterable $PM_{2.5}$ and condensable $PM_{2.5}$ separately.

§ 51.1011 Attainment demonstration and modeling requirements.

(a) *Nonattainment areas initially classified as Moderate*. The attainment demonstration due to the EPA as part of any Moderate area attainment plan required under § 51.1003(a) shall meet all of the following criteria:

(1) The attainment demonstration shall show the projected attainment date for the Moderate nonattainment area that is as expeditious as practicable in accordance with the requirements of § 51.1004(a)(1).

(2) The attainment demonstration shall meet the requirements of Appendix W of this part and shall include inventory data, modeling results, and emission reduction analyses on which the state has based its projected attainment date.

(3) The base year for the emissions inventory required for an attainment demonstration under this paragraph shall be one of the 3 years used for designations or another technically appropriate inventory year if justified by the state in the plan submission.

(4) The control strategies modeled as part of the attainment demonstration shall be consistent with the following as applicable:

(i) For a Moderate area that can demonstrate attainment of the applicable $PM_{2.5}$ NAAQS no later than the end of the sixth calendar year following the date of designation of the area with the implementation of RACM and RACT and additional reasonable measures, the control strategies modeled as part of the attainment demonstration shall be consistent with control strategy requirements under § 51.1009(a).

(ii) For a Moderate area that cannot practicably attain the applicable $PM_{2.5}$ NAAQS by the end of the sixth calendar year following the date of designation of the area with the implementation of RACM and RACT and additional reasonable measures, the control strategies modeled as part of the attainment demonstration shall be consistent with control strategy requirements under § 51.1009(b).

(5) Required time frame for obtaining emissions reductions. For each Moderate nonattainment area, the attainment plan must provide for implementation of all control measures needed for attainment as expeditiously as practicable. All control measures in the attainment demonstration must be implemented no later than the beginning of the year containing the applicable attainment date, notwithstanding RACM implementation deadline requirements in § 51.1009.

(b) *Nonattainment areas reclassified as Serious*. The attainment demonstration due to the EPA as part of a Serious area attainment plan required under § 51.1003(b) or (c) shall meet all of the following criteria:

(1) The attainment demonstration shall show the projected attainment date for the Serious nonattainment area that is as expeditious as practicable.

(2) The attainment demonstration shall meet the requirements of Appendix W of this part and shall include inventory data, modeling results, and emission reduction analyses on which the state has based its projected attainment date.

(3) The base year for the emissions inventories required for attainment demonstrations under this paragraph shall be one of the 3 years used for designations or another technically appropriate inventory year if justified by the state in the plan submission.

(4) The control strategies modeled as part of a Serious area attainment demonstration shall be consistent with the control strategies required pursuant to § 51.1003 and § 51.1010.

(5) Required timeframe for obtaining emissions reductions. For each Serious nonattainment area, the attainment plan must provide for implementation of all control measures needed for attainment as expeditiously as practicable. All control measures must be implemented no later than the beginning of the year containing the applicable attainment date, notwithstanding BACM implementation deadline requirements in § 51.1010.

§ 51.1012 Reasonable further progress (RFP) requirements.

(a) Each attainment plan for a $PM_{2.5}$ nonattainment area shall include an RFP plan that demonstrates that sources in the area will achieve such annual incremental reductions in

emissions of direct $PM_{2.5}$ and $PM_{2.5}$ plan precursors as are necessary to ensure attainment of the applicable $PM_{2.5}$ NAAQS as expeditiously as practicable. The RFP plan shall include all of the following:

(1) A schedule describing the implementation of control measures during each year of the applicable attainment plan. Control measures for Moderate area attainment plans are required in § 51.1009, and control measures for Serious area attainment plans are required in § 51.1010.

(2) RFP projected emissions for direct $PM_{2.5}$ and all $PM_{2.5}$ plan precursors for each applicable milestone year, based on the anticipated implementation schedule for control measures required in paragraph (a)(1) of this section. For purposes of establishing motor vehicle emissions budgets for transportation conformity purposes (as required in 40 CFR Part 93) for a $PM_{2.5}$ nonattainment area, the state shall include in its RFP submission an inventory of on-road mobile source emissions in the nonattainment area for each milestone year.

(3) An analysis that presents the schedule of control measures and estimated emissions changes to be achieved by each milestone year, and that demonstrates that the control strategy will achieve reasonable progress toward attainment between the applicable base year and the attainment year. The analysis shall rely on information from the base year inventory for the nonattainment area required in § 51.1008(a)(1) and the attainment projected inventory for the nonattainment area required in § 51.1008(a)(2), in addition to the RFP projected emissions required in paragraph (a)(2) of this section.

(4) An analysis that demonstrates that by the end of the calendar year for each milestone date for the area determined in accordance with § 51.1013(a), pollutant emissions will be at levels that reflect either generally linear progress or stepwise progress in reducing emissions on an annual

basis between the base year and the attainment year. A demonstration of stepwise progress must be accompanied by appropriate justification for the selected implementation schedule.

(5) At the state's election, an analysis that identifies air quality targets associated with the RFP projected emissions identified for the milestone years at the design value monitor locations.

(b) For a multi-state or multi-jurisdictional nonattainment area, the RFP plans for each state represented in the nonattainment area shall demonstrate RFP on the basis of common multi-state inventories. The states or jurisdictions within which the area is located must provide a coordinated RFP plan. Each state in a multi-state nonattainment area must ensure that the sources within its boundaries comply with enforceable emission levels and other requirements that in combination with the reductions planned in other state(s) within the nonattainment area will provide for attainment as expeditiously as practicable and demonstrate RFP consistent with these regulations.

§ 51.1013 Quantitative milestone requirements.

(a) Consistent with CAA section 189(c)(1), the state must submit in each attainment plan for a $PM_{2.5}$ nonattainment area specific quantitative milestones that demonstrate reasonable further progress toward attainment of the applicable $PM_{2.5}$ NAAQS in the area and that meet the following requirements:

(1) *Nonattainment areas initially classified as Moderate*. (i) Except as provided in paragraph (a)(4) of this section, each attainment plan submittal for a Moderate $PM_{2.5}$ nonattainment area shall contain quantitative milestones to be achieved no later than a milestone date of 4.5 years and 7.5 years from the date of designation of the area.

(ii) The plan shall contain quantitative milestones to be achieved by the milestone dates specified in paragraph (a)(1)(i) of this section, as applicable, and that provide for objective evaluation of reasonable further progress toward timely attainment of the applicable $PM_{2.5}$ NAAQS in the area. At a minimum, each quantitative milestone plan must include a milestone for tracking progress achieved in implementing the SIP control measures, including RACM and RACT, by each milestone date.

(2) *Nonattainment areas reclassified as Serious*. (i) Except as provided in paragraph (a)(4) of this section, each attainment plan submission that demonstrates that a Serious $PM_{2.5}$ nonattainment area can attain a particular $PM_{2.5}$ NAAQS by the end of the tenth calendar year following the effective date of designation of the area with the implementation of control measures as required under § 51.1010(a) shall contain quantitative milestones to be achieved no later than milestone dates of 7.5 years and 10.5 years, respectively, from the date of designation of the area.

(ii) Except as provided in paragraph (a)(4) of this section, each attainment plan submission that demonstrates that a Serious $PM_{2.5}$ nonattainment area cannot practicably attain a particular $PM_{2.5}$ NAAQS by the end of the tenth calendar year following the date of designation of the area with the implementation of control measures required under § 51.1010(a) shall contain quantitative milestones to be achieved no later than milestone dates of 7.5 years, 10.5 years, and 13.5 years from the date of designation of the area. If the attainment date is beyond 13.5 years from the date of designation of the area, such attainment plan shall also contain a quantitative milestones to be achieved no later than milestone dates of 16.5 years, respectively, from the date of designation of the area.

(iii) The plan shall contain quantitative milestones to be achieved by the milestone dates specified in paragraphs (a)(2)(i) and (ii) of this section, as applicable, and that provide for objective evaluation of reasonable further progress toward timely attainment of the applicable $PM_{2.5}$ NAAQS in the area. At a minimum, each quantitative milestone plan must include a milestone for tracking progress achieved in implementing SIP control measures, including BACM and BACT, by each milestone date.

(3) *Serious areas that fail to attain by the applicable Serious area attainment date*. (i) Except as provided in paragraph (a)(4) of this section, each attainment plan submission for a Serious area that failed to attain a particular $PM_{2.5}$ NAAQS by the applicable Serious area attainment date and is therefore subject to the requirements of CAA section 189(d) and § 51.1003(c) shall contain quantitative milestones.

(A) If the attainment plan is due prior to a date 13.5 years from designation of the area, then the plan shall contain milestones to be achieved by no later than a milestone date of 13.5 years from the date of designation of the area, and every 3 years thereafter, until the milestone date that falls within 3 years after the applicable attainment date.

(B) If the attainment plan is due later than a date 13.5 years from designation of the area, then the plan shall contain milestones to be achieved by no later than a milestone date of 16.5 years from the date of designation of the area, and every 3 years thereafter, until the milestone date that falls within 3 years after the applicable attainment date.

(ii) The plan shall contain quantitative milestones to be achieved by the milestone dates for the area, and that provide for objective evaluation of reasonable further progress toward timely attainment of the applicable $PM_{2.5}$ NAAQS in the area. At a minimum, each quantitative

milestone plan must include a milestone for tracking progress achieved in implementing the SIP control measures by each milestone date.

(4) Each attainment plan submission for an area designated nonattainment for the 1997 and/or 2006 $PM_{2.5}$ NAAQS before January 15, 2015, shall contain quantitative milestones to be achieved no later than 3 years after December 31, 2014, and every 3 years thereafter until the milestone date that falls within 3 years after the applicable attainment date.

(b) Not later than 90 days after the date on which a milestone applicable to a $PM_{2.5}$ nonattainment area occurs, each state in which all or part of such area is located shall submit to the Administrator a milestone report that contains all of the following:

(1) A certification by the Governor or Governor's designee that the SIP control strategy is being implemented consistent with the RFP plan, as described in the applicable attainment plan;

(2) Technical support, including calculations, sufficient to document completion statistics for appropriate milestones and to demonstrate that the quantitative milestones have been satisfied and how the emissions reductions achieved to date compare to those required or scheduled to meet RFP; and,

(3) A discussion of whether the area will attain the applicable $PM_{2.5}$ NAAQS by the projected attainment date for the area.

(c) If a state fails to submit a milestone report by the date specified in paragraph (b) of this section, the Administrator shall require the state to submit, within 9 months after such failure, a plan revision that assures that the area will achieve the next milestone or attain the applicable NAAQS by the applicable date, whichever is earlier. If the Administrator determines that an area

has not met any applicable milestone by the milestone date, the state shall submit, within 9 months after such determination, a plan revision that assures that the area will achieve the next milestone or attain the applicable NAAQS by the applicable date, whichever is earlier.

§ 51.1014 Contingency measure requirements.

(a) The state must include as part of each attainment plan submitted under this subpart for a $PM_{2.5}$ nonattainment area specific contingency measures that shall take effect with minimal further action by the state or the EPA following a determination by the Administrator that the area has failed:

(1) To meet any RFP requirement in an attainment plan approved in accordance with § 51.1012;

(2) To meet any quantitative milestone in an attainment plan approved in accordance with § 51.1013;

(3) To submit a quantitative milestone report required under § 51.1013(b); or,

(4) To attain the applicable $PM_{2.5}$ NAAQS by the applicable attainment date.

(b) The contingency measures adopted as part of a $PM_{2.5}$ attainment plan shall meet all of the following requirements:

(1) The contingency measures shall consist of control measures that are not otherwise included in the control strategy or that achieve emissions reductions not otherwise relied upon in the control strategy for the area; and,

(2) Each contingency measure shall specify the timeframe within which its requirements become effective following a determination by the Administrator under paragraph (a) of this section.

(c) The attainment plan submission shall contain a description of the specific trigger mechanisms for the contingency measures and specify a schedule for implementation.

§ 51.1015 Clean data requirements.

(a) *Nonattainment areas initially classified as Moderate*. Upon a determination by the EPA that a Moderate $PM_{2.5}$ nonattainment area has attained the $PM_{2.5}$ NAAQS, the requirements for the state to submit an attainment demonstration, provisions demonstrating that reasonably available control measures (including reasonably available control technology for stationary sources) shall be implemented no later than 4 years following the date of designation of the area, reasonable further progress plan, quantitative milestones and quantitative milestone reports, and contingency measures for the area shall be suspended until such time as:

(1) The area is redesignated to attainment, after which such requirements are permanently discharged; or,

(2) The EPA determines that the area has re-violated the $PM_{2.5}$ NAAQS, at which time the state shall submit such attainment plan elements for the Moderate nonattainment area by a future date to be determined by the EPA and announced through publication in the *Federal Register* at the time EPA determines the area is violating the $PM_{2.5}$ NAAQS.

(b) *Nonattainment areas reclassified as Serious*. Upon a determination by the EPA that a Serious $PM_{2.5}$ nonattainment area has attained the $PM_{2.5}$ NAAQS, the requirements for the state to submit an attainment demonstration, reasonable further progress plan, quantitative milestones and quantitative milestone reports, and contingency measures for the area shall be suspended until such time as:

(1) The area is redesignated to attainment, after which such requirements are permanently discharged; or,

(2) The EPA determines that the area has re-violated the $PM_{2.5}$ NAAQS, at which time the state shall submit such attainment plan elements for the Serious nonattainment area by a future date to be determined by the EPA and announced through publication in the *Federal Register* at the time the EPA determines the area is violating the $PM_{2.5}$ NAAQS.

§ 51.1016 Continued applicability of the FIP and SIP requirements pertaining to interstate transport under CAA section 110(a)(2)(D)(i) and (ii) after revocation of the 1997 primary annual $PM_{2.5}$ NAAQS.

All control requirements associated with a FIP or approved SIP in effect for an area pursuant to obligations arising from CAA section 110(a)(2)(D)(i) and (ii) as of **[INSERT DATE 60 DAYS FROM PUBLICATION IN THE FEDERAL REGISTER]**, such as the CAIR or the CSAPR, shall continue to apply after revocation of the 1997 primary annual $PM_{2.5}$ NAAQS. Control requirements associated with a FIP or approved into the SIP pursuant to obligations arising from CAA section 110(a)(2)(D)(i) and (ii), including 40 CFR 51.123, 51.124, 52.35, 52.36, 52.38 and 52.39, may be modified by the state only if the requirements of § 51.123, 51.124, 52.35, 52.36, 52.38 and 52.39, including statewide annual SO_2 and annual NO_x emission budgets, continue to be in effect. Any such modification must meet the requirements of CAA section 110(l).

7. In Appendix S to Part 51:

a. Revise paragraph II.A.4.(i)(*a*) introductory text;

b. Add paragraphs II.A.4.(i)(*a*)(*7*)-(*8*);

c. Revise paragraph II.A.10.(i);

d. Add paragraph II.A.10.(vi);

e. Revise paragraph II.A.31.(ii)(*b*)(*2*); and

f. Add paragraphs II.A.31.(ii)(*b*)(*3*) and (*4*).

The revisions and additions read as follows:

Appendix S to Part 51 – Emission Offset Interpretative Ruling

*** * * * ***

II. * * *

A. * * *

4. (i) * * *

(*a*) Any stationary source of air pollutants which emits, or has the potential to emit, 100 tons per year or more of a regulated NSR pollutant (as defined in paragraph II.A.31 of this Ruling), except that lower emissions thresholds shall apply in areas subject to subpart 2, subpart 3, or subpart 4 of part D, title I of the Act, according to paragraphs II.A.4(i)(*a*)(1) through (8) of this ruling.

* * * * *

(*7*) 70 tons per year of $PM_{2.5}$ in any serious nonattainment area for $PM_{2.5}$.

(*8*) 70 tons per year of any individual $PM_{2.5}$ precursor (as defined in paragraph II.A.31 of this Ruling) in any Serious nonattainment area for $PM_{2.5}$.

* * * * *

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, 40 tpy of Nitrogen oxides emissions, or 40 tpy of Volatile organic compound emissions, to the extent that any such pollutant is defined as a precursor for $PM_{2.5}$ in paragraph II.A.31 of this Ruling.

* * * * *

(vi) In any nonattainment area for $PM_{2.5}$ in which a state must regulate Ammonia as a regulated NSR pollutant (as a $PM_{2.5}$ precursor) as defined in paragraph II.A.31 of this Ruling, the reviewing authority shall define "significant" for Ammonia for that area and establish a record to document its supporting basis. All sources with modification projects with increases in Ammonia emissions that are not subject to Section IV of this Ruling must maintain records of the non-applicability of Section IV that reference the definition of "significant" for Ammonia that is established by the reviewing authority in the nonattainment area where the source is located.

31. * * *

(ii) * * *

(*b*) * * *

(*2*) Sulfur dioxide and Nitrogen oxides are regulated as precursors to $PM_{2.5}$ in all $PM_{2.5}$ nonattainment areas.

(*3*) For any area that was designated nonattainment for $PM_{2.5}$ on or before April 15, 2015, Volatile organic compounds and Ammonia shall be regulated as precursors to $PM_{2.5}$ beginning on April 15, 2017, with respect to any permit issued for $PM_{2.5}$, unless the following conditions are met: the state submits a SIP for the Administrator's review containing the state's preconstruction review provisions for $PM_{2.5}$ consistent with § 51.165 and a complete NNSR precursor demonstration consistent with § 51.1006(a)(3); and such SIP is determined to be complete by the Administrator or deemed to be complete by operation of law in accordance with section 110(k)(1)(B) of the Act by April 15, 2017. If these conditions are met, the precursor(s) addressed by the NNSR precursor demonstration (Volatile organic compounds, Ammonia, or

both) shall not be regulated as a precursor to $PM_{2.5}$ in such area. If the Administrator subsequently disapproves the state's preconstruction review provisions for $PM_{2.5}$ and the NNSR precursor demonstration, the precursor(s) addressed by the NNSR precursor demonstration shall be regulated as a precursor to $PM_{2.5}$ under this Ruling in such area as of April 15, 2017, or the effective date of the disapproval, whichever date is later.

(*4*) For any area that is designated nonattainment for $PM_{2.5}$ after April 15, 2015, and was not already designated nonattainment for $PM_{2.5}$ on or immediately prior to such date, Volatile organic compounds and Ammonia shall be regulated as precursors to $PM_{2.5}$ under this Ruling beginning 24 months from the date of designation as nonattainment for $PM_{2.5}$ with respect to any permit issued for $PM_{2.5}$, unless the following conditions are met: the state submits a SIP for the Administrator's review which contains the state's preconstruction review provisions for $PM_{2.5}$ consistent with § 51.165 and a complete NNSR precursor demonstration consistent with § 51.1006(a)(3); and such SIP is determined to be complete by the Administrator or deemed to be complete by operation of law in accordance with section 110(k)(1)(B) of the Act by the date 24 months from the date of designation. If these conditions are met, the precursor(s) addressed by the NNSR precursor demonstration (Volatile organic compounds, Ammonia, or both) shall not be regulated as a precursor to $PM_{2.5}$ in such area. If the Administrator subsequently disapproves the state's preconstruction review provisions for $PM_{2.5}$ and the NNSR precursor demonstration, the precursor(s) addressed by the NNSR precursor demonstration shall be regulated as a precursor to $PM_{2.5}$ under this Ruling in such area as of the date 24 months from the date of designation, or the effective date of the disapproval, whichever date is later.

* * * * *

PART 93--DETERMINING CONFORMITY OF FEDERAL ACTIONS TO STATE OR FEDERAL IMPLEMENTATION PLANS

8. The authority citation for part 93 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

Subpart B—Determining Conformity of General Federal Actions to State or Federal Implementation Plans

9. In § 93.153, revise paragraphs (b)(1) and (2) to read as follows:

§93.153 Applicability.

* * * * *

(b) * * *

(1) For purposes of paragraph (b) of this section the following rates apply in nonattainment areas (NAA's):

	Tons/year
Ozone (VOC's or NO_x):	
Serious NAA's	50
Severe NAA's	25
Extreme NAA's	10
Other ozone NAA's outside an ozone transport region	100
Other ozone NAA's inside an ozone transport region:	
VOC	50
NO_x	100
Carbon Monoxide: All maintenance areas	100
SO_2 or NO_2: All NAA's	100
PM_{10}:	
Moderate NAA's	100

Serious NAA's	70
$PM_{2.5}$ (direct emissions, SO_2, NO_x, VOC, and Ammonia):	
Moderate NAA’s	100
Serious NAA's	70
Pb: All NAA's	25

(2) For purposes of paragraph (b) of this section the following rates apply in maintenance areas:

	Tons/year
Ozone (NO_x), SO_2 or NO_2:	
All maintenance areas	100
Ozone (VOC's):	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
Carbon monoxide: All maintenance areas	100
PM_{10}: All maintenance areas	100
$PM_{2.5}$ (direct emissions, SO_2, NO_x, VOC, and Ammonia)	100
All maintenance areas	100
Pb: All maintenance areas	25

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