6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R04-OAR-2009-0782-201149, FRL-9638-8]

Approval and Promulgation of Air Quality Implementation Plans; State of Alabama; Regional Haze State Implementation Plan

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA is proposing a limited approval of a revision to the Alabama state implementation plan (SIP) submitted by the State of Alabama through the Alabama Department of Environmental Management (ADEM), on July 15, 2008, that addresses regional haze for the first implementation period. This revision addresses the requirements of the Clean Air Act (CAA or Act) and EPA's rules that require states to prevent any future and remedy any existing anthropogenic impairment of visibility in mandatory Class I areas (national parks and wilderness areas) caused by emissions of air pollutants from numerous sources located over a wide geographic area (also referred to as the "regional haze program"). States are required to assure reasonable progress towards the national goal of achieving natural visibility conditions in Class I areas. EPA is proposing a limited approval of this SIP revision to implement the regional haze requirements for Alabama on the basis that the revision, as a whole, strengthens the Alabama SIP. Additionally, EPA is proposing to rescind the federal regulations previously approved into the Alabama SIP on November 24, 1987, and to rely on the provisions in Alabama's July 15, 2008, SIP submittal to meet the long-term strategy (LTS) requirements for reasonably

attributable visibility impairment (RAVI). EPA has previously proposed a limited disapproval of the Alabama regional haze SIP because of deficiencies in the State's regional haze SIP submittal arising from the remand by the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) to EPA of the Clean Air Interstate Rule (CAIR). Consequently, EPA is not proposing to take action in this rulemaking to address the State's reliance on CAIR to meet certain regional haze requirements.

DATES: Comments must be received on or before [insert date 30 days from the date of publication in the Federal Register].

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-R04-OAR-2009-0782, by one of the following methods:

1. www.regulations.gov: Follow the on-line instructions for submitting comments.
2. E-mail: benjamin.lynorae@epa.gov.
3. Fax: 404-562-9019.
4. Mail: EPA-R04-OAR-2009-0782, Regulatory Development Section, Air Planning Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street, SW, Atlanta, Georgia 30303-8960.
5. Hand Delivery or Courier: Lynorae Benjamin, Chief, Regulatory Development Section, Air Planning Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street, SW, Atlanta, Georgia 30303-8960. Such deliveries are only accepted during the Regional Office's normal hours of operation. The Regional Office's official hours of business are Monday through

Friday, 8:30 to 4:30, excluding Federal holidays.

Instructions: Direct your comments to Docket ID No. "EPA-R04-OAR-2009-0782." EPA's policy is that all comments received will be included in the public docket without change and may be made available online at www.regulations.gov, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit through www.regulations.gov or e-mail, information that you consider to be CBI or otherwise protected. The www.regulations.gov website is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through www.regulations.gov, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at http://www.epa.gov/epahome/dockets.htm.

Docket: All documents in the electronic docket are listed in the www.regulations.gov index. Although listed in the index, some information is not publicly available, i.e., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted

material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in www.regulations.gov or in hard copy at the Regulatory Development Section, Air Planning Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street, SW, Atlanta, Georgia 30303-8960. EPA requests that if at all possible, you contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section to schedule your inspection. The Regional Office's official hours of business are Monday through Friday, 8:30 to 4:30, excluding Federal holidays.

FOR FURTHER INFORMATION CONTACT: Sara Waterson or Michele Notarianni, Regulatory Development Section, Air Planning Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street, SW, Atlanta, Georgia 30303-8960. Sara Waterson can be reached at telephone number (404) 562-9061 and by electronic mail at waterson.sara@epa.gov. Michele Notarianni can be reached at telephone number (404) 562-9031 and by electronic mail at notarianni.michele@epa.gov.

SUPPLEMENTARY INFORMATION:

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I. What Action is EPA Proposing to Take?

EPA is proposing a limited approval of Alabama's July 15, 2008, SIP revision addressing regional haze under CAA sections 301(a) and 110(k)(3) because the revision as a whole strengthens the Alabama SIP. This proposed rulemaking and the accompanying Technical Support Document[1] (TSD) explain the basis for EPA's proposed limited approval action.[2]

[1] EPA's TSD to this action, entitled "*Technical Support Document for Alabama Regional Haze Submittal*," is included in the public docket for this action.

In a separate action, EPA has proposed a limited disapproval of the Alabama regional haze SIP because of deficiencies in the State's regional haze SIP submittal arising from the State's reliance on CAIR to meet certain regional haze requirements. *See* 76 FR 82219 (December 30, 2011). EPA is not proposing to take action in today's rulemaking on issues associated with Alabama's reliance on CAIR in its regional haze SIP. Comments on EPA's proposed limited disapproval of Alabama's regional haze SIP are accepted at the docket for EPA's December 30, 2011 (*see* Docket ID No. EPA-HQ-OAR-2011-0729). The comment period for EPA's December 30, 2011, rulemaking is scheduled to end on February, 28, 2012.

In this action, EPA is also proposing to rescind the federal regulations in 40 CFR 52.61 that were approved into the Alabama SIP. *See* 52 FR 45138 (November 24, 1987). EPA is proposing to rely on the provisions in Alabama's July 15, 2008, SIP submittal to meet the monitoring and LTS requirements for RAVI at 40 CFR 51.305 and 40 CFR 51.306.

II. What is the Background for EPA's Proposed Action?

A. The Regional Haze Problem

Regional haze is visibility impairment that is produced by a multitude of sources and activities which are located across a broad geographic area and emit fine particles ($PM_{2.5}$) (e.g., sulfates, nitrates, organic carbon, elemental carbon, and soil dust), and their precursors (e.g.,

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[2] Under CAA sections 301(a) and 110(k)(6) and EPA's long-standing guidance, a limited approval results in approval of the entire SIP submittal, even of those parts that are deficient and prevent EPA from granting a full approval of the SIP revision. *Processing of State Implementation Plan (SIP) Revisions*, EPA Memorandum from John Calcagni, Director, Air Quality Management Division, OAQPS, to Air Division Directors, EPA Regional Offices I-X, September 7, 1992, (1992 Calcagni Memorandum) located at http://www.epa.gov/ttn/caaa/t1/memoranda/siproc.pdf.

sulfur dioxide (SO_2), nitrogen oxides (NOx), and in some cases, ammonia (NH_3) and volatile organic compounds (VOC)). Fine particle precursors react in the atmosphere to form fine particulate matter which impairs visibility by scattering and absorbing light. Visibility impairment reduces the clarity, color, and visible distance that one can see. $PM_{2.5}$ can also cause serious health effects and mortality in humans and contributes to environmental effects such as acid deposition and eutrophication.

Data from the existing visibility monitoring network, the "Interagency Monitoring of Protected Visual Environments" (IMPROVE) monitoring network, show that visibility impairment caused by air pollution occurs virtually all the time at most national park and wilderness areas. The average visual range[3] in many Class I areas (i.e., national parks and memorial parks, wilderness areas, and international parks meeting certain size criteria) in the western United States is 100-150 kilometers, or about one-half to two-thirds of the visual range that would exist without anthropogenic air pollution. In most of the eastern Class I areas of the United States, the average visual range is less than 30 kilometers, or about one-fifth of the visual range that would exist under estimated natural conditions. *See* 64 FR 35715 (July 1, 1999).

B. Requirements of the CAA and EPA's Regional Haze Rule (RHR)

In section 169A of the 1977 Amendments to the CAA, Congress created a program for protecting visibility in the nation's national parks and wilderness areas. This section of the CAA establishes as a national goal the "prevention of any future, and the remedying of any existing,

[3] Visual range is the greatest distance, in kilometers or miles, at which a dark object can be viewed against the sky.

impairment of visibility in mandatory Class I areas[4] which impairment results from manmade air pollution." On December 2, 1980, EPA promulgated regulations to address visibility impairment in Class I areas that is "reasonably attributable" to a single source or small group of sources, i.e., "reasonably attributable visibility impairment". *See* 45 FR 80084. These regulations represented the first phase in addressing visibility impairment. EPA deferred action on regional haze that emanates from a variety of sources until monitoring, modeling and scientific knowledge about the relationships between pollutants and visibility impairment were improved.

Congress added section 169B to the CAA in 1990 to address regional haze issues. EPA promulgated a rule to address regional haze on July 1, 1999 (64 FR 35713), the RHR. The RHR revised the existing visibility regulations to integrate into the regulation provisions addressing regional haze impairment and established a comprehensive visibility protection program for Class I areas. The requirements for regional haze, found at 40 CFR 51.308 and 51.309, are included in EPA's visibility protection regulations at 40 CFR 51.300-309. Some of the main elements of the regional haze requirements are summarized in section III of this preamble. The requirement to submit a regional haze SIP applies to all 50 states, the District of Columbia, and

[4] Areas designated as mandatory Class I areas consist of national parks exceeding 6,000 acres, wilderness areas and national memorial parks exceeding 5,000 acres, and all international parks that were in existence on August 7, 1977. *See* 42 U.S.C. 7472(a). In accordance with section 169A of the CAA, EPA, in consultation with the Department of Interior, promulgated a list of 156 areas where visibility is identified as an important value. *See* 44 FR 69122 (November 30, 1979). The extent of a mandatory Class I area includes subsequent changes in boundaries, such as park expansions. *See* 42 U.S.C. 7472(a). Although states and tribes may designate as Class I additional areas which they consider to have visibility as an important value, the requirements of the visibility program set forth in section 169A of the CAA apply only to "mandatory Class I federal areas." Each mandatory Class I area is the responsibility of a "Federal Land Manager." *See* 42 U.S.C. 7602(i). When the term "Class I area" is used in this action, it means a "mandatory Class I federal area."

the Virgin Islands.[5] 40 CFR 51.308(b) requires states to submit the first implementation plan addressing regional haze visibility impairment no later than December 17, 2007.

C. Roles of Agencies in Addressing Regional Haze

Successful implementation of the regional haze program will require long-term regional coordination among states, tribal governments and various federal agencies. As noted above, pollution affecting the air quality in Class I areas can be transported over long distances, even hundreds of kilometers. Therefore, to effectively address the problem of visibility impairment in Class I areas, states need to develop strategies in coordination with one another, taking into account the effect of emissions from one jurisdiction on the air quality in another.

Because the pollutants that lead to regional haze can originate from sources located across broad geographic areas, EPA has encouraged the states and tribes across the United States to address visibility impairment from a regional perspective. Five regional planning organizations (RPOs) were developed to address regional haze and related issues. The RPOs first evaluated technical information to better understand how their states and tribes impact Class I areas across the country, and then pursued the development of regional strategies to reduce emissions of particulate matter (PM) and other pollutants leading to regional haze.

The Visibility Improvement State and Tribal Association of the Southeast (VISTAS) RPO is a collaborative effort of state governments, tribal governments, and various Federal agencies established to initiate and coordinate activities associated with the management of regional haze, visibility and other air quality issues in the southeastern United States. Member

[5] Albuquerque/Bernalillo County in New Mexico must also submit a regional haze SIP to completely satisfy the requirements of section 110(a)(2)(D) of the CAA for the entire State of New Mexico under the New Mexico Air Quality Control Act (section 74-2-4).

state and tribal governments include: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia, and the Eastern Band of the Cherokee Indians.

III. What Are the Requirements for the Regional Haze SIPs?

A. The CAA and the RHR

Regional haze SIPs must assure reasonable progress towards the national goal of achieving natural visibility conditions in Class I areas. Section 169A of the CAA and EPA's implementing regulations require states to establish long-term strategies for making reasonable progress toward meeting this goal. Implementation plans must also give specific attention to certain stationary sources that were in existence on August 7, 1977, but were not in operation before August 7, 1962, and require these sources, where appropriate, to install BART controls for the purpose of eliminating or reducing visibility impairment. The specific regional haze SIP requirements are discussed in further detail below.

B. Determination of Baseline, Natural, and Current Visibility Conditions

The RHR establishes the deciview as the principal metric or unit for expressing visibility. This visibility metric expresses uniform changes in haziness in terms of common increments across the entire range of visibility conditions, from pristine to extremely hazy conditions. Visibility expressed in deciviews is determined by using air quality measurements to estimate light extinction and then transforming the value of light extinction using a logarithm function. The deciview is a more useful measure for tracking progress in improving visibility than light

extinction itself because each deciview change is an equal incremental change in visibility perceived by the human eye. Most people can detect a change in visibility at one deciview.[6]

The deciview is used in expressing RPGs (which are interim visibility goals towards meeting the national visibility goal), defining baseline, current, and natural conditions, and tracking changes in visibility. The regional haze SIPs must contain measures that ensure "reasonable progress" toward the national goal of preventing and remedying visibility impairment in Class I areas caused by anthropogenic air pollution by reducing anthropogenic emissions that cause regional haze. The national goal is a return to natural conditions, i.e., anthropogenic sources of air pollution would no longer impair visibility in Class I areas.

To track changes in visibility over time at each of the 156 Class I areas covered by the visibility program (40 CFR 81.401-437), and as part of the process for determining reasonable progress, states must calculate the degree of existing visibility impairment at each Class I area at the time of each regional haze SIP submittal and periodically review progress every five years, i.e., midway through each 10-year implementation period. To do this, the RHR requires states to determine the degree of impairment (in deciviews) for the average of the 20 percent least impaired ("best") and 20 percent most impaired ("worst") visibility days over a specified time period at each of their Class I areas. In addition, states must also develop an estimate of natural visibility conditions for the purpose of comparing progress toward the national goal. Natural visibility is determined by estimating the natural concentrations of pollutants that cause visibility impairment and then calculating total light extinction based on those estimates. EPA has provided guidance to states regarding how to calculate baseline, natural, and current visibility

[6] The preamble to the RHR provides additional details about the deciview. *See* 64 FR 35714, 35725 (July 1, 1999).

conditions in documents titled, EPA's *Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule*, September 2003, (EPA-454/B-03-005 located at http://www.epa.gov/ttncaaa1/t1/memoranda/rh_envcurhr_gd.pdf), (hereinafter referred to as "EPA's 2003 Natural Visibility Guidance"), and *Guidance for Tracking Progress Under the Regional Haze Rule*, September 2003, (EPA-454/B-03-004 located at http://www.epa.gov/ttncaaa1/t1/memoranda/rh_tpurhr_gd.pdf), (hereinafter referred to as "EPA's 2003 Tracking Progress Guidance").

For the first regional haze SIPs that were due by December 17, 2007, "baseline visibility conditions" were the starting points for assessing "current" visibility impairment. Baseline visibility conditions represent the degree of visibility impairment for the 20 percent least impaired days and 20 percent most impaired days for each calendar year from 2000 to 2004. Using monitoring data for 2000 through 2004, states are required to calculate the average degree of visibility impairment for each Class I area, based on the average of annual values over the five-year period. The comparison of initial baseline visibility conditions to natural visibility conditions indicates the amount of improvement necessary to attain natural visibility, while the future comparison of baseline conditions to the then current conditions will indicate the amount of progress made. In general, the 2000 - 2004 baseline period is considered the time from which improvement in visibility is measured.

C. Determination of Reasonable Progress Goals (RPGs)

The vehicle for ensuring continuing progress towards achieving the natural visibility goal is the submission of a series of regional haze SIPs from the states that establish two RPGs (i.e., two distinct goals, one for the "best" and one for the "worst" days) for every Class I area for each

(approximately) 10-year implementation period. The RHR does not mandate specific milestones or rates of progress, but instead calls for states to establish goals that provide for "reasonable progress" toward achieving natural (i.e., "background") visibility conditions. In setting RPGs, states must provide for an improvement in visibility for the most impaired days over the (approximately) 10-year period of the SIP, and ensure no degradation in visibility for the least impaired days over the same period.

States have significant discretion in establishing RPGs, but are required to consider the following factors established in section 169A of the CAA and in EPA's RHR at 40 CFR 51.308(d)(1)(i)(A): (1) the costs of compliance; (2) the time necessary for compliance; (3) the energy and non-air quality environmental impacts of compliance; and (4) the remaining useful life of any potentially affected sources. States must demonstrate in their SIPs how these factors are considered when selecting the RPGs for the best and worst days for each applicable Class I area. States have considerable flexibility in how they take these factors into consideration, as noted in EPA's *Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program* ("EPA's Reasonable Progress Guidance"), July 1, 2007, memorandum from William L. Wehrum, Acting Assistant Administrator for Air and Radiation, to EPA Regional Administrators, EPA Regions 1-10 (pp. 4-2, 5-1). In setting the RPGs, states must also consider the rate of progress needed to reach natural visibility conditions by 2064 (referred to as the "uniform rate of progress" or the "glidepath") and the emission reduction measures needed to achieve that rate of progress over the 10-year period of the SIP. Uniform progress towards achievement of natural conditions by the year 2064 represents a rate of progress which states are to use for analytical comparison to the amount of progress they expect to achieve. In setting RPGs, each state with one or more Class I areas ("Class I state") must also consult with

potentially "contributing states," i.e., other nearby states with emissions sources that may be affecting visibility impairment at the Class I state's areas. *See* 40 CFR 51.308(d)(1)(iv).

D. Best Available Retrofit Technology (BART)

Section 169A of the CAA directs states to evaluate the use of retrofit controls at certain larger, often uncontrolled, older stationary sources in order to address visibility impacts from these sources. Specifically, section 169A(b)(2)(A) of the CAA requires states to revise their SIPs to contain such measures as may be necessary to make reasonable progress towards the natural visibility goal, including a requirement that certain categories of existing major stationary sources[7] built between 1962 and 1977 procure, install, and operate the "Best Available Retrofit Technology" as determined by the state. Under the RHR, states are directed to conduct BART determinations for such "BART-eligible" sources that may be anticipated to cause or contribute to any visibility impairment in a Class I area. Rather than requiring source-specific BART controls, states also have the flexibility to adopt an emissions trading program or other alternative program as long as the alternative provides greater reasonable progress towards improving visibility than BART.

On July 6, 2005, EPA published the *Guidelines for BART Determinations Under the Regional Haze Rule* at Appendix Y to 40 CFR Part 51 (hereinafter referred to as the "BART Guidelines") to assist states in determining which of their sources should be subject to the BART requirements and in determining appropriate emission limits for each applicable source. In making a BART determination for a fossil fuel-fired electric generating plant with a total

[7] The set of "major stationary sources" potentially subject to BART is listed in CAA section 169A(g)(7).

generating capacity in excess of 750 megawatts, a state must use the approach set forth in the BART Guidelines. A state is encouraged, but not required, to follow the BART Guidelines in making BART determinations for other types of sources.

States must address all visibility-impairing pollutants emitted by a source in the BART determination process. The most significant visibility impairing pollutants are SO_2, NO_X, and PM. EPA has stated that states should use their best judgment in determining whether VOC or NH_3 compounds impair visibility in Class I areas.

Under the BART Guidelines, states may select an exemption threshold value for their BART modeling, below which a BART-eligible source would not be expected to cause or contribute to visibility impairment in any Class I area. The state must document this exemption threshold value in the SIP and must state the basis for its selection of that value. Any source with emissions that model above the threshold value would be subject to a BART determination review. The BART Guidelines acknowledge varying circumstances affecting different Class I areas. States should consider the number of emissions sources affecting the Class I areas at issue and the magnitude of the individual sources' impacts. Any exemption threshold set by the state should not be higher than 0.5 deciview.

In their SIPs, states must identify potential BART sources, described as "BART-eligible sources" in the RHR, and document their BART control determination analyses. In making BART determinations, section 169A(g)(2) of the CAA requires that states consider the following factors: (1) the costs of compliance, (2) the energy and non-air quality environmental impacts of compliance, (3) any existing pollution control technology in use at the source, (4) the remaining useful life of the source, and (5) the degree of improvement in visibility which may reasonably

be anticipated to result from the use of such technology. States are free to determine the weight and significance to be assigned to each factor.

A regional haze SIP must include source-specific BART emissions limits and compliance schedules for each source subject to BART. Once a state has made its BART determination, the BART controls must be installed and in operation as expeditiously as practicable, but no later than five years after the date of EPA approval of the regional haze SIP. *See* CAA section 169(g)(4); *see* 40 CFR 51.308(e)(1)(iv). In addition to what is required by the RHR, general SIP requirements mandate that the SIP must also include all regulatory requirements related to monitoring, recordkeeping, and reporting for the BART controls on the source.

As noted above, the RHR allows states to implement an alternative program in lieu of BART so long as the alternative program can be demonstrated to achieve greater reasonable progress toward the national visibility goal than would BART. Under regulations issued in 2005 revising the regional haze program, EPA made just such a demonstration for CAIR. *See* 70 FR 39104 (July 6, 2005). EPA's regulations provide that states participating in the CAIR cap-and trade program under 40 CFR part 96 pursuant to an EPA-approved CAIR SIP or which remain subject to the CAIR Federal Implementation Plan in 40 CFR part 97 need not require affected BART-eligible electrical generating units (EGUs) to install, operate, and maintain BART for emissions of SO_2 and NOx. *See* 40 CFR 51.308(e)(4). Because CAIR did not address direct emissions of PM, states were still required to conduct a BART analysis for PM emissions from EGUs subject to BART for that pollutant. Challenges to CAIR resulted in the remand of the rule to EPA. *See North Carolina* v. *EPA*, 550 F.3d 1176 (D.C. Cir. 2008).

EPA issued a new rule in 2011 to address the interstate transport of NOx and SO_2 in the eastern United States. See 76 FR 48208 (August 8, 2011) ("the Transport Rule," also known as

the Cross-State Air Pollution Rule). On December 30, 2011, EPA proposed to find that the trading programs in the Transport Rule would achieve greater reasonable progress towards the national goal than would BART in the states in which the Transport Rule applies. *See* 76 FR 82219. Based on this proposed finding, EPA also proposed to revise the RHR to allow states to substitute participation in the trading programs under the Transport Rule for source-specific BART. EPA has not yet taken final action on that rule. Also on December 30, 2011, the D.C. Circuit issued an order addressing the status of the Transport Rule and CAIR in response to motions filed by numerous parties seeking a stay of the Transport Rule pending judicial review. In that order, the D.C. Circuit stayed the Transport Rule pending the court's resolutions of the petitions for review of that rule in *EME Homer Generation, L.P.* v. *EPA* (No. 11-1302 and consolidated cases). The court also indicated that EPA is expected to continue to administer CAIR in the interim until the court rules on the petitions for review of the Transport Rule.

E. Long-Term Strategy (LTS)

Consistent with the requirement in section 169A(b) of the CAA that states include in their regional haze SIP a 10 to 15 year strategy for making reasonable progress, section 51.308(d)(3) of the RHR requires that states include a LTS in their regional haze SIPs. The LTS is the compilation of all control measures a state will use during the implementation period of the specific SIP submittal to meet applicable RPGs. The LTS must include "enforceable emissions limitations, compliance schedules, and other measures as necessary to achieve the reasonable progress goals" for all Class I areas within, or affected by emissions from, the state. *See* 40 CFR 51.308(d)(3).

When a state's emissions are reasonably anticipated to cause or contribute to visibility impairment in a Class I area located in another state, the RHR requires the impacted state to coordinate with the contributing states in order to develop coordinated emissions management strategies. *See* 40 CFR 51.308(d)(3)(i). In such cases, the contributing state must demonstrate that it has included, in its SIP, all measures necessary to obtain its share of the emission reductions needed to meet the RPGs for the Class I area. The RPOs have provided forums for significant interstate consultation, but additional consultations between states may be required to sufficiently address interstate visibility issues. This is especially true where two states belong to different RPOs.

States should consider all types of anthropogenic sources of visibility impairment in developing their LTS, including stationary, minor, mobile, and area sources. At a minimum, states must describe how each of the following seven factors listed below are taken into account in developing their LTS: (1) emission reductions due to ongoing air pollution control programs, including measures to address RAVI; (2) measures to mitigate the impacts of construction activities; (3) emissions limitations and schedules for compliance to achieve the RPG; (4) source retirement and replacement schedules; (5) smoke management techniques for agricultural and forestry management purposes including plans as currently exist within the state for these purposes; (6) enforceability of emissions limitations and control measures; and (7) the anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the period addressed by the LTS. *See* 40 CFR 51.308(d)(3)(v).

F. Coordinating Regional Haze and RAVI LTS

As part of the RHR, EPA revised 40 CFR 51.306(c) regarding the LTS for RAVI to require that the RAVI plan must provide for a periodic review and SIP revision not less frequently than every three years until the date of submission of the state's first plan addressing regional haze visibility impairment, which was due December 17, 2007, in accordance with 40 CFR 51.308(b) and (c). On or before this date, the state must revise its plan to provide for review and revision of a coordinated LTS for addressing RAVI and regional haze, and the state must submit the first such coordinated LTS with its first regional haze SIP. Future coordinated LTS's, and periodic progress reports evaluating progress towards RPGs, must be submitted consistent with the schedule for SIP submission and periodic progress reports set forth in 40 CFR 51.308(f) and 51.308(g), respectively. The periodic review of a state's LTS must report on both regional haze and RAVI impairment and must be submitted to EPA as a SIP revision.

G. Monitoring Strategy and Other Implementation Plan Requirements

Section 51.308(d)(4) of the RHR includes the requirement for a monitoring strategy for measuring, characterizing, and reporting of regional haze visibility impairment that is representative of all mandatory Class I areas within the state. The strategy must be coordinated with the monitoring strategy required in section 51.305 for RAVI. Compliance with this requirement may be met through "participation" in the IMPROVE network, i.e., review and use of monitoring data from the network. The monitoring strategy is due with the first regional haze SIP, and it must be reviewed every five years. The monitoring strategy must also provide for additional monitoring sites if the IMPROVE network is not sufficient to determine whether RPGs will be met.

The SIP must also provide for the following:

- Procedures for using monitoring data and other information in a state with mandatory Class I areas to determine the contribution of emissions from within the state to regional haze visibility impairment at Class I areas both within and outside the state;
- Procedures for using monitoring data and other information in a state with no mandatory Class I areas to determine the contribution of emissions from within the state to regional haze visibility impairment at Class I areas in other states;
- Reporting of all visibility monitoring data to the Administrator at least annually for each Class I area in the state, and where possible, in electronic format;
- Developing a statewide inventory of emissions of pollutants that are reasonably anticipated to cause or contribute to visibility impairment in any Class I area. The inventory must include emissions for a baseline year, emissions for the most recent year for which data are available, and estimates of future projected emissions. A state must also make a commitment to update the inventory periodically; and
- Other elements, including reporting, recordkeeping, and other measures necessary to assess and report on visibility.

The RHR requires control strategies to cover an initial implementation period extending to the year 2018, with a comprehensive reassessment and revision of those strategies, as appropriate, every 10 years thereafter. Periodic SIP revisions must meet the core requirements of section 51.308(d) with the exception of BART. The requirement to evaluate sources for BART applies only to the first regional haze SIP. Facilities subject to BART must continue to comply with the BART provisions of section 51.308(e), as noted above. Periodic SIP revisions will assure that the statutory requirement of reasonable progress will continue to be met.

H. Consultation with States and Federal Land Managers (FLMs)

The RHR requires that states consult with FLMs before adopting and submitting their SIPs. *See* 40 CFR 51.308(i). States must provide FLMs an opportunity for consultation, in person and at least 60 days prior to holding any public hearing on the SIP. This consultation must include the opportunity for the FLMs to discuss their assessment of impairment of visibility in any Class I area and to offer recommendations on the development of the RPGs and on the development and implementation of strategies to address visibility impairment. Further, a state must include in its SIP a description of how it addressed any comments provided by the FLMs. Finally, a SIP must provide procedures for continuing consultation between the state and FLMs regarding the state's visibility protection program, including development and review of SIP revisions, five-year progress reports, and the implementation of other programs having the potential to contribute to impairment of visibility in Class I areas.

IV. What is EPA's Analysis of Alabama's Regional Haze Submittal?

On July 15, 2008, ADEM submitted revisions to the Alabama SIP to address regional haze in the State's Class I area as required by EPA's RHR.

A. Affected Class I Area

Alabama has one Class I area within its borders: Sipsey Wilderness Area. Alabama is responsible for developing its a regional haze SIP that addresses the Class I area. The State determined RPGs, including consulting with other states that impact the Class I area, as discussed in IV.F.1. In addition, Alabama is responsible for describing its long-term emission

strategies, its role in the consultation processes, and how its particular state SIP meets the other requirements in EPA's regional haze regulations.

The Alabama regional haze SIP establishes RPGs for visibility improvement at this Class I area and a LTS to achieve those RPGs within the first regional haze implementation period ending in 2018. In developing the LTS, Alabama considered both emissions sources inside and outside of Alabama that may cause or contribute to visibility impairment in Alabama's Class I area. The State also identified and considered emissions sources within Alabama that may cause or contribute to visibility impairment in Class I areas in neighboring states as required by 40 CFR 51.308(d)(3). The VISTAS RPO worked with the State in developing the technical analyses used to make these determinations, including state-by-state contributions to visibility impairment in specific Class I areas, which included the one Class I area in Alabama and those areas affected by emissions from Alabama.

B. Determination of Baseline, Natural, and Current Visibility Conditions

As required by the RHR and in accordance with EPA's 2003 Natural Visibility Guidance, Alabama calculated baseline/current and natural visibility conditions for its Class I area, as summarized below (and as further described in sections III.B.1 and III.B.2 of EPA's TSD to this Federal Register action).

1. Estimating Natural Visibility Conditions

Natural background visibility, as defined in EPA's 2003 Natural Visibility Guidance, is estimated by calculating the expected light extinction using default estimates of natural concentrations of fine particle components adjusted by site-specific estimates of humidity. This

calculation uses the IMPROVE equation, which is a formula for estimating light extinction from the estimated natural concentrations of fine particle components (or from components measured by the IMPROVE monitors). As documented in EPA's 2003 Natural Visibility Guidance, EPA allows states to use "refined" or alternative approaches to the 2003 EPA guidance to estimate the values that characterize the natural visibility conditions of the Class I areas. One alternative approach is to develop and justify the use of alternative estimates of natural concentrations of fine particle components. Another alternative is to use the "new IMPROVE equation" that was adopted for use by the IMPROVE Steering Committee in December 2005.[8] The purpose of this refinement to the "old IMPROVE equation" is to provide more accurate estimates of the various factors that affect the calculation of light extinction. Alabama opted to use the default estimates for the natural concentrations, combined with the "new IMPROVE equation," for its area. Using this approach, natural visibility conditions using the new IMPROVE equation were calculated separately for each Class I area by VISTAS.

The new IMPROVE equation takes into account the most recent review of the science[9] and it accounts for the effect of particle size distribution on light extinction efficiency of sulfate,

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[8] The IMPROVE program is a cooperative measurement effort governed by a steering committee composed of representatives from federal agencies (including representatives from EPA and the FLMs) and RPOs. The IMPROVE monitoring program was established in 1985 to aid the creation of federal and State implementation plans for the protection of visibility in Class I areas. One of the objectives of IMPROVE is to identify chemical species and emissions sources responsible for existing anthropogenic visibility impairment. The IMPROVE program has also been a key participant in visibility-related research, including the advancement of monitoring instrumentation, analysis techniques, visibility modeling, policy formulation and source attribution field studies.

[9] The science behind the revised IMPROVE equation is summarized in numerous published papers. See, e.g., Hand, J.L., and Malm, W.C., 2006, *Review of the IMPROVE Equation for Estimating Ambient Light Extinction Coefficients - Final Report.* March 2006. Prepared for Interagency Monitoring of Protected Visual Environments (IMPROVE), Colorado State University, Cooperative Institute for Research in the Atmosphere, Fort Collins, Colorado. http://vista.cira.colostate.edu/improve/publications/GrayLit/016_IMPROVEeqReview/IMPROVEeqReview.htm; and Pitchford, Marc., 2006, *Natural Haze Levels II: Application of the New IMPROVE Algorithm to Natural Species Concentrations Estimates.* Final Report of the Natural Haze Levels II Committee to the RPO Monitoring/Data Analysis Workgroup. September 2006. http://vista.cira.colostate.edu/improve/Publications/GrayLit/029_NaturalCondII/naturalhazelevelsIIreport.ppt.

nitrate, and organic carbon. It also adjusts the mass multiplier for organic carbon (particulate organic matter) by increasing it from 1.4 to 1.8. New terms are added to the equation to account for light extinction by sea salt and light absorption by gaseous nitrogen dioxide. Site-specific values are used for Rayleigh scattering (scattering of light due to atmospheric gases) to account for the site-specific effects of elevation and temperature. Separate relative humidity enhancement factors are used for small and large size distributions of ammonium sulfate and ammonium nitrate and for sea salt. The terms for the remaining contributors, elemental carbon (light-absorbing carbon), fine soil, and coarse mass terms, do not change between the original and new IMPROVE equations.

2. Estimating Baseline Conditions

ADEM estimated baseline visibility conditions at the Sipsey Wilderness Area using available monitoring data from a single IMPROVE monitoring site. As explained in section III.B, baseline visibility conditions are the same as current conditions for the first regional haze SIP. A five-year average of the 2000 to 2004 monitoring data was calculated for each of the 20 percent worst and 20 percent best visibility days at the Alabama Class I area. IMPROVE data records for the Sipsey Wilderness Area for the period 2000 to 2004 meet the EPA requirements for data completeness. See page 2-8 of EPA's 2003 Tracking Progress Guidance. Table 3.3-1 from Appendix G of the Alabama regional haze SIP, also provided in section III.B.3 of EPA's TSD to this action, lists the 20 percent best and worst days for the baseline period of 2000-2004 for the Sipsey Wilderness Area. These data are also provided at the following website: http://www.metro4-sesarm.org/vistas/SesarmBext_20BW.htm.

3. Summary of Baseline and Natural Conditions

For the Alabama Class I area, baseline visibility on the 20 percent worst days is approximately 29 deciviews. Natural visibility in this area is predicted to be approximately 11 deciviews on the 20 percent worst days. The natural and baseline conditions for Alabama's Class I area for both the 20 percent worst and best days are presented in Table 1 below.

Table 1: Natural Background and Baseline Conditions for Alabama's Class I Area		
Class I Area	**Average for 20% Worst Days (dv[10])**	**Average for 20% Best Days (dv)**
Natural Background Conditions		
Sipsey Wilderness Area	10.90	5.03
Baseline Visibility Conditions (2000-2004)		
Sipsey Wilderness Area	29.03	15.57

4. Uniform Rate of Progress

In setting the RPGs, Alabama considered the uniform rate of progress needed to reach natural visibility conditions by 2064 ("glidepath") and the emission reduction measures needed to achieve that rate of progress over the period of the SIP to meet the requirements of 40 CFR 51.308(d)(1)(i)(B). As explained in EPA's Reasonable Progress Guidance document, the uniform rate of progress is not a presumptive target, and RPGs may be greater, lesser, or equivalent to the glidepath.

The State's implementation plan presents two sets of graphs, one for the 20 percent best days and one for the 20 percent worst days, for its Class I area. Alabama constructed the graph for the worst days (i.e., the glidepath) in accordance with EPA's 2003 Tracking Progress Guidance by plotting a straight graphical line from the baseline level of visibility impairment for

[10] The term, "dv," is the abbreviation for "deciview."

2000-2004 to the level of visibility conditions representing no anthropogenic impairment in 2064 for its area. For the best days, the graph includes a horizontal, straight line spanning from baseline conditions in 2004 out to 2018 to depict no degradation in visibility over the implementation period of the SIP. Alabama's SIP shows that the State's RPGs for its area provide for improvement in visibility for the 20 percent worst days over the period of the implementation plan and ensure no degradation in visibility for the 20 percent best days over the same period, in accordance with 40 CFR 51.308(d)(1).

For the Sipsey Wilderness Area, the overall visibility improvement necessary to reach natural conditions is the difference between baseline visibility of 29.03 deciviews for the 20 percent worst days and natural conditions of 10.90 deciviews, i.e., 18.13 deciviews. Over the 60-year period from 2004 to 2064, this would require an approximate average improvement of 0.302 deciview per year (i.e., 18.13 deciviews/60 years) to reach natural conditions. Hence, for the 14-year period from 2004 to 2018, in order to achieve visibility improvements at least equivalent to the uniform rate of progress for the 20 percent worst days at the Sipsey Wilderness Area, Alabama would need to project at least 4.23 deciviews over the first implementation period (i.e., 0.302 deciviews x 14 years = 4.23 deciviews) of visibility improvement from the 29.03 deciviews baseline in 2004, resulting in visibility levels at or below 24.80 deciviews in 2018. As discussed below in section IV.C.7, Alabama projects a 5.50 deciview improvement to visibility from the 29.03 deciview baseline to 23.53 deciviews in 2018 for the 20 percent most impaired days, and a 1.35 deciview improvement to 14.22 deciviews from the baseline visibility of 15.57 deciviews for the 20 percent least impaired days.

C. Long-Term Strategy/Strategies

As described in section III.E of this action, the LTS is a compilation of state-specific control measures relied on by the state for achieving its RPGs. Alabama's LTS for the first implementation period addresses the emissions reductions from federal, state, and local controls that take effect in the State from the end of the baseline period starting in 2004 until 2018. The Alabama LTS was developed by the State, in coordination with the VISTAS RPO, through an evaluation of the following components: (1) identification of the emissions units within Alabama and in surrounding states that likely have the largest impacts currently on visibility at the State's Class I area; (2) estimation of emissions reductions for 2018 based on all controls required or expected under federal and state regulations for the 2004-2018 period (including BART); (3) comparison of projected visibility improvement with the uniform rate of progress for the State's Class I area; and (4) application of the four statutory factors in the reasonable progress analysis for the identified emissions units to determine if additional reasonable controls were required.

In a separate notice proposing limited disapproval of the regional haze SIPs of a number of states, EPA noted that these states relied on the trading programs of CAIR to satisfy the BART requirement and the requirement for a LTS sufficient to achieve the state-adopted reasonable progress goals. *See* 76 FR 82219 (December 30, 2011). In that action, EPA proposed a limited disapproval of Alabama's regional haze SIP submittal insofar as the SIP relied on CAIR. For that reason, EPA is not taking action on that aspect of Alabama's regional haze SIP in this action. Comments on the December 30, 2011, proposed determination are accepted at Docket ID No. EPA-HQ-OAR-2011-0729. The comment period for EPA's December 30, 2011, proposed rulemaking is scheduled to end on February 28, 2012.

1. Emissions Inventory for 2018 with Federal and State Control Requirements

The emissions inventory used in the regional haze technical analyses was developed by VISTAS with assistance from Alabama. The 2018 emissions inventory was developed by projecting 2002 emissions and applying reductions expected from Federal and state regulations affecting the emissions of VOC and the visibility-impairing pollutants NO_X, PM, and SO_2. The BART Guidelines direct states to exercise judgment in deciding whether VOC and NH_3 impair visibility in their Class I area(s). As discussed further in section IV.C.3, VISTAS performed modeling sensitivity analyses, which demonstrated that anthropogenic emissions of VOC and NH_3 do not significantly impair visibility in the VISTAS region. Thus, while emissions inventories were also developed for NH_3 and VOC and applicable Federal VOC reductions were incorporated into Alabama's regional haze analyses, Alabama did not further evaluate NH_3 and VOC emissions sources for potential controls under BART or reasonable progress.

VISTAS developed emissions for five inventory source classifications: stationary point and area sources, off-road and on-road mobile sources, and biogenic sources. Stationary point sources are those sources that emit greater than a specified tonnage per year, depending on the pollutant, with data provided at the facility level. Stationary area sources are those sources whose individual emissions are relatively small, but due to the large number of these sources, the collective emissions from the source category could be significant. VISTAS estimated emissions on a countywide level for the inventory categories of: a) stationary area sources; b) off-road (or non-road) mobile sources (i.e., equipment that can move but does not use the roadways); and c) biogenic sources (which are natural sources of emissions, such as trees). On-road mobile source emissions are estimated by vehicle type and road type, and are summed to the countywide level.

There are many federal and state control programs being implemented that VISTAS and Alabama anticipate will reduce emissions between the end of the baseline period and 2018. Emissions reductions from these control programs are projected to achieve substantial visibility improvement by 2018 in the Sipsey Wilderness Area. The control programs relied upon by Alabama include CAIR; EPA's NOx SIP Call; North Carolina's Clean Smokestacks Act; consent decrees for Tampa Electric, Virginia Electric and Power Company, Gulf Power-Plant Crist, Santee Cooper, East Kentucky Power Cooperative, and Alabama Power Company-Plant Miller; a consent decree for Cargill, Inc.; NOx and/or VOC reductions from the control rules in 1-hour ozone SIPs for Atlanta, Birmingham, and Northern Kentucky; federal 2007 heavy duty diesel engine standards for on-road trucks and buses; federal Tier 2 tailpipe controls for on-road vehicles; federal large spark ignition and recreational vehicle controls; and EPA's non-road diesel rules. Controls from various federal Maximum Achievable Control Technology (MACT) rules were also utilized in the development of the 2018 emission inventory projections. These MACT rules include the industrial boiler/process heater MACT (referred to as "Industrial Boiler MACT"), the combustion turbine and reciprocating internal combustion engines MACTs, and the VOC 2-, 4-, 7-, and 10-year MACT standards.

Effective July 30, 2007, the D.C. Circuit mandated the vacatur and remand of the Industrial Boiler MACT Rule.[11] This MACT was vacated since it was directly affected by the vacatur and remand of the Commercial and Industrial Solid Waste Incinerator Definition Rule. EPA proposed a new Industrial Boiler MACT rule to address the vacatur on June 4, 2010, (75 FR 32006) and issued a final rule on March 21, 2011 (76 FR 15608). The VISTAS modeling

[11] *See NRDC* v. *EPA*, 489 F.3d 1250 (D.C. Cir. 2007).

included emissions reductions from the vacated Industrial Boiler MACT rule, and Alabama did not redo its modeling analysis when the rule was re-issued. Even though the State's modeling is based on the vacated Industrial Boiler MACT limits, Alabama's modeling conclusions are unlikely to be affected because the expected reductions due to the vacated rule were relatively small compared to the State's total SO_2, $PM_{2.5}$, and coarse particulate matter (PM_{10}) emissions in 2018 (i.e., 0.2 to 0.5 percent, depending on the pollutant, of the projected 2018 SO_2, $PM_{2.5}$, and PM_{10} inventory). Thus, EPA does not expect that differences between the vacated and final Industrial Boiler MACT emission limits would affect the adequacy of the existing Alabama regional haze SIP. If there is a need to address discrepancies between projected emissions reductions from the vacated Industrial Boiler MACT and the Industrial Boiler MACT issued on March 21, 2011 (76 FR 15608), EPA expects Alabama to do so in the State's five-year progress report.

Tables 2 and 3, below, summarize the 2002 baseline and 2018 estimated emissions inventories for Alabama.

Table 2: 2002 Emissions Inventory Summary for Alabama (tons per year)

	VOC	**NO_x**	**$PM_{2.5}$**	**PM_{10}**	**NH_3**	**SO_2**
Point	49,332	244,348	23,291	32,886	2,200	544,309
Area	207,952	34,172	98,671	440,663	60,007	54,462
On-Road Mobile	127,295	158,212	2,799	3,903	5,588	6,900
Off-Road Mobile	60,487	65,366	4,526	4,949	33	7,584
Total	**445,065**	**502,098**	**129,287**	**482,401**	**67,828**	**613,255**

Table 3: 2018 Emissions Inventory Summary for Alabama (tons per year)

	VOC	**NO_x**	**$PM_{2.5}$**	**PM_{10}**	**NH_3**	**SO_2**
Point	57,243	142,676	27,366	37,746	3,536	249,075
Area	181,116	36,945	108,892	497,924	73,969	52,950

On-Road Mobile	49,175	47,298	1,192	2,410	7,298	720
Off-road Mobile	40,407	43,799	2,874	3,300	42	2,818
Total	**327,941**	**270,718**	**140,324**	**541,380**	**84,845**	**305,563**

2. Modeling to Support the LTS and Determine Visibility Improvement for Uniform Rate of Progress

VISTAS performed modeling for the regional haze LTS for the 10 southeastern states, including Alabama. The modeling analysis is a complex technical evaluation that began with selection of the modeling system. VISTAS used the following modeling system:

- Meteorological Model: The Pennsylvania State University/National Center for Atmospheric Research Mesoscale Meteorological Model is a nonhydrostatic, prognostic, meteorological model routinely used for urban- and regional- scale photochemical, $PM_{2.5}$, and regional haze regulatory modeling studies.
- Emissions Model: The Sparse Matrix Operator Kernel Emissions modeling system is an emissions modeling system that generates hourly gridded speciated emission inputs of mobile, non-road mobile, area, point, fire, and biogenic emissions sources for photochemical grid models. Air Quality Model: The EPA's Models-3/Community Multiscale Air Quality (CMAQ) modeling system is a photochemical grid model capable of addressing ozone, PM, visibility, and acid deposition at a regional scale. The photochemical model selected for this study was CMAQ version 4.5. It was modified through VISTAS with a module for Secondary Organics Aerosols in an open and transparent manner that was also subjected to outside peer review.

CMAQ modeling of regional haze in the VISTAS region for 2002 and 2018 was carried out on a grid of 12x12 kilometer cells that covers the 10 VISTAS states (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West

Virginia) and states adjacent to them. This grid is nested within a larger national CMAQ modeling grid of 36x36 kilometer cells that covers the continental United States, portions of Canada and Mexico, and portions of the Atlantic and Pacific Oceans along the east and west coasts. Selection of a representative period of meteorology is crucial for evaluating baseline air quality conditions and projecting future changes in air quality due to changes in emissions of visibility-impairing pollutants. VISTAS conducted an in-depth analysis which resulted in the selection of the entire year of 2002 (January 1-December 31) as the best period of meteorology available for conducting the CMAQ modeling. The VISTAS states modeling was developed consistent with 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*, located at http://www.epa.gov/scram001/guidance/guide/final-03-pm-rh-guidance.pdf, (EPA-454/B-07-002), April 2007, and EPA document, *Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations*, located at http://www.epa.gov/ttnchie1/eidocs/eiguid/index.html, EPA-454/R-05-001, August 2005, updated November 2005 ("EPA's Modeling Guidance").

VISTAS examined the model performance of the regional modeling for the areas of interest before determining whether the CMAQ model results were suitable for use in the regional haze assessment of the LTS and for use in the modeling assessment. The modeling assessment predicts future levels of emissions and visibility impairment used to support the LTS and to compare predicted, modeled visibility levels with those on the uniform rate of progress. In keeping with the objective of the CMAQ modeling platform, the air quality model performance was evaluated using graphical and statistical assessments based on measured ozone, fine particles, and acid deposition from various monitoring networks and databases for the 2002

base year. VISTAS used a diverse set of statistical parameters from the EPA's Modeling Guidance to stress and examine the model and modeling inputs. Once VISTAS determined the model performance to be acceptable, VISTAS used the model to assess the 2018 RPGs using the current and future year air quality modeling predictions, and compared the RPGs to the uniform rate of progress.

In accordance with 40 CFR 51.308(d)(3), Alabama provided EPA with the appropriate supporting documentation for all required analyses used to determine the State's LTS. The technical analyses and modeling used to develop the glidepath and to support the LTS are consistent with EPA's RHR and interim and final EPA Modeling Guidance. EPA proposes to accept the VISTAS technical modeling to support the LTS and determine visibility improvement for the uniform rate of progress because the modeling system was chosen and simulated according to EPA Modeling Guidance. EPA proposes to agree with the VISTAS model performance procedures and results, and that the CMAQ is an appropriate tool for the regional haze assessments for the Alabama LTS and regional haze SIP.

3. Relative Contributions to Visibility Impairment: Pollutants, Source Categories, and Geographic Areas

An important step toward identifying reasonable progress measures is to identify the key pollutants contributing to visibility impairment at each Class I area. To understand the relative benefit of further reducing emissions from different pollutants, source sectors, and geographic areas, VISTAS developed emission sensitivity model runs using CMAQ to evaluate visibility and air quality impacts from various groups of emissions and pollutant scenarios in the Class I areas on the 20 percent worst visibility days.

Regarding which pollutants are most significantly impacting visibility in the VISTAS region, VISTAS' contribution assessment, based on IMPROVE monitoring data, demonstrated that ammonium sulfate is the major contributor to $PM_{2.5}$ mass and visibility impairment at Class I areas in the VISTAS and neighboring states. On the 20 percent worst visibility days in 2000-2004, ammonium sulfate accounted for 75 to 87 percent of the calculated light extinction at the inland Class I areas in VISTAS, and 69 to 74 percent of the calculated light extinction for all but one of the coastal Class I areas in the VISTAS states. In particular, sulfate particles resulting from SO_2 emissions contribute roughly 75 percent to the calculated light extinction on the haziest days for the Sipsey Wilderness Area. In contrast, ammonium nitrate contributed less than five percent of the calculated light extinction at VISTAS Class I areas on the 20 percent worst visibility days. Particulate organic matter (organic carbon) accounted for 20 percent or less of the light extinction on the 20 percent worst visibility days at the VISTAS Class I areas.

VISTAS grouped its 18 Class I areas into two types, either "coastal" or "inland" (sometimes referred to as "mountain") sites, based on common/similar characteristics (e.g., terrain, geography, meteorology), to better represent variations in model sensitivity and performance within the VISTAS region, and to describe the common factors influencing visibility conditions in the two types of Class I areas. Alabama's Class I area is an "inland" area.

Results from VISTAS' emissions sensitivity analyses indicate that sulfate particles resulting from SO_2 emissions are the dominant contributor to visibility impairment on the 20 percent worst days at all Class I areas in VISTAS. Alabama concluded that reducing SO_2 emissions from EGU and non-EGU point sources in the VISTAS states would have the greatest visibility benefits for the Sipsey Wilderness Area. Because ammonium nitrate is a small contributor to $PM_{2.5}$ mass and visibility impairment on the 20 percent worst days at the inland

Class I areas in VISTAS, which include the Sipsey Wilderness Area, the benefits of reducing NO_x and NH_3 emissions at these sites is small.

The VISTAS sensitivity analyses show that VOC emissions from biogenic sources such as vegetation also contribute to visibility impairment. However, control of these biogenic sources of VOC would be extremely difficult, if not impossible. The anthropogenic sources of VOC emissions are minor compared to the biogenic sources. Therefore, controlling anthropogenic sources of VOC emissions would have little if any visibility benefits at the Class I areas in the VISTAS region, including the Sipsey Wilderness Area. The sensitivity analyses also show that reducing primary carbon from point sources, ground level sources, or fires is projected to have small to no visibility benefit at the VISTAS Class I areas.

Alabama considered the factors listed in 40 CFR 51.308(d)(3)(v) and in section III.E of this action to develop its LTS as described below. Alabama, in conjunction with VISTAS, demonstrated in its SIP that elemental carbon (a product of highway and non-road diesel engines, agricultural burning, prescribed fires, and wildfires), fine soils (a product of construction activities and activities that generate fugitive dust), and ammonia are relatively minor contributors to visibility impairment at the Class I area in Alabama. The State considered agricultural and forestry smoke management techniques to address visibility impacts from elemental carbon. ADEM has an approved smoke management program that addresses the issues laid out in EPA's 1998 *Interim Air Quality Policy on Wildland and Prescribed Fires* available at: http://www.epa.gov/ttncaaa1/t1/memoranda/firefnl.pdf. With regard to fine soils, the State considered those activities that generate fugitive dust, including construction activities. Fine soil particles are minor contributors to visibility at the Sipsey Wilderness Area. With regard to construction activities, ADEM has issued regulations (ADEM Admin. Code 335-3-4-.02) to

control fugitive dust from construction activities and to control particulates from fugitive dust emissions sources generated within plant boundaries. The State has chosen not to develop controls for fine soils in this first implementation period because of their relatively minor contribution to visibility impairment. With regard to ammonia emissions from agricultural sources, ADEM notes in its SIP that the State currently has no regulations and there are currently no Federal regulations related to the control of ammonia from animal feeding operations. Once EPA has proposed regulations for these sources, ADEM will commit to evaluating potential controls on applicable sources in Alabama.

EPA preliminary concurs with the State's technical demonstration showing that elemental carbon, fine soils, and ammonia are not significant contributors to visibility in the State's Class I area, and therefore, proposes to find that Alabama has adequately satisfied 40 CFR 51.308(d)(3)(v). EPA's TSD to this Federal Register action and Alabama's SIP provide more details on the State's consideration of these factors for Alabama's LTS.

The emissions sensitivity analyses conducted by VISTAS predict that reductions in SO_2 emissions from EGU and non-EGU industrial point sources will result in the greatest improvements in visibility in the Class I areas in the VISTAS region, more than any other visibility-impairing pollutant. Specific to Alabama, the VISTAS sensitivity analysis projects that visibility benefits in the Sipsey Wilderness Area from SO_2 reductions from Alabama's EGUs would have the greatest visibility benefits in the Sipsey Wilderness Area. Contributions from other VISTAS states, other RPOs, and from the boundary conditions are smaller but not insignificant. Smaller benefits are projected from additional SO_2 emission reductions from non-utility industrial point sources. Thus, controlling sources outside of the VISTAS region is predicted to provide less significant improvements in visibility in the Sipsey Wilderness area.

Taking the VISTAS sensitivity analyses results into consideration, Alabama concluded that reducing SO_2 emissions from EGU and non-EGU point sources in the VISTAS states would have the greatest visibility benefits for the Sipsey Wilderness Area. The State chose to focus solely on evaluating certain SO_2 sources contributing to visibility impairment to the State's Class I area for additional emissions reductions for reasonable progress in this first implementation period (described in sections IV.C.4 and IV.C.5 of this action). EPA proposes to agree with the State's analyses and conclusions used to determine the pollutants and source categories that most contribute to visibility impairment in the Alabama Class I area, and proposes to find that the State's approach to focus on developing a LTS that includes largely additional measures for point sources of SO_2 emissions is appropriate.

SO_2 sources for which it is demonstrated that no additional controls are reasonable in this current implementation period will not be exempted from future assessments for controls in subsequent implementation periods or, when appropriate, from the five-year periodic SIP reviews. In future implementation periods, additional controls on these SO_2 sources evaluated in the first implementation period may be determined to be reasonable, based on a reasonable progress control evaluation, for continued progress toward natural conditions for the 20 percent worst days and to avoid further degradation of the 20 percent best days. Similarly, in subsequent implementation periods, the State may use different criteria for identifying sources for evaluation and may consider other pollutants as visibility conditions change over time.

4. Procedure for Identifying Sources to Evaluate for Reasonable Progress Controls in Alabama and Surrounding Areas

As discussed in section IV.C.3 of this action, through comprehensive evaluations by VISTAS and the Southern Appalachian Mountains Initiative (SAMI),[12] the VISTAS states concluded that sulfate particles resulting from SO_2 emissions account for the greatest portion of the regional haze affecting the Class I areas in VISTAS states, including the Sipsey Wilderness Area in Alabama. Utility and non-utility boilers are the main sources of SO_2 emissions within the southeastern United States. VISTAS developed a methodology for Alabama which enables the State to focus its reasonable progress analysis on those geographic regions and source categories that impact visibility at its Class I area. Recognizing that there was neither sufficient time nor adequate resources available to evaluate all emissions units within a given area of influence (AOI) around each Class I area that Alabama's sources impact, the State established a threshold to determine which emissions units would be evaluated for reasonable progress control. In applying this methodology, ADEM first calculated the fractional contribution to visibility impairment from all emissions units within the SO_2 AOI for the Sipsey Wilderness Area and those surrounding areas in other states potentially impacted by emissions from emissions units in Alabama. The State then identified those emissions units with a contribution of one percent or more to the visibility impairment at that particular Class I area, and evaluated each of these units for control measures for reasonable progress using the following four "reasonable progress factors" as required under 40 CFR 51.308(d)(1)(i)(A): (i) cost of

[12] Prior to VISTAS, the southern states cooperated in a voluntary regional partnership "to identify and recommend reasonable measures to remedy existing and prevent future adverse effects from human-induced air pollution on the air quality related values of the Southern Appalachian Mountains". States cooperated with FLMs, EPA, industry, environmental organizations, and academia to complete a technical assessment of the impacts of acid deposition, ozone, and fine particles on sensitive resources in the Southern Appalachians. The SAMI Final Report was delivered in August 2002.

compliance; (ii) time necessary for compliance; (iii) energy and non-air quality environmental impacts of compliance; and (iv) remaining useful life of the emissions unit.

Alabama's SO_2 AOI methodology captured 55 percent of the total point source SO_2 contribution to visibility impairment in the Class I area in Alabama and 61 to 73 percent of the total contribution at the Class I areas in neighboring states, and required an evaluation of 29 sources. Capturing a significantly greater percentage of the total contribution would involve an evaluation of many more emissions units that have substantially less impact. EPA believes the approach developed by VISTAS and implemented for the Class I area in Alabama is a reasonable methodology to prioritize the most significant contributors to regional haze and to identify sources to assess for reasonable progress control in the State's Class I area. EPA proposes to find that the approach is consistent with the Agency's Reasonable Progress Guidance. The technical approach of VISTAS and Alabama was objective and based on several analyses, which included a large universe of emissions units within and surrounding the State of Alabama and all of the 18 VISTAS Class I areas. It also included an analysis of the VISTAS emissions units affecting nearby Class I areas surrounding the VISTAS states that are located in other RPOs' Class I areas.

5. Application of the Four CAA factors in the Reasonable Progress Analysis

ADEM identified 29 emissions units at 12 facilities in Alabama (see Table 4) with SO_2 emissions that were above the State's minimum threshold for reasonable progress evaluation

because they were modeled to fall within the sulfate AOI of any Class I area and have a one percent or greater contribution to the sulfate visibility impairment to at least one Class I area.[13] Of these 29 units, 19 emissions units were already subject to CAIR, five units were subject to BART, and one facility provided additional information documenting that they had been improperly identified as meeting the State's minimum threshold for reasonable progress evaluation. Using the expected costs of controls for EGUs complying with CAIR as an indicator of what might be reasonable for non-EGU sources, ADEM established a threshold of $2,000 per ton of SO_2 for controls. As explained in section IV.C.5, 19 of these 29 emissions units were already subject to CAIR or were determined to not have a reasonable expectation of having control costs less than $2,000 per ton. Of the four emissions units, three initially listed as having potential impacts on Class I areas in other states were not identified by these states as impacting their Class I areas.

Table 4: Alabama Facilities Subject to Reasonable Progress Analysis

Facility With a Unit Subject to Reasonable Progress Analysis
Cargill, Inc. Unit S-407
Facilities With Unit(s) Subject to CAIR Within AOI of Any Class I Area
Alabama Power Co - Barry Units 002 ,003, 004, 005, 006
Alabama Power Co - Gorgas Units 004, 005, 008
Alabama Power Co - Gaston Unit 006
Alabama Power Co - Miller Units 001, 002, 004, 005
TVA - Colbert Unit 014
TVA - Widows Creek, Units 002, 004, 005, 008, 009
Facilities With Unit(s) Found Not Subject to a Reasonable Progress Analysis
Non-EGUs Subject to BART

[13] See also EPA's TSD, section III.C.2, fractional contribution analysis tables for each Class I area, excerpted from the Alabama SIP, Appendix H.

Solutia, Inc. Units 009, 013, 014, 015
International Paper Co. Unit 006
Not Subject to Evaluation Based on Updated Information
Akzo Nobel Chemicals Inc., Unit 003
Analysis Not Required By Impacted State
Escambia Operating Co (Exxon Mobile Co.) Unit 014
Sanders Lead Co. Units 003, 008

A. Facility with an Emissions Unit Subject to Reasonable Progress Analysis

ADEM analyzed whether SO_2 controls should be required for the Cargill, Inc., stoker boiler (S-407) based on a consideration of the four factors set out in the CAA and EPA's regulations. For the limited purpose of evaluating the cost of compliance for the reasonable progress assessment in this first regional haze SIP for the non-EGUs, ADEM concluded that it was not equitable to require non-EGUs to bear a greater economic burden than EGUs for a given control strategy. Using CAIR as a guide, ADEM used a cost of $2,000 per ton of SO_2 controlled or reduced as a threshold for cost effectiveness.

Cargill's S-407 unit is permitted to burn coal, natural gas, or No. 2 fuel oil. Coal with a sulfur content of 1.2 to 1.3 pounds/million British Thermal units (lb/MMBtu) is the primary fuel source. S-407 emits about 780 tons per year of SO_2. Cargill evaluated three control options: lower sulfur content coal, wet scrubbers, and dry scrubbers. Lower sulfur content coal could not be used because of its lack of availability. Also, even if lower sulfur western coal were available, significant boiler modification would be necessary to burn it and the coal would challenge the boiler's combustion integrity due to its higher dust content. Therefore, lower sulfur coal was determined to be technically infeasible. As for the add-on controls (wet and dry scrubbers), Cargill estimated that it would cost $2,946/ton to control SO_2 with these technologies. Although no modeling was submitted, Cargill also questioned whether S-407

contributed to visibility impairment at the Sipsey Wilderness Area. Cargill submitted a wind rose with five years of data from the nearby Huntsville, Alabama, airport that indicates that winds coming from the northeast blow from the facility toward the Sipsey Wilderness Area only three percent of the time. Based on Cargill's submittal, ADEM determined that none of the evaluated controls are cost effective for this unit.

As noted in EPA's Reasonable Progress Guidance, the states have wide latitude to determine appropriate additional control requirements for ensuring reasonable progress and there are many ways for a state to approach identification of additional reasonable measures. In determining reasonable progress, states must consider, at a minimum, the four statutory factors, but states have flexibility in how to take these factors into consideration.

Alabama applied the methodology developed by VISTAS for identifying appropriate sources to be considered for additional controls under reasonable progress for the implementation period addressed by this SIP, which ends in 2018. Using this methodology, ADEM first identified those emissions and emissions units most likely to have an impact on visibility in the State's Class I area. Units with emissions of SO_2 with a relative contribution of at least a one percent to the visibility impairment at any Class I area were then subject to a reasonable progress control analysis. As noted above, of the emissions units in Alabama, one emissions unit at Cargill was subject to this analysis. ADEM concluded, based on their evaluation of the Cargill analyses, that no further controls were warranted at this time.

After reviewing ADEM's methodology and analyses presented in the SIP materials prepared by ADEM, EPA is proposing to approve Alabama's conclusion that no further controls are necessary at this time for S-407. EPA proposes to agree with the State's approach of identifying the key pollutants contributing to visibility impairment at its Class I area, and

considers ADEM's methodology to identify sources of SO_2 most likely to have an impact on visibility on any Class I area to be an appropriate methodology for narrowing the scope of the State's analysis. In general, EPA also proposes to find Alabama's evaluation of the four statutory factors for reasonable progress to be reasonable. In addition, EPA proposes to find that ADEM fully evaluated all control technologies available at the time of its analysis and applicable to the one emissions unit at the Cargill facility. Although the use of a specific threshold for assessing costs means that Alabama may not have fully considered other available emissions reduction measures above its threshold, EPA believes that the Alabama SIP still ensures reasonable progress. In considering Alabama's approach, EPA is also proposing to place great weight on the fact that there is no indication in the SIP submittal that Alabama, as a result of using a specific cost effectiveness threshold, rejected potential reasonable progress measures that would have had a meaningful impact on visibility in its Class I area. EPA notes that given the emissions reductions resulting from CAIR, Alabama's BART determinations, and the measures in nearby states, the visibility improvements projected for the affected Class I area are in excess of that needed to be on the uniform rate of progress.

B. Emissions Units Subject to CAIR Within AOI of Any Class I Area

Nineteen emissions units identified for a reasonable progress control analysis are EGUs and are subject to CAIR. These EGUs, located at six facilities, are: Alabama Power Co - Barry Units 002 ,003, 004, 005, 006; Alabama Power Co - Gorgas Units 004, 005, 008; Alabama Power Co - Gaston Unit 006; Alabama Power Co - Miller Units 001, 002, 004, 005; TVA - Colbert Unit 014; and TVA - Widows Creek, Units 002, 004, 005, 008, 009.

In reaching this decision, ADEM considered the four reasonable progress factors set forth in EPA's RHR as they apply to the State's entire EGU sector (see section 7.6 of the Alabama SIP and section III.C.2 of EPA's TSD for this action). In particular, the State took into account the factors of cost and time necessary for compliance in view of EPA's analysis supporting CAIR. Based on the analysis, ADEM concluded that additional SO_2 control measures, beyond those needed to meet CAIR requirements, for Alabama's EGUs would not be reasonable during this first implementation period based on a consideration of the reasonable progress statutory factors. This conclusion is bolstered by the fact that visibility improvement at the Sipsey Wilderness Area is projected to exceed the uniform rate of progress in this first implementation period. EPA proposes to find acceptable Alabama's methodology and determination that no additional controls beyond CAIR are reasonable for SO_2 for affected Alabama EGUs for the first implementation period.

C. Facilities With Unit(s) Found Not Subject to a Reasonable Progress Analysis

1. Non-EGUs Subject to BART

At both the International Paper-Courtland Mill and the Solutia, Inc., facilities, all five units identified as being subject to analysis for reasonable progress for the Sipsey Wilderness Area are subject to BART and subsequently were evaluated for BART controls. ADEM believes that BART is equivalent to reasonable progress for these five units, and thus, is not requiring any additional controls for reasonable progress. As discussed in EPA's Reasonable Progress Guidance, since the BART analysis is based, in part, on an assessment of many of the same factors that must be addressed in establishing the RPGs, EPA believes that it is reasonable to conclude that any control requirements imposed in the BART determination also satisfy the

RPG-related requirements for source review in the first implementation period.[14] Thus, EPA proposes to agree with the State's conclusions that BART satisfies reasonable progress for the first implementation period for these five non-EGU emissions units at International Paper-Courtland Mill and the Solutia facility.

2. *Other Units Found Not Subject to a Reasonable Progress Control Analysis*

Four other emissions units at three Alabama facilities were determined to not be subject to a reasonable progress control analysis (see Table 4). ADEM initially identified one emissions unit, a sulfuric acid plant at the Akzo Nobel facility, which met the State's minimum threshold for reasonable progress evaluation. ADEM determined that the 2018 projected SO_2 emissions rate for Akzo Nobel's sulfuric acid plant exceeded the allowable emissions rate for that unit. When the analysis was revised to incorporate the allowable emissions rate, the contribution from the sulfuric acid unit was below the State's one percent contribution threshold for consideration.

ADEM had initially determined that a sulfur recovery unit at Escambia was contributing one percent or more to the sulfate visibility impairment at the Breton Wilderness Area in Louisiana. It is the responsibility of the state in which the Class I area resides to determine which sources need to be assessed to evaluate for reasonable progress for that state's Class I area. Subsequently, the State of Louisiana completed its analyses for the Breton area and did not identify this unit as meeting Louisiana's minimum threshold for evaluation for reasonable progress, and did not request a reasonable progress analysis for this source. Alabama also notes in its SIP that this unit at Escambia took a permit limit of approximately 7,963 tons of actual SO_2

[14] EPA's Reasonable Progress Guidance, pages 4.2-4-3.

emissions (equivalent to approximately a 40 percent reduction in emissions) so that it would not be subject to BART. The State issued a permit enforcing this limit in 2006.

For the St. Marks Wilderness area in Florida, ADEM initially determined that two emissions units at the Sanders Lead Company met Alabama's minimum threshold for reasonable progress evaluation. Subsequently, the State of Florida completed its analyses and did not identify these units as meeting its minimum threshold for evaluation for reasonable progress and did not request a reasonable progress analysis of these units. Based on consultations with the States of Florida and Louisiana, Alabama conducted no further evaluation of the three emissions units at Escambia and Sanders Lead.

6. BART

BART is an element of Alabama's LTS for the first implementation period. The BART evaluation process consists of three components: (a) an identification of all the BART-eligible sources, (b) an assessment of whether the BART-eligible sources are subject to BART, and (c) a determination of the BART controls. These components, as addressed by ADEM and ADEM's findings, are discussed as follows.

A. BART-Eligible Sources

The first phase of a BART evaluation is to identify all the BART-eligible sources within the state's boundaries. ADEM identified the BART-eligible sources in Alabama by utilizing the three eligibility criteria in the BART Guidelines (70 FR 39158) and EPA's regulations (40 CFR 51.301): (1) one or more emissions units at the facility fit within one of the 26 categories listed in the BART Guidelines; (2) the emissions units were not in operation prior to August 7, 1962,

and were in existence on August 7, 1977; and (3) these units have the potential to emit 250 tons or more per year of any visibility-impairing pollutant.

The BART Guidelines also direct states to address SO_2, NO_X and direct PM (including both PM_{10} and PM2.5) emissions as visibility-impairment pollutants, and to exercise judgment in determining whether VOC or ammonia emissions from a source impair visibility in an area. *See* 70 FR 39160. VISTAS modeling demonstrated that VOC from anthropogenic sources and ammonia from point sources are not significant visibility-impairing pollutants in Alabama, as discussed in section IV.C.3. of this action. Based on the VISTAS modeling, analyses of spatial and temporal distributions of ammonia concentrations indicate that the State's point sources are not anticipated to cause or contribute significantly to any impairment of visibility in Class I areas and should be exempt for BART purposes.

B. BART-Subject Sources

The second phase of the BART evaluation is to identify those BART-eligible sources that may reasonably be anticipated to cause or contribute to visibility impairment at any Class I area, i.e., those sources that are subject to BART. The BART Guidelines allow states to consider exempting some BART-eligible sources from further BART review because they may not reasonably be anticipated to cause or contribute to any visibility impairment in a Class I area. Consistent with the BART Guidelines, Alabama required each of its BART-eligible sources to develop and submit dispersion modeling to assess the extent of their contribution to visibility impairment at surrounding Class I areas.

1. Modeling Methodology

The BART Guidelines allow states to use the CALPUFF[15] modeling system (CALPUFF) or another appropriate model to predict the visibility impacts from a single source on a Class I area, and therefore, to determine whether an individual source is anticipated to cause or contribute to impairment of visibility in Class I areas, i.e., "is subject to BART." The Guidelines state that EPA believes that CALPUFF is the best regulatory modeling application currently available for predicting a single source's contribution to visibility impairment (70 FR 39162). Alabama, in coordination with VISTAS, used the CALPUFF modeling system to determine whether individual sources in Alabama were subject to or exempt from BART.

The BART Guidelines also recommend that states develop a modeling protocol for making individual source attributions and suggest that states may want to consult with EPA and their RPO to address any issues prior to modeling. The VISTAS states, including Alabama, developed a "Protocol for the Application of CALPUFF for BART Analyses." Stakeholders, including EPA, FLMs, industrial sources, trade groups, and other interested parties, actively participated in the development and review of the VISTAS protocol.

VISTAS developed a post-processing approach to use the new IMPROVE equation with the CALPUFF model results so that the BART analyses could consider both the old and new IMPROVE equations. Alabama's justification included a method to process the CALPUFF

[15] Note that EPA's reference to CALPUFF encompasses the entire CALPUFF modeling system, which includes the CALMET, CALPUFF, and CALPOST models and other pre and post processors. The different versions of CALPUFF have corresponding versions of CALMET, CALPOST, etc. which may not be compatible with previous versions (e.g., the output from a newer version of CALMET may not be compatible with an older version of CALPUFF). The different versions of the CALPUFF modeling system are available from the model developer on the following website: http://www.src.com/verio/download/download.htm.

output and a rationale on the benefits of using the new IMPROVE equation, in Appendix B of its July 15, 2008, submittal.

2. Contribution Threshold

For states using modeling to determine the applicability of BART to single sources, the BART Guidelines note that the first step is to set a contribution threshold to assess whether the impact of a single source is sufficient to cause or contribute to visibility impairment at a Class I area. The BART Guidelines state that "[a] single source that is responsible for a 1.0 deciview change or more should be considered to 'cause' visibility impairment." The BART Guidelines also state that "the appropriate threshold for determining whether a source 'contributes to visibility impairment' may reasonably differ across states," but, "[a]s a general matter, any threshold that you use for determining whether a source 'contributes' to visibility impairment should not be higher than 0.5 deciviews." The Guidelines affirm that states are free to use a lower threshold if they conclude that the location of a large number of BART-eligible sources in proximity of a Class I area justifies this approach.

Alabama used a contribution threshold of 0.5 deciview for determining which sources are subject to BART and concluded that the threshold of 0.5 deciview was appropriate in this situation. ADEM concluded that, considering the results of the visibility impacts modeling conducted, a 0.5 deciview threshold was appropriate and a lower threshold was not warranted since there is a clear spatial variability of sources across the State. ADEM notes that it does not have a technical justification for lowering the threshold based on consideration of multiple plume interaction. In addition, there are a limited number of BART-eligible sources in close proximity to Class I areas. The State also believes that 0.5 deciview is sufficiently stringent since it is half

of the threshold established by EPA for causing visibility impairment. As stated in the BART Guidelines, where a state concludes that a large number of these BART-eligible sources within proximity of a Class I area justify a lower threshold, it may warrant establishing a lower contribution threshold. *See* 70 FR 39161-39162 (July 6, 2005). EPA proposes to agree with Alabama that the overall impacts of these sources are not sufficient to warrant a lower contribution threshold and that a 0.5 deciview threshold was appropriate in this instance.

3. Identification of Sources Subject to BART

Alabama identified 43 facilities with BART-eligible sources. All of Alabama's 43 BART-eligible sources were required by the State to submit BART exemption modeling demonstrations. Alabama found that three of its BART-eligible sources, Solutia-Decatur, International Paper-Courtland, and Escambia Operating Co-Big Escambia Creek, had modeled visibility impacts of more than Alabama's 0.5 deciview threshold for BART exemption. Escambia took permit limits to no longer be subject to BART. Solution-Decatur and International Paper-Courtland are considered to be subject to BART and submitted State permit applications including their proposed BART determinations.

Of the 41 exempted sources, three were exempted because they emitted only VOC in excess of 250 tons per year, three accepted permit limits which reduced their potential to emit to below 250 tons per year of any affected pollutant, and one, Escambia, took permit limits that reduced its impact to below 0.5 deciview.

The 34 remaining sources are not subject to BART as they modeled visibility impacts less than a 0.5 deciview at the affected Class I areas. This modeling involved emissions of NOx, SO_2, and PM_{10}, as applicable to individual facilities. Eight of the 34 sources are power plants

(i.e., Alabama Electric Coop - Lowman, Alabama Power Co - Barry, Alabama Power Co - EC Gaston, Alabama Power Co - Gorgas, Alabama Power Co - Greene Co, Alabama Power Co - Miller, TVA - Colbert, and TVA - Widows Creek). Only PM_{10} emissions were used in the modeling for EGU sources. The SO_2 and NO_x BART-eligible emissions were not modeled, because Alabama opted to have CAIR satisfy BART for SO_2 and NOx for affected CAIR EGUs, as allowed under the regional haze regulations. The remaining 26 non-EGU sources demonstrated that they are not subject to BART since they modeled less than a 0.5 deciview visibility impact at the affected Class I areas. Table 5 identifies the 43 BART-eligible sources located in Alabama and identifies the two sources subject to BART.

Table 5: Alabama BART-Eligible and Subject-to-BART Sources

Facilities With Unit(s) Subject to BART
Solutia-Decatur International Paper Co-Courtland
Facilities With Unit(s) Not Subject to BART
EGU CAIR and BART Modeling (PM only) Exempt Sources[16] Alabama Electric Coop - Lowman Alabama Power Co - Barry Alabama Power Co - EC Gaston Alabama Power Co - Gorgas Alabama Power Co - Greene Co Alabama Power Co - Miller TVA- Colbert TVA- Widows Creek ***Non-EGUs Exempt with Additional Model-Based Emissions Limits*** Escambia Operating Co - Big Escambia Creek ***Non-EGUs Exempt with Potential Emissions Limits below 250 Tons per Year***

[16] EGUs were only evaluated for PM emissions. Alabama relied on CAIR to satisfy BART for SO_2 and NO_x for its EGUs in CAIR, in accordance with 40 CFR 51.308(e)(4). Thus, SO_2 and NO_x were not analyzed.

Mobile Energy Services
Rock Tenn (Gulf States Paper)
Tronox, LLC (Kerr McGee Chemical)

Non-EGU Exempt for VOC Only Emissions
3M Company, Decatur Plant
Ciba Specialty Chemicals Corp
Wise Alloys LLC, Alloys Plant

Non-EGUs Exempt by BART Modeling
American Cast Iron Pipe
Boise White Paper
Bowater Inc. - Alabama
BP Amoco Chemicals
Carmeuse Lime & Stone
CEMEX, Inc.
Chemical Lime Co - Alabaster
Chemical Lime Co - Montevallo
ConocoPhillips Co - Chatom
Degussa Corporation
Ft James-Pennington - Naheola
Hunt Refining Co -Tuscaloosa
International Paper Co - Prattville
International Paper Co - Riverdale
JSC Brewton (Smurfit Stone)
Lehigh Cement
MeadWestvaco - Mahrt Mill
National Cement Co of Alabama
Oak Grove Resources
Sanders Lead Co
Shell Chemical Co - Saraland
Sloss Industries
US Pipe & Co - Bessemer
US Steel - Fairfield
Weyerhaeuser
Vintage Petroleum, Inc. - Flomaton

Prior to the CAIR remand, the State's reliance on CAIR to satisfy BART for NO_X and SO_2 for affected CAIR EGUs was fully approvable and in accordance with 40 CFR 51.308(e)(4). However, the BART assessments for CAIR EGUs for NO_X and SO_2 and other provisions in this SIP revision are based on CAIR. In a separate action, EPA has proposed a limited disapproval of

the Alabama regional haze SIP because of deficiencies in the State's regional haze SIP submittal arising from the remand by the D.C. Circuit to EPA of CAIR. *See* 76 FR 82219. Consequently, EPA is not taking action in this proposed rulemaking to address the State's reliance on CAIR to meet certain regional haze requirements.

C. BART Determinations

Three BART-eligible sources (i.e., Solutia-Decatur, International Paper-Courtland, and Escambia-Big Escambia Creek) had modeled visibility impacts of more than Alabama's 0.5 deciview threshold for BART exemption. Escambia accepted permit limits to reduce its visibility impacts to below 0.5 deciview. Only Solutia-Decatur and International Paper-Courtland are therefore considered to be subject to BART. Consequently, they each submitted permit applications to the State that included their proposed BART determinations.

In accordance with the BART Guidelines, to determine the level of control that represents BART for each source, the State first reviewed existing controls on these units to assess whether these constituted the best controls currently available, then identified what other technically feasible controls are available, and finally, evaluated the technically feasible controls using the five BART statutory factors. The State's evaluations and conclusions, and EPA's assessment, are summarized below.

1. Solutia - Decatur

Solutia – Decatur has five BART-eligible emissions units that comprise the BART-eligible source. Boiler No. 5 is a 290 MMBtu per hour (MMBtu/hr) coal-fired spreader-stoker boiler; Boiler No. 6 is a 320 MMBtu/hr coal-fired spreader-stoker boiler; Boiler No. 7 is a 536.1

MMBtu/hr pulverized coal-fired boiler; and Coking Boilers No. 1 and No. 2 are each 384 MMBtu/hr coal-fired stoker boilers. Each of the boilers is equipped with an electrostatic precipitator (ESP) for particulate control, and the boilers have SO_2 emissions limits to address modeled SO_2 NAAQS exceedances in the area. In addition, Solutia has installed a rotating opposed fired air system (ROFA) combustion control to reduce NOx formation on Boiler No. 7. The manufacturer has guaranteed a NOx reduction of 48 percent with the system. This unit is subject to New Source Performance Standards, Subpart D. As required by Subpart D, this boiler has limitations for particulate, SO_2, and NOx emissions.

ADEM has concluded that no additional particulate controls would be reasonable for the BART units at Solutia. For Boilers No. 5 and 6, stack tests have shown an overall PM control efficiency for the ESPs to be 98.8 percent. For Boiler 7, the PM control efficiency has been estimated from stack tests as 99 percent. Although the coking boilers have not been tested, the particulate control efficiency from the ESPs has been estimated at 96 percent. ADEM evaluated the option of adding a baghouse to each of the boilers and coking units following the existing ESPs. The cost effectiveness of this control option ranged from $5,462 to $79,995 per ton of particulate and the visibility improvement for the 98^{th} percentile day ranged from 0.19 to 0.52 deciview.

ADEM determined that no additional controls for Boiler 5, Boiler 6, and the coking boilers would be required for the control of NOx_x emissions for BART. However, Boiler 7 would be required to meet an emission limit of 0.36 lb NOx/MMBtu with the installation of a ROFA system or a comparable technology. Although the basis for the installation of the ROFA system for Boiler No.7 was the Boiler MACT, the system has been installed and was considered as existing equipment for this case-by-case BART analysis. Solutia evaluated additional control

options for NOx. The available combustion control options included low excess air, burners out of service, biased burner firing, overfire air, low NO_x burners, and reburn. Available post-combustion control options included selective non-catalytic reduction (SNCR) and selective catalytic reduction (SCR). Modeling for all of the additional NOx control options evaluated indicated relatively small to no reduction in visibility impacts. No deciview improvements were modeled for the 98th percentile day and only 0.04 - 0.07 deciview improvement was modeled on the maximum high day.

For the control of SO_2, ADEM has determined BART for Boilers 5 and 6 to be an emissions limit of 1.40 lbs SO_2 /MMBtu. Boiler 7, the largest of the emissions units subject to BART, would be required to meet a limitation of 0.47 lb SO_2/MMBtu with the installation of a flue solvent injection (FSI) system or a comparable technology. ADEM concluded that the addition of any controls for the coking units would negate the viability of the coking units; therefore, no additional controls were proposed for these units. Solutia evaluated the utilization of lower sulfur coals, and post-combustion flue gas desulfurization (which would include sorbent injection or wet scrubbers). The use of low sulfur coal (1.4 lbs SO_2/MMBtu) in Boilers 5 and 6 would provide a reduction of approximately 43 percent. Currently, Boiler No. 7 is already required to utilize low sulfur coal. Therefore, the utilization of lower sulfur coal would only provide a reduction of seven percent. In combination with the ROFA system, Solutia has a manufacturer guarantee that the use of a FSI system would reduce SO_2 by as much as 60 percent in Boiler No. 7.

EPA proposes to agree with Alabama's analyses and conclusions for the BART emissions units located at this Solutia facility. EPA has reviewed the ADEM analyses and concluded they were conducted in a manner that is consistent with EPA's BART Guidelines and

EPA's *Air Pollution Control Cost Manual* (http://www.epa.gov/ttncatc1/products.html#cccinfo). Therefore, the conclusions reflect a reasonable application of EPA's guidance to this source.

EPA reviewed the ADEM BART determination for Solutia - Decatur and proposes to concur with Alabama's analyses and conclusions for BART for this facility. EPA believes that the analyses were conducted consistent with EPA's BART Guidelines and EPA's *Air Pollution Control Cost Manual* and that they reflect a reasonable application of EPA's guidance to this source.

2. International Paper - Courtland Mill

International Paper's Courtland Mill has seven BART-eligible emissions units that comprise the BART-eligible source. No. 1 Combination Boiler is a 398 MMBtu/hr combination fuel boiler that fires bark, natural gas, and fuel oil and is operated as a swing boiler. The boiler vents to a venturi scrubber where the gases are scrubbed with water to remove PM. No. 2 Combination Boiler is a 679 MMBtu/hr combination fuel boiler that fires coal, bark, and natural gas. The primary fuel for this boiler is bark. The other primary fuel for this boiler is coal. The No. 2 Combination Boiler is vented to two ESPs to remove PM. The flue gas is then vented to a high pressure venturi scrubber for the removal of SO_2. The Package Boiler is a 365 MMBtu/hr boiler that is utilized as a back-up boiler and is fired by natural gas. The Package Boiler has no external emissions control devices. The No. 2 Recovery Furnace is a 470 MMBtu/hr recovery furnace that is designed to fire black liquor with natural gas and fuel oil as supplemental fuels. The combustion gases from the furnace are vented to an ESP for PM control. The No. 2 Smelt Dissolving Tank is a recovery operation for the No. 2 Recovery Furnace. The No. 2 Smelt Dissolving Tank is vented through a separate scrubber system for PM control. No. 1 and No. 2

Lime Kilns convert lime mud to lime. Both the No. 1 and No. 2 Lime Kilns are fired with natural gas and/or fuel oil, have low NOx burners, and are vented to a scrubber to control particulate emissions.

ADEM concluded that BART for PM is the current suite of installed add-on controls which control particulates at the International Paper-Courtland mill and have efficiencies of greater than 90 percent.

For SO_2, ADEM determined no additional controls to be BART. International Paper evaluated five control options for the No. 1 Combination Boiler and the No. 2 Recovery Boiler. For International Paper-Courtland, the 98th percentile 24-hour visibility improvement from the SO_2 controls evaluated for these two units ranged from 0.013 deciview to 0.063 deciview. The No.2 Combination Boiler is already well controlled for SO_2 and was not evaluated further. Although both the Package Boiler and the No. 2 Smelt Dissolving Tank are BART-eligible sources for SO_2, a control effectiveness review was not performed since both of these sources only emit approximately one ton per year of SO_2. The No. 1 and No. 2 Lime Kilns are also BART-eligible sources for SO_2. However, since both these lime kilns are subject to and are complying with MACT standard 40 CFR Part 63 Subpart MM through the use of wet scrubbers, and since the inherent nature of lime kilns minimize SO_2 emissions, the current approach to MACT compliance was considered BART for SO_2 for these lime kilns.

For NOx ADEM concluded that the control of NOx is only reasonable for the No. 2 Combination Boiler, which is required to install low NOx burners to meet BART. Installation and operation of these burners is projected to result in a 30 percent reduction in the unit's emissions. For the No. 1 Combination Boiler, ADEM required International Paper Courtland to either install low NOx Burners or only operate the No. 1 Combination Boiler when any of the

No. 2 Combination Boiler, the No. 2 Recovery Furnace, the No. 3 Combination Boiler, or the No. 3 Recovery Furnace is either not operating or in periods of start-up of shutdown. International Paper reviewed seven additional NOx control options for the No. 1 and No. 2 Combination boilers and the Package Boiler. For International Paper-Courtland, the 98th percentile 24-hour visibility improvement from the evaluated NOx controls on these two units ranged from 0.013 deciview to 0.097 deciview. For NOx, both the No.1 and No.2 Lime Kilns currently employ low NOx burners in the form of combustion flame tuning to reduce NOx emissions and no other controls where deemed feasible. No additional NO_x controls were identified as being available for the No. 2 Recovery Boiler or the package natural gas boiler.

EPA reviewed the ADEM BART determination for International Paper - Courtland and proposes to concur with Alabama's analyses and conclusions for BART for this facility. EPA believes that the analyses were conducted consistent with EPA's BART Guidelines and EPA's *Air Pollution Control Cost Manual* and that they reflect a reasonable application of EPA's guidance to this source.

3. Enforceability of Limits

Alabama adopted the BART emissions limits for Solutia-Decatur and International Paper Co-Courtland Mill into the State's regional haze SIP (see Tables 6 and 7). ADEM incorporated the BART emissions limits into state operating permits and submitted copies of these BART permit provisions for information as part of the State's regional haze SIP (see Appendix H-5 of the Alabama regional haze submittal). The BART emissions limits will also be added to the facilities' title V permits according to the procedures established in 40 CFR part 70 or 40 CFR part 71.

Table 6: Summary of BART Emissions Limits for Solutia-Decatur

Emissions Unit	Emission Limitations		
	NOx	**SO_2**	**PM_{10}**
Boiler 5	101.22 lb/hr	1.40 lb/MMBtu & 406 lb/hr	0.12 lb/MMBtu & 34.8 lb/hr
Boiler 6	109.72 lb/hr	1.40 lb/MMBtu & 448 lb/hr	0.12 lb/MMBtu & 38.4 lb/hr
Boiler 7	0.36 lb/MMbtu & 193 lb/hr	0.47 lb/MMBtu & 252 lb/hr	0.10 lb/MMBtu & 64.33 lb/hr
Coker 1	104.43 lb/hr	3.57 lb/MMBtu & 1,370.1 lb/hr	0.12 lb/MMBtu
Coker 2	104.43 lb/hr	3.57 lb/MMBtu & 1,370.1 lb/hr	0.12 lb/MMBtu

Table 7: Summary of BART Emissions Limits for International Paper-Courtland

Emissions Unit	Emission Limitations		
	NOx	**SO_2**	**PM_{10}**
No. 1 Combination Boiler	93.15 lb/hr or operational limitations	147.3 lb/hr	0.17 gr/SDCF[17] @ 50% Excess Air
No. 2 Combination Boiler	338.13 lb/hr	1.20 lb/ MMBtu & 65.5 lb/hr	0.10 lb/MMBtu
Package Boiler	0.20 MMBtu & <1,200 million ft3 of natural gas / 12 month period	1.80 lb/MMbtu	0.10 lb/MMBtu
No. 2 Recovery Furnace	152 lb/hr	432 lb/hr	0.044 gr/SDCF* at 8% O2 and 67 lb/hr
No. 2 Smelt Dissolving Tank	Not Applicable	0.20 lb/hr	0.20 lb/ ton of black liquor solids
No. 1 Lime Kiln	3.5 lb/hr	0.10 lb/hr	1.0 lb/air dried ton of pulp
No. 2 Lime Kiln	19.40 lb/hr	0.23 lb/hr	0.067 gr/sdcf at 10%

[17] The term, "gr/SDCF," is the abbreviation used in the Alabama regional haze SIP submittal for "grains per dry standard cubic foot."

ADEM also adopted BART exemption provisions for Rock-Tenn Mill Company, LLC (previously Gulf States Paper); Escambia Operating Company, LLC; Mobile Energy Services Company, LLC; and Tronox LLC (previously Kerr McGee Chemical), which were added to the operating permits of these four facilities. Copies of these operating permits were also included for information in Appendix H-5 of Alabama's regional haze SIP submittal.

The compliance date for the newly adopted limitations for Solutia-Decatur, International Paper Co-Courtland Mill, and Escambia Operating Company-Big Escambia Creek, is January 1, 2013. The BART exemption provisions were effective upon issuance of the state permit.

7. RPGs

The RHR at 40 CFR 51.308(d)(1) requires states to establish RPGs for each Class I area within the state (expressed in deciviews) that provide for reasonable progress towards achieving natural visibility. VISTAS modeled visibility improvements under existing Federal and state regulations for the period 2004-2018, and additional control measures which the VISTAS states planned to implement in the first implementation period. At the time of VISTAS modeling, some of the other states with sources potentially impacting visibility at the Alabama Class I area had not yet made final control determinations for BART and/or reasonable progress, and thus, these controls were not included in the modeling submitted by Alabama. Any controls resulting from those determinations will provide additional emissions reductions and resulting visibility improvement, which give further assurances that Alabama will achieve its RPGs. The modeling demonstrates that the 2018 base control scenario provides for an improvement in visibility better than the uniform rate of progress for the Sipsey Wilderness Area for the most impaired days over

the period of the implementation plan and ensures no degradation in visibility for the least impaired days over the same period.

As shown in Table 8 below, Alabama's RPG for the 20 percent worst days provide greater visibility improvement by 2018 than the uniform rate of progress for the State's Class I area (i.e., 24.80 deciviews in 2018). Also, the RPG for the 20 percent best days provides greater visibility improvement by 2018 than current best day conditions. The modeling supporting the analysis of these RPGs is consistent with EPA guidance prior to the CAIR remand. The regional haze provisions specify that a state may not adopt a RPG that represents less visibility improvement than is expected to result from other CAA requirements during the implementation period. 40 CFR 51.308(d)(1)(vi). Therefore, the CAIR states with Class I areas, like Alabama, took into account emissions reductions anticipated from CAIR in determining their 2018 RPGs.[18] Reliance on CAIR as part of a state's LTS to achieve the state-adopted RPGs is discussed in section IV.C of this action.

Table 8 – Alabama 2018 RPGs (in deciviews)

Class I Area	**Baseline Visibility - 20 Percent Worst Days**	**2018 RPG - 20 Percent Worst Days (Improvement from Baseline)**	**Uniform Rate of Progress at 2018 – 20 Percent Worst Days**	**Baseline Visibility - 20 Percent Best Days**	**2018 RPG - 20 Percent Best Days (Improvement from Baseline)**
Sipsey Wilderness Area	29.03	23.53 (5.50**)**	24.80	15.57	14.22 (1.35)

[18] Many of the CAIR states without Class I areas similarly relied on CAIR emission reductions within the state to address some or all of their contribution to visibility impairment in other states' Class I areas, which the impacted Class I area state(s) used to set the RPGs for their Class I area(s). Certain surrounding non-CAIR states also relied on reductions due to CAIR in nearby states to develop their regional haze SIP submittals.

The RPGs for the Class I area in Alabama are based on modeled projections of future conditions that were developed using the best available information at the time the analysis was done. These projections can be expected to change as additional information regarding future conditions becomes available. For example, new sources may be built, existing sources may shut down or modify production in response to changed economic circumstances, and facilities may change their emissions characteristics as they install control equipment to comply with new rules. It would be both impractical and resource-intensive to require a state to continually revise the RPGs every time an event affecting these future projections changed.

EPA recognized the problems of a rigid requirement to meet a long-term goal based on modeled projections of future visibility conditions, and addressed the uncertainties associated with RPGs in several ways. EPA made clear in the RHR that the RPG is not a mandatory standard which must be achieved by a particular date. *See* 64 FR at 35733. At the same time, EPA established a requirement for a midcourse review and, if necessary, correction of the states' regional haze plans. *See* 40 CFR 52.308(g). In particular, the RHR calls for a five-year progress review after submittal of the initial regional haze plan. The purpose of this progress review is to assess the effectiveness of emissions management strategies in meeting the RPGs and to provide an assessment of whether current implementation strategies are sufficient for the state or affected states to meet their RPGs. If a state concludes, based on its assessment, that the RPGs for a Class I area will not be met, the RHR requires the state to take appropriate action. *See* 40 CFR 52.308(h). The nature of the appropriate action will depend on the basis for the state's conclusion that the current strategies are insufficient to meet the RPGs. Alabama specifically committed to follow this process in the LTS portion of its submittal. Accordingly, EPA proposes to approve Alabama's RPGs for the Sipsey Wilderness Area.

D. Coordination of RAVI and Regional Haze Requirements

EPA's visibility regulations direct states to coordinate their RAVI LTS and monitoring provisions with those for regional haze, as explained in sections III.F and III.G of this action. Under EPA's RAVI regulations, the RAVI portion of a state SIP must address any integral vistas identified by the FLMs pursuant to 40 CFR 51.304. An *integral vista* is defined in 40 CFR 51.301 as a "view perceived from within the mandatory Class I area of a specific landmark or panorama located outside the boundary of the mandatory Class I area." Visibility in any mandatory Class I area includes any integral vista associated with that area. The FLMs did not identify any integral vistas in Alabama. In addition, the Class I area in Alabama is neither experiencing RAVI, nor are any of its sources affected by the RAVI provisions. Thus, the Alabama regional haze SIP submittal does not explicitly address the two requirements regarding coordination of the regional haze with the RAVI LTS and monitoring provisions. However, Alabama previously made a commitment to address RAVI should the FLM certify visibility impairment from an individual source.[19] EPA proposes to find that this regional haze submittal appropriately supplements and augments Alabama's RAVI visibility provisions to address regional haze by updating the monitoring and LTS provisions as summarized below in this section.

In its July 15, 2008, submittal, ADEM updated its visibility monitoring program and developed a LTS to address regional haze. Also in this submittal, ADEM affirmed its commitment to complete items required in the future under EPA's RHR. Specifically, ADEM made a commitment to review and revise its regional haze implementation plan and submit a

[19]Alabama submitted its visibility SIP revisions addressing RAVI on November 20, 1985, which EPA approved on February 10, 1986 (51 FR 4908).

plan revision to EPA by July 31, 2018, and every 10 years thereafter. *See* 40 CFR 51.308(f). In accordance with the requirements listed in 40 CFR 51.308(g) of EPA's regional haze regulations and 40 CFR 51.306(c) of the RAVI LTS regulations, ADEM made a commitment to submit a report to EPA on progress towards the RPGs for each mandatory Class I area located within Alabama and in each mandatory Class I area located outside Alabama which may be affected by emissions from within Alabama. The progress report is required to be in the form of a SIP revision and is due every five years following the initial submittal of the regional haze SIP. Consistent with EPA's monitoring regulations for RAVI and regional haze, Alabama will rely on the IMPROVE network for compliance purposes, in addition to any RAVI monitoring that may be needed in the future. *See* 40 CFR 51.305, 40 CFR 51.308(d)(4). Also, the Alabama new source review (NSR) rules, previously approved in the State's SIP, continue to provide a framework for review and coordination with the FLMs on new sources which may have an adverse impact on visibility in either form (i.e., RAVI and/or regional haze) in any federal Class I area.

The original Alabama visibility SIP submitted to EPA November 20, 1985, addressing the NSR and monitoring strategy requirements in 40 CFR 51.307 and 40 CFR 51.305, respectively, was supplemented by an EPA regulation (40 CFR 52.61) on November 24, 1987 (52 FR 45138), which incorporates 40 CFR 52.29 into the Alabama SIP and continues to be in effect. Because the July 15, 2008, submittal appropriately addresses the LTS requirements and supersedes these previous requirements, EPA is proposing to rescind the federal regulations in 40 CFR 52.61 and rely on the provisions in Alabama's regional haze SIP submittal to meet these requirements.

E. Monitoring Strategy and Other Implementation Plan Requirements

The primary monitoring network for regional haze in Alabama is the IMPROVE network. As discussed in section IV.B.2. of this action, there is currently one IMPROVE site in Alabama, which serves as the monitoring site for the Sipsey Wilderness Area. The IMPROVE measurements are central to Alabama's regional haze monitoring strategy. Each IMPROVE monitor represents a different airshed.

IMPROVE monitoring data from 2000-2004 serves as the baseline for the regional haze program, and is relied upon in the July 15, 2008, regional haze submittal. In the submittal, Alabama states its intention to rely on the IMPROVE network for complying with the regional haze monitoring requirement in EPA's RHR for the current and future regional haze implementation periods.

Data produced by the IMPROVE monitoring network will be used nearly continuously for preparing the five-year progress reports and the 10-year SIP revisions, each of which relies on analysis of the preceding five years of data. The Visibility Information Exchange Web System (VIEWS) web site has been maintained by VISTAS and the other RPOs to provide ready access to the IMPROVE data and data analysis tools. Alabama is encouraging VISTAS and the other RPOs to maintain the VIEWS or a similar data management system to facilitate analysis of the IMPROVE data.

In addition to the IMPROVE measurements, there is long-term limited monitoring by FLMs which provides additional insight into progress toward regional haze goals. Such measurements include a $PM_{2.5}$ Federal Reference Method monitor.

F. Consultation with States and FLMs

1. Consultation with Other States

In December 2006 and May 2007, the State Air Directors from the VISTAS states held formal interstate consultation meetings. The purpose of the meetings was to discuss the methodology proposed by VISTAS for identifying sources to evaluate for reasonable progress. The states invited FLM and EPA representatives to participate and to provide additional feedback. The Directors discussed the results of analyses showing contributions to visibility impairment from states to each of the Class I areas in the VISTAS region.

Additionally, ADEM hosted a meeting amongst the States of Alabama, Florida, Mississippi, and Louisiana in January 2007 to discuss issues specific to the Breton Wilderness Area located in Louisiana. Also, Louisiana participated in a June 2007 FLM/EPA meeting hosted by VISTAS in Asheville, North Carolina, where each state discussed the process used to evaluate sources for reasonable progress. ADEM also participated in Central Regional Air Planning Association (CENRAP) meetings during development of its SIP to keep abreast of CENRAP's and Louisiana's analyses and plans for Breton with respect to regional haze.

ADEM has evaluated the impact of Alabama sources on Class I areas in neighboring states. The state in which a Class I area is located is responsible for determining which sources, both inside and outside of that state, to evaluate for reasonable progress controls. Because many of these states had not yet defined their criteria for identifying sources to evaluate for reasonable progress, Alabama applied its AOI methodology to identify sources in the State that have emissions units with evaluated visibility impacts large enough at Class I areas outside Alabama to potentially warrant further evaluation and analysis. Alabama identified three non-EGU emissions units at two facilities in the State as meeting its minimum threshold for a reasonable

progress control evaluation at two Class I areas outside of the State, i.e., Breton Wilderness Area in Louisiana and St. Marks Wilderness Area in Florida. Based on an evaluation of the four reasonable progress statutory factors, Alabama determined that there are no additional control measures for these three Alabama non-EGU emissions units that would be reasonable to implement to mitigate visibility impacts in Class I areas in these neighboring states. Additionally, Alabama identified EGUs in the State impacting Class I areas in the Joyce-Kilmer Wilderness area in North Carolina (TVA-Widows Creek: Point ID 008); the Breton area in Louisiana (Alabama Power Company – Barry: Point ID 002, 003, 004, 005); and the Cohutta Wilderness Area in Georgia (TVA – Widows Creek: Point ID 009, 008). Since these EGUs are subject to CAIR, Alabama determined that no additional SO_2 controls beyond CAIR are reasonable for this implementation period for these EGUs. ADEM has consulted with these states regarding its reasonable progress control evaluations showing no cost-effective controls available for those emissions units in Alabama contributing at least one percent to visibility impairment at Class I areas in the states. The documentation for these formal consultations is provided in Appendix J of Alabama's SIP.

In addition to Alabama's independent evaluation of the impacts of its sources on neighboring states' Class I areas, the State received letters from the States of Florida, Georgia, and North Carolina, which are included in Appendix J of Alabama's regional haze SIP submittal. North Carolina's letter to Alabama, dated August 2, 2007, states that there are no emissions units in North Carolina that contribute one percent or greater to visibility impairment at the Sipsey Wilderness Area. North Carolina identified one Alabama emissions unit, TVA-Widows Creek (Point ID 008) in Jackson County, Alabama, as meeting North Carolina's threshold for a reasonable progress control evaluation, and requested that Alabama share its reasonable progress

control evaluation for this unit. Because this unit is subject to CAIR and has a scrubber already installed, Alabama has determined that no additional controls beyond CAIR are reasonable for this unit for this first implementation period. The letter from Georgia asked Alabama to share its final list of emissions units for reasonable progress evaluation. Correspondence from Florida in May 2007 initially identified four emissions units at two Alabama facilities, Sanders Lead (Point ID 003 and 008) and Continental Carbon Company (Point ID 003 and 008), on its working list as meeting Florida's threshold for a reasonable progress control evaluation. In November 2007, Florida sent the final list of units meeting the State's threshold to evaluate for reasonable progress control, which did not identify any units in Alabama.

Regarding the impact of sources outside of the State on Class I areas in Alabama, the State identified two emissions units at Georgia Power Company-Plant Yates that contribute one percent or greater to visibility impairment at the Sipsey Wilderness Area. These two EGUs are subject to CAIR. Therefore, ADEM did not request further evaluation of these units from the State of Georgia.

As noted above, ADEM has consulted with Florida, Georgia, North Carolina, and Louisiana regarding the emissions units in Alabama contributing at least one percent to visibility impairment at Class I areas in those states. The documentation for these formal consultations is provided in Appendix J of Alabama's SIP and is also summarized in the SIP Narrative. EPA proposes to find that Alabama has adequately addressed the consultation requirements in the RHR and appropriately documented its consultation with other states in its SIP submittal.

2. Consultation with the FLMs

Through the VISTAS RPO, Alabama and the nine other member states worked extensively with the FLMs from the U.S. Departments of the Interior and Agriculture to develop technical analyses that support the regional haze SIPs for the VISTAS states. The proposed regional haze plan for Alabama was out for FLM and EPA discussions in the November to December 2007 period. Alabama subsequently modified the plan to address FLM comments received in 2007 and provided the revised plan for full public comment in the March to April 2008 time period. On the initial November 2007 draft plan, the FLM comments expressed concern regarding the State's proposal to use the glidepath data points as the RPGs for the best and worst days at the Sipsey Wilderness Area instead of the modeled levels, stating this does not meet the RHR. The State corrected this approach in the proposed plan issued for public comment. The FLMs requested that Alabama add more information from the appendices into the main body of the SIP submittal regarding the impacts of sources outside of the State on the Sipsey Wilderness Area and the impacts of Alabama sources on out-of-state Class I areas. The State augmented the SIP narrative with the requested information in the proposed plan issued for public comment. To address the requirement for continuing consultation procedures with the FLMs under 40 CFR 51.308(i)(4), ADEM made a commitment in the SIP to ongoing consultation with the FLMs on regional haze issues throughout implementation of its plan. ADEM also affirms in the SIP that FLM consultation is required for those sources subject to the State's NSR regulations.

G. Periodic SIP revisions and Five-year Progress Reports

As summarized in section IV.D of this action, consistent with 40 CFR 51.308(g), ADEM affirmed its commitment to submitting a progress report in the form of a SIP revision to EPA every five years following the initial submittal of the Alabama regional haze SIP. The report will evaluate the progress made towards the RPGs for the mandatory Class I area located within Alabama and within each mandatory Class I area located outside Alabama which may be affected by emissions from within Alabama. ADEM also offered recommendations for several technical improvements that, as funding allows, can support the State's next LTS. These recommendations are discussed in detail in the Alabama submittal in Appendix K.

If another state's regional haze SIP identifies that Alabama's SIP needs to be supplemented or modified, and if, after appropriate consultation Alabama agrees, today's action may be revisited or additional information and/or changes will be addressed in the five-year progress report SIP revision.

V. What Action is EPA Taking?

EPA is proposing a limited approval of a revision to the Alabama SIP submitted by the State of Alabama on July 15, 2008, as meeting some of the applicable regional haze requirements as set forth in sections 169A and 169B of the CAA and in 40 CFR 51.300-308, as described previously in this action. Also in this action, EPA is proposing to rescind the federal regulations in 40 CFR 52.61 that were approved into the Alabama SIP on November 24, 1987, and to rely on the provisions in Alabama's July 15, 2008, SIP submittal to meet the LTS requirements for RAVI at 40 CFR 51.306.

VI. Statutory and Executive Order Reviews

A. Executive Order 12866, Regulatory Planning and Review

The Office of Management and Budget (OMB) has exempted this regulatory action from Executive Order 12866, entitled "Regulatory Planning and Review."

B. Paperwork Reduction Act

Under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq., OMB must approve all "collections of information" by EPA. The Act defines "collection of information" as a requirement for answers to * * * identical reporting or recordkeeping requirements imposed on ten or more persons * * *. 44 U.S.C. 3502(3)(A). The Paperwork Reduction Act does not apply to this action.

C. Regulatory Flexibility Act (RFA)

The RFA generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions.

This rule will not have a significant impact on a substantial number of small entities because SIP approvals under section 110 and subchapter I, part D of the CAA do not create any new requirements but simply approve requirements that the state is already imposing. Therefore, because the federal SIP approval does not create any new requirements, I certify that this action will not have a significant economic impact on a substantial number of small entities.

Moreover, due to the nature of the federal-state relationship under the CAA, preparation of a flexibility analysis would constitute federal inquiry into the economic reasonableness of state action. The CAA forbids EPA to base its actions concerning SIPs on such grounds. *Union Electric Co.*, v. *EPA*, 427 U.S. 246, 255-66 (1976); 42 U.S.C. 7410(a)(2).

D. Unfunded Mandates Reform Act (UMRA)

Under sections 202 of the UMRA of 1995 ("Unfunded Mandates Act"), signed into law on March 22, 1995, EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, of $100 million or more. Under section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

EPA has determined that today's proposal does not include a federal mandate that may result in estimated costs of $100 million or more to either state, local, or tribal governments in the aggregate, or to the private sector. This federal action proposes to approve pre-existing requirements under state or local law, and imposes no new requirements. Accordingly, no additional costs to state, local, or tribal governments, or to the private sector, result from this action.

E. Executive Order 13132, Federalism

Federalism (64 FR 43255, August 10, 1999) revokes and replaces Executive Orders 12612 (Federalism) and 12875 (Enhancing the Intergovernmental Partnership). Executive Order 13132 requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have Federalism implications." "Policies that have Federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government." Under Executive Order 13132, EPA may not issue a regulation that has Federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the federal government provides the funds necessary to pay the direct compliance costs incurred by state and local governments, or EPA consults with state and local officials early in the process of developing the proposed regulation. EPA also may not issue a regulation that has Federalism implications and that preempts state law unless the Agency consults with state and local officials early in the process of developing the proposed regulation.

This rule will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132, because it merely approves a state rule implementing a federal standard, and does not alter the relationship or the distribution of power and responsibilities established in the CAA. Thus, the requirements of section 6 of the Executive Order do not apply to this rule.

F. Executive Order 13175, Coordination with Indian Tribal Governments

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." This proposed rule does not have tribal implications, as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments. Thus, Executive Order 13175 does not apply to this rule. EPA specifically solicits additional comment on this proposed rule from tribal officials.

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

Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997), applies to any rule that: (1) is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This rule is not subject to Executive Order 13045 because it does not involve decisions intended to mitigate environmental health or safety risks.

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

This rule is not subject to Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act (NTTAA)

Section 12 of the NTTAA of 1995 requires federal agencies to evaluate existing technical standards when developing a new regulation. To comply with NTTAA, EPA must consider and use "voluntary consensus standards" (VCS) if available and applicable when developing programs and policies unless doing so would be inconsistent with applicable law or otherwise impractical.

EPA believes that VCS are inapplicable to this action. Today's action does not require the public to perform activities conducive to the use of VCS.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Intergovernmental relations, Nitrogen oxides, Particulate matter, Reporting and recordkeeping requirements, Sulfur dioxide, Volatile organic compounds.

AUTHORITY: 42 U.S.C. 7401 *et seq*.

Dated: February 15, 2012 Signed: A. Stanley Meiburg

Acting Regional Administrator,

Region 4

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