**6560-50-P**

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 52**

**[EPA-R07-OAR-2012-0153, FRL-9638-3]**

# Approval and Promulgation of Air Quality Implementation Plans; State of Missouri; 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 Missouri State Implementation Plan (SIP) submitted by the State of Missouri through the Missouri Department of Natural Resources (MDNR) on August 5, 2009, and supplemental information submitted on January 30, 2012, 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 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 toward 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 Missouri on the

basis that the revision, as a whole, strengthens the Missouri SIP. In a separate action EPA has previously proposed a limited disapproval of the Missouri 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 Court of Columbia (D.C. Circuit) to the EPA of the Clean Air Interstate Rule (CAIR). *See* 76 FR 82219. Therefore, we are not taking action in this notice 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-R07-OAR-2012-0153 by one of the following methods:

1. www.regulations.gov: Follow the on-line instructions for submitting comments.

2. Email: wolfersberger.chris@epa.gov.

3. Fax: 913-551-7884 (please alert the individual listed in the FOR FUTHER INFORMATION CONTACT if you are faxing comments.

4. Mail: Air Planning and Development Branch, U.S. Environmental Protection Agency, Region 7, 901 N. 5th Street, Kansas City, Kansas 66101; attention Chrissy Wolfersberger

5. Hand Delivery or Courier: Air Planning and Development Branch, U.S. Environmental Protection Agency, Region 7, 901 N. 5th Street, Kansas City, Kansas 66101; attention Chrissy

Wolfersberger. 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, 8:00 a.m. to 5:00 p.m., excluding Federal holidays. Special arrangements should be made for deliveries of boxed information.

**INSTRUCTIONS:** Direct your comments to Docket ID No. EPA-R07-OAR-2012-0153. 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 Air Planning and Development Branch, U.S. Environmental Protection Agency, Region 7, 901 N. 5th Street, Kansas City, Kansas 66101. EPA requests that if at all possible, you contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section to schedule your inspection. You may view the hard copy of the docket Monday through Friday, 8:00 a.m. to 5:00 p.m., excluding Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** Chrissy Wolfersberger, Air Planning and Development Branch, U.S. Environmental Protection

Agency, Region 7, 901 N. 5th Street, Kansas City, Kansas 66101. Chrissy Wolfersberger can be reached at telephone number (913) 551-7864 and by electronic mail at wolfersberger.chris@epa.gov.

**SUPPLEMENTARY INFORMATION:** Throughout this document, wherever "we," "us," or "our" is used, we mean the EPA.

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VI. Statutory and Executive Order Reviews

## I. What Action is EPA Proposing?

EPA is proposing a limited approval of Missouri's August 5, 2009, SIP revision, including supplemental information submitted on January 30, 2012, addressing regional haze under CAA sections 301(a) and 110(k)(6) because the revision as a whole strengthens the Missouri SIP. This proposed rulemaking and the accompanying Technical Support Document[1] (TSD) explain the basis for EPA's proposed limited approval action.[2]

In a separate action, EPA has proposed a limited disapproval of the Missouri 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. 76 FR 82219. We are not proposing to take action in today's rulemaking on issues associated with Missouri's reliance on CAIR in its regional haze SIP. Comments on our proposed limited disapproval of Missouri's regional haze SIP may be directed to the docket for that rulemaking, Docket ID No. EPA-HQ-OAR-2011-0729.

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

[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.

## 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., $SO_2$, $NO_x$, 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

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

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. 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, impairment of visibility in mandatory Class I Federal areas[4] which impairment results from man-made 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". 45 FR 80084. These regulations represented the first phase in addressing visibility impairment. EPA deferred

[4] Areas designated as mandatory Class I Federal areas consist of national parks exceeding 6000 acres, wilderness areas and national memorial parks exceeding 5000 acres, and all international parks that were in existence on August 7, 1977. 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. 44 FR 69122 (November 30, 1979). The extent of a mandatory Class I area includes subsequent changes in boundaries, such as park expansions. 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 Federal area is the responsibility of a ''Federal Land Manager.'' 42 U.S.C. 7602(i). When we use the term "Class I area" in this action, we mean a "mandatory Class I Federal area."

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 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.

[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).

**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 Central Regional Air Planning Organization (CENRAP) 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 Central United States. Member State and tribal governments include: Minnesota, Iowa, Missouri, Arkansas, Louisiana, Texas, Oklahoma, Kansas, Nebraska, Leech Lake Band of Ojibwe, Mille Lacs Band of Ojibwe, Fond du Lac Reservation, Grand Portage Band of Chippewa Indians, Red Lake Band of Chippewa Indians, Lower Sioux Indian communities, Alabama-Coushatta Tribe of Texas, United Keetowah Band of Cherokee Indians, Eastern Shawnee Tribe of Oklahoma, Kialegee Triabal Town, Absentee Shawnee Tribe of Oklahoma, Qua Paw Tribe, Santee Sioux Nation, Prairie Band Potawatomi Nation, Sac and Fox Nation of Missouri, and the Winnebago Tribe of Nebraska.

## III. What Are the Requirements for 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. Determinations of Baseline, Natural, and Current Visibility Conditions**

The RHR establishes the deciview (dv) 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 dv is determined by using air quality measurements to estimate light extinction and then transforming the value of light extinction using a logarithm function. The dv is a more useful measure for tracking progress in improving visibility than light extinction itself because each dv change is an equal incremental change in visibility perceived by the human eye. Most people can detect a change in visibility at one dv.[6]

The dv 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

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

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 midway through each ten-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 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* (EPA-454/B-03-004 September 2003 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) ten-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) ten-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 ten-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 emission sources that

may be affecting visibility impairment at the Class I State's areas. 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.

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

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 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 emission 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 dv.

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 emission 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. CAA section 169(g)(4); 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 BART. Under regulations issued in 2005 revising the regional haze program, EPA made just such a demonstration for CAIR. 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 (FIP) in 40 CFR Part 97 need not require affected BART-eligible EGUs to install, operate, and maintain BART for emissions of $SO_2$ and $NO_x$. 40 CFR 51.308(e)(4). Because CAIR is not applicable to 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, however, 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 $NO_x$ 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. 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 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 the 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 ten to fifteen year strategy for making reasonable progress, 40 CFR

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. 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. 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. 40 CFR 51.308(d)(3)(v).

**F. Coordinating Regional Haze and Reasonably Attributable Visibility Impairment (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**

40 CFR 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 Federal areas within the State. The strategy must be coordinated with the monitoring strategy required in 40 CFR 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 ten years thereafter. Periodic SIP revisions must meet the core requirements of 40 CFR 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 40 CFR 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. 40 CFR 51.308(i). States must provide FLMs an opportunity for consultation, in person and at least sixty 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 Missouri's Regional Haze Submittal?

On August 5, 2009, MDNR's Air Pollution Control Program submitted revisions to the Missouri SIP to address regional haze in the State's Class I areas as required by EPA's RHR.

### A. Affected Class I Areas

Missouri has identified two Class I areas within its borders: Hercules Glades Wilderness Area and Mingo National Wildlife Refuge. Because both areas lie within Missouri's geographic boundaries, Missouri is responsible for developing a regional haze SIP that addresses these Class I areas. EPA proposes to approve Missouri's identification of affected Class I areas. Missouri determined appropriate RPGs and consulted with other States that impact the two Class I areas. Missouri is responsible for developing long-term emission strategies, its

role in the consultation process, and how the Missouri SIP meets the other requirements in EPA's regional haze regulations.

The Missouri regional haze SIP establishes RPGs for visibility improvement at each of these Class I areas and a LTS to achieve those RPGs within the first regional haze implementation period ending in 2018. In developing the LTS for each area, Missouri considered both emission sources inside and outside of Missouri that may cause or contribute to visibility impairment in Missouri's Class I areas. The State also identified and considered emission sources within Missouri 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 CENRAP 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 two areas in Missouri and Caney Creek and Upper Buffalo Wilderness Areas in Arkansas.

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

As required by the RHR and in accordance with EPA's 2003 Natural Visibility Guidance, Missouri calculated baseline/current and natural visibility conditions for each of its Class I areas, 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 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

[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 emission 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.

refinement to the "old IMPROVE equation" is to provide more accurate estimates of the various factors that affect the calculation of light extinction. Missouri opted to use the default estimates for natural conditions for the 20 percent best days while using the "new IMPROVE equation," for the 20 percent worst days for its two Class I areas described in Table 1 below. Using this approach, natural visibility conditions using the new IMPROVE equation were calculated separately for each Class I area by CENRAP.

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, 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

[9] The science behind the revised IMPROVE equation is summarized in Appendix B.2 of the Missouri Regional Haze submittal and in numerous published papers. See for example: 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.

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**

Missouri estimated baseline visibility conditions at the Hercules Glades Wilderness area (Hercules Glades) using monitoring data from the Hercules Glades IMPROVE monitoring site. Missouri estimated the baseline visibility conditions at the Mingo National Wildlife Refuge (Mingo) using the Mingo IMPROVE monitoring site. As explained in Section III. B., for the first regional haze SIP, baseline visibility conditions are the same as current conditions. 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 each Missouri Class I area. *See* page 2-8 of EPA's 2003 Tracking Progress Guidance. Table 1 below specifies the 20 percent best and worst days for the baseline period of 2000-2004 for Hercules Glades and Mingo.

### 3. Summary of Baseline and Natural Conditions

For the Hercules Glades Class I area, baseline visibility conditions on the 20 percent worst days are approximately 26.75 dv. For the Mingo Class I area, baseline visibility conditions on the 20 percent worst days are approximately 28.02 dv. Natural visibility conditions for the Mingo Class I area is best represented by 12.40 dv for the 20 percent worst days. The Hercules Glades Wilderness Class I area is best represented by 11.30 dv for the 20 percent worst days. The natural and baseline conditions for Missouri's Class I areas for both the 20 percent worst and best days are presented in Table 1 below.

Table 1-Natural Background And Baseline Conditions For The Missouri Class I Areas

| Class I area | Average for 20% worst days (dv) | Average for 20% best days (dv) |
|---|---|---|
| Natural Background Conditions: | | |
| Mingo | 12.40 | 3.59 |
| Hercules Glades | 11.30 | 3.59 |
| Baseline Visibility Conditions (2000-2004): | | |
| Mingo | 28.02 | 13.76 |
| Hercules Glades | 26.75 | 12.84 |

EPA proposes to approve Missouri's determination of baseline and natural conditions.

**4. Uniform Rate of Progress**

In setting the RPGs, Missouri 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 two Class I areas. (Figures 8.1 and 8.2 of the Missouri SIP). Missouri 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 2000-2004 to the level of visibility conditions representing no anthropogenic impairment in 2064 for its two areas. 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. Missouri's SIP shows that the State's RPGs for its areas 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 Hercules Glades Class I area, the overall visibility improvement necessary to reach natural conditions is the difference between baseline visibility of 26.75 dv for the 20 percent worst days and natural conditions of 11.30 dv, i.e., 15.45 dv. Over the sixty-year period from 2004 to 2064, this would require an average improvement of 0.258 dv per year to reach natural conditions. Hence, for the first fourteen-year implementation 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 Hercules Glades, Missouri would need to achieve at least 3.61 dv (i.e., 0.258 dv x 14 years = 3.61 dv) of visibility improvement from the 26.75 dv baseline in 2004, resulting in visibility levels at or below 23.14 dv in 2018. As discussed below in section IV. C, "Reasonable Progress Goals," Missouri projects a 3.69 dv improvement to visibility from the 26.75 dv baseline to 23.06 dv in 2018 for the 20 percent most impaired days, and a 0.89 dv improvement to 11.95 dv from the baseline visibility of 12.84 dv for the 20 percent least impaired days.

For the Mingo Class I area, the overall visibility improvement necessary to reach natural conditions is the difference between baseline visibility of 28.02 dv for the 20

percent worst days and natural conditions of 12.40 dv, i.e., 15.62 dv. Over the sixty-year period from 2004 to 2064, this would require an average improvement of 0.260 dv per year to reach natural conditions. Hence, for the first fourteen-year implementation 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 Mingo, the State would need to achieve at least 3.64 dv (i.e., 0.260 dv x 14 years = 3.64 dv) of visibility improvement from the 28.02 dv baseline in 2004, resulting in visibility levels at or below 24.37 dv in 2018. As discussed below in section IV. C, "Reasonable Progress Goals," Missouri projects a 4.31 dv improvement to visibility from the 28.02 dv baseline to 23.71 dv in 2018 for the 20 percent most impaired days, and a 0.92 dv improvement to 12.84 dv from the baseline visibility of 13.76 dv for the 20 percent least impaired days.

EPA proposes to approve Missouri's determination of the uniform rate of progress for its Class I area.

## C. Determination of Reasonable Progress Goals (RPGs)

Missouri has established RPGs for its Class I areas for the first ten year period of the plan. The RPGs provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period. As described above in the Uniform Rate of Progress discussion and further detailed in the TSD for today's action, Missouri has determined that the modeled rate of visibility improvement by 2018, shown in Table 2 below, is reasonable and has adopted it as the RPG for the listed Class I areas. The RPGs demonstrate that Missouri's visibility impact will be below the uniform rate of progress necessary to achieve natural visibility for the 20 percent worst days by the year 2064. Additionally, the modeled impact on the 20 percent best days shows no degradation from baseline conditions. The modeling inputs, methodologies, and consideration of controls are further described in the Long-Term Strategy section under IV. E. below

TABLE 2-2018 Reasonable Progress Goals

| Class I Area | Baseline Conditions, 20% worst days (dv) | 2018 URP | 2018 Modeled 20% worst days **(goals)** | Baseline Conditions, 20% best days (dv) | 2018 Modeled 20% best days |
|---|---|---|---|---|---|
| Mingo | 28.02 | 24.37 | 23.71 | 13.76 | 12.84 |
| Hercules Glades | 26.75 | 23.14 | 23.06 | 12.84 | 11.95 |

**Note: All units are in deciviews**

In establishing the RPGs for Missouri's Class I areas, the State took into consideration the four statutory factors identified from 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. Missouri demonstrates that these four factors were applied in determining control strategy options for all source categories including point sources, area sources, on-road mobile sources, and off-road mobile sources, which are also included in the State's Long-Term Strategy analysis described in section IV. E of this notice. That section identifies the control measures Missouri is relying upon to achieve the RPGs. In addition to these four factors, other related CAA related programs were evaluated to determine what effect these programs have had or will have on existing and future sources, and if any other control strategies would be reasonable in terms of the four factors described above. For most sources, the State determined that CAA programs or rules such as NSR permitting, NSPS standards, MACT standards, on-road and off-road engine standards, Clean Air Interstate Rule, fuel standards, and various State rules were reasonable, and for these sources no other measures were deemed appropriate based on the four factors. In addition, if other reasonable control strategies

are identified for these sources that contribute to visibility impairment, beyond those implemented through this plan, the State has committed to incorporate such strategies into future SIP revisions to be considered along with the five-year progress reports.

To demonstrate that it properly analyzed the four factors, Missouri relies upon the following: 1) an independent analysis completed by Missouri; 2) a cost analysis by CENRAP; 3) a published report by the Minnesota Pollution Control Agency; and 4) a description of the cost-effectiveness and visibility impacts from the Clean Air Interstate Rule on Missouri's Class I areas. Further detailed information is provided in the TSD for today's action, as well as in the State's SIP.

Missouri's independent analysis primarily discusses the adequacy of its current New Source Review permitting process in addressing visibility impacts of new sources, and also provides a statewide point source emissions analysis in consideration of the four factors. Missouri describes that when the State performs a BACT analyses for new sources, the State takes into account the same four factors that are required for developing control strategies under a Regional Haze State Implementation Plan. Additionally, all new stationary emission sources are required to obtain a construction permit prior to commencing construction and must ensure that no significant degradation to

visibility in Class I areas will occur. For EGU sources, Missouri relies upon CAIR as part of its four factor analysis to demonstrate that ongoing air pollution control programs are sufficient to meet the 2018 Uniform Rate of Progress for the Missouri Class I areas. For existing non Electric Generating Units (non-EGU) sources, the State demonstrates through a four factor analysis that existing SIP requirements that cover broad non-EGU emission source categories adequately address visibility impacts in Missouri's Class I areas. Missouri reached this conclusion by analyzing non-EGU point sources emitting greater than 50 tons per year of $NO_x$, $SO_2$, and $PM_{10}$. Missouri removed from consideration sources that had already undergone a refined modeling BART analysis or were located in the St. Louis $PM_{2.5}$ nonattainment area, where sources had recently been subject to a RACT/RACM analysis as part of the development of the attainment plan. Missouri used two different methods to analyze the emissions from these remaining sources. The first was to demonstrate on a mass basis, that the level of emissions from these sources were not likely to have a significant impact on visibility impairment on Missouri's Class I areas. Thus, Missouri determined that researching and analyzing new control requirements for these sources would not be noticeably beneficial to visibility in either of Missouri's Class I areas. For the second, the State conducted a Q/D review of these

sources, which is an acceptable screening tool for BART sources, that considers a source's annual emissions in relationship to the distance from Class I areas. As a result of this analysis, Missouri identified five sources that required further examination: Royal Oak Enterprises; Aqualon Division of Hercules; Lone Star Industries; Chemical Lime Company; and Natural Gas Pipeline Company. Missouri determined that additional controls for these sources were not warranted for one of the following reasons: 1) recent permit revisions limit the pollutant of concern; 2) implementation of a compliance agreement that requires the shutdown of emissions units coupled with operation limits on remaining units; 3) a recent BACT analysis was undertaken; or 4) cost effective controls were not available and the units are nearing the end of their useful life. A more in-depth discussion of Missouri's approach is provided in the State's technical supplement and EPA's TSD.

In addition, the State also relied upon a cost analysis provide by the CENRAP RPO that examined the availability of controls in the CENRAP states that impact visibility in Hercules Glades and Mingo. The analysis primarily looked at controls on EGUs, industrial, commercial and institutional (ICI) boilers, internal combustion engines, and cement kilns. Most of the Missouri facilities identified in the analysis were EGUs already participating in federal CAIR rule. The State considered but

did not adopt the recommendations for additional controls for non-EGUs due to one or more of the following reasons:

- Proposed controls are not cost effective
- Emissions from sources within the source category are below a threshold limit of 100 tons
- Sources passed the BART screening analysis
- Sources already installed controls required by the $NO_X$ SIP Call

In addition to the CENRAP analyses, the MRPO and the Minnesota Pollution Control Agency published a report on the four-factor analysis (referred to as the "4-factor report" in the docket). The report examined the factors in a nine-state area (Minnesota, Wisconsin, Michigan, Indiana, Illinois, Missouri, Iowa, North Dakota, and South Dakota.). The 4-factor report primarily reviewed controls on EGUs; ICI boilers; reciprocating engines and turbines, and mobile sources. Missouri has determined based on the cost of compliance and remaining useful life of these sources, that additional controls are not reasonably available for non-EGU sources in the development of RPGs in Missouri. Missouri specifically concludes from the report that additional controls from ICI boilers, reciprocating engines, combustion turbines and other point sources are not warranted based on cost of controls and visibility improvement. Missouri determined

that for EGUs, emission reductions predicted to result from CAIR would be sufficient for ensuring reasonable progress during the first implementation period (between baseline and 2018).

EPA proposes to find that Missouri has appropriately established goals that provide for reasonable progress towards achieving natural visibility conditions. The goals provide for an improvement in visibility for the most impaired days over the period of the plan and ensure no degradation in visibility over the same period. In addition, the State has demonstrated consideration of the four statutory factors, consistent with EPA guidance, in developing the RPGs.

**D. BART**

BART is an element of Missouri'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 Missouri and Missouri's findings are discussed as follows.

**1. BART-Eligible Sources**

The first phase of a BART evaluation is to identify all the BART-eligible sources within the State's boundaries. Missouri identified its BART-eligible sources 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 emission units at the facility fit within one of the 26 categories listed in the BART Guidelines; (2) emission unit(s) was construction on or after August 6, 1962, and was in existence prior to August 6, 1977; and (3) potential emissions of any visibility-impairing pollutant from subject units are 250 tons or more per year.

The BART Guidelines also direct states to address $SO_2$, $NO_x$ and direct PM (including both $PM_{10}$ and $PM_{2.5}$) emissions as visibility-impairment pollutants, and to exercise judgment in determining whether VOC or ammonia emissions from a source impair visibility in an area. 70 FR 39160.

Missouri analyzed anthropogenic emissions for both VOC and $NH_3$ during their emission inventory review and determined that these pollutants from 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. Missouri listed the following reasons for not performing a further analysis on these pollutants after the emission inventory review: 1) the majority of VOC emissions in Missouri are biogenic in nature and specifically the areas near Mingo and Hercules Glades are very rich in biogenic emissions (limited ability to reduce organic concentrations at the Class I

areas); 2) the largest areas of anthropogenic VOC emissions in Missouri exist in the metropolitan areas (St. Louis and Kansas City) where VOC emission control has been undertaken to address ozone attainment issues (meaning large VOC sources have already been controlled); 3) the other category that would have substantial, uncontrolled VOC emissions is charcoal kilns, Missouri required existing charcoal kilns to install afterburners or shutdown noncompliant kilns as a result of 10 CSR 10-6.330; 4) the overall ammonia inventory is very uncertain and the amount of anthropogenic emissions at the sources that were BART-eligible was relatively small; and 5) no additional sources were identified that had greater than 250 tons per year $NH_3$ and required a subsequent BART analysis. After reviewing their sources the State found 27 BART-eligible sources. These sources are listed in Table 3 below.

TABLE 3- Facilities with BART-eligible Units in the State of Missouri

| **BART Source Category Name** | **SIC Code** | **Facility ID** | **Facility Name** | **BART-Eligible Emission Units** |
|---|---|---|---|---|
| Fossil-fuel fired steam electric plants of more than 250 MMBTU (1)* | 4911 | 29-071-0003 | Ameren – Labadie | Boiler 1 – B1, Boiler 2 – B2, Boiler 3 – B3, and Boiler 4 – B4 |
| (1)* | 4911 | 29-183-0001 | Ameren – Sioux | Boiler 1 – B1 and Boiler 2 – B2 |
| (1)* | 4911 | 29-099-0016 | Ameren – Rush Island | Boiler 1 – B1 and Boiler 2 – B2 |
| (1)* | 4911 | 29-095-0031 | Aquila – Sibley | Boiler 3 – 5C |
| (1)* | 4911 | 29-143-0004 | Associated Electric – New Madrid | Boiler 1 – EP-01 and Boiler 2 – EP – 02 |
| (1)* | 4911 | 29-077-0039 | City Utilities Springfield - Southwest | Boiler 1 – E09 |
| (1)* | 4911 | 29-077-0005 | City Utilities Springfield – James River | Utility Boiler #4 – E07 and Utility Boiler #5 – E08 |
| (1)* | 4911 | 29-097-0001 | Empire District Electric – Asbury | Boiler – 7 |
| (1)* | 4911 | 29-083-0001 | Kansas City Power and Light – Montrose | Boiler Unit 3 – EP08 |
| *(1)** | *4911* | *29-021-0004* | *Aquila – Lake Road* | *Boiler 6 – EP06* |
| *(1)** | *4911* | *29-175-0001* | *Associated Electric – Thomas Hill* | *Boiler 1 - EP-01 and Boiler 2 – EP-02* |
| (1) | 4911 | 29-095-0021 | Trigen – Kansas City | Boiler 1A |
| *(1)* | *4911* | *29-019-0002* | *City of Columbia Municipal Power Plant* | *Boiler #7 - EP02* |
| *(1)* | *4911* | *29-195-0010* | *Marshall Municipal Utilities* | *Coal-Fired Boiler - EP05* |
| *(1)* | *4911* | *29-095-0050* | *Independence Power and Light – Blue Valley* | *Boiler #3 – EP05* |
| Portland cement plants (4) | 3241 | 29-099-0002 | RC Cement | 4-K-02 (Kiln) |
| *(4)* | *3241* | *29-173-0001* | *Continental Cement* | *KP01 (Kiln)* |
| *(4)* | *3241* | *29-163-0001* | *Holcim - Clarksville* | *Kiln – EP14 and a variety of supporting units* |
| Primary aluminum ore reduction plants (7) | 3334 | 29-143-0008 | Noranda Aluminum | Potlines 1 & 2 – EP-59,60,& 61, Carbon Bake 1 and 2 Stacks – EP 98 & 99, and a variety of supporting units** |

| | | | | |
|---|---|---|---|---|
| Hydrofluoric, sulfuric, and nitric acid plants (10) | 2873 | 29-163-0031 | Dyno Nobel – Lomo Plant | Ammonia Oxidation Process – E01 |
| Lime plants (12) | 3274 | 29-186-0001 | Mississippi Lime | Peerless Rotary Kilns 3,4,5&6 – EP-68-71 |
| Primary lead smelters (17) | 3339 | 29-099-0003 | Doe Run – Herculaneum | Blast Furnace – EP059 |
| (17) | 3339 | 29-093-0008 | Doe Run – Glover | Sinter Plant - EP-01 and Other Units at the facility |
| Secondary metal production facilities (20) | 3341 | 29-087-0001 | Exide Technologies | Main Stack – EP01 |
| *(20)* | *3339* | *29-093-0009* | *Doe Run – Buick* | Main Stack – EP08 |
| *Chemical Process Plants (21)* | *2879* | *29-127-0001* | *BASF Corporation* | *PR08 – HNO3 Storage Tank, PR53/54 Incinerators, TC01 Incinerator, UTIL07 – 2 Gas-fired boilers* |
| Fossil-fuel boilers >250 MMBTUs per hour (22) | 4911 | 29-019-0004 | University of Missouri – Columbia | Boiler 10 |

*BART-eligible EGU units included in the CAIR assumed to be BART for $SO_2$ and $NO_X$

EPA is proposing to find that the State appropriately identified its BART-eligible sources in accordance with 40 CFR 51.308(e)(1)(i) of the Regional Haze Rule and the BART Guidelines.

**2. 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, Missouri 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 or Missouri performed the analysis for the source.

a. Modeling Methodology

The BART Guidelines allow states to use the CALPUFF[10] modeling system or another appropriate model to predict the visibility impacts from a single source on a Class I area and to therefore, 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 CALPUFF is the best regulatory modeling application currently available for predicting a single source's contribution to visibility impairment (70 FR 39162). Missouri, in coordination with CENRAP, used the CALPUFF modeling system to determine whether individual sources in Missouri were subject to or exempt from BART.

[10] Note that our 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.

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 CENRAP States, including Missouri, 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 CENRAP protocol.

Missouri performed an initial screening CALPUFF analysis for the BART-eligible sources on the two Class I area's within the State along with Upper Buffalo in Arkansas and Mammoth Cave in Kentucky, depending on the individual source location. The screening runs took the maximum visibility impacts and compared them to the contribution threshold discussed below. Those sources with a maximum impact below the contribution threshold were excluded from additional BART analysis based on their minimal visibility impacts.

b. 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 dv 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 dv." The BART 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.

Missouri used a contribution threshold of 0.5 dv for determining which sources are subject to BART as there are a limited number of BART-eligible sources in close proximity to each of the State's Class I areas. EPA agrees with the State's rationale for choosing this threshold value. For the Missouri sources that were shown to be impacting the Class I areas, Missouri demonstrated that they were located far from the Class I area and that the majority of the individual BART-eligible sources had visibility impacts well below 0.5 d.

c. Identification of Sources Subject to BART

Missouri initially identified twenty seven facilities with BART-eligible sources. Missouri chose to use multiple methods

to exclude sources from a full BART demonstration. Missouri grouped their sources into four categories. The first category included the EGU sources that relied on CAIR to satisfy the BART requirements for $SO_2$ and $NO_X$, in accordance with 40 CFR 51.308(e)(4). 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). As explained above, we are not proposing to take action in today's rulemaking on issues associated with Missouri's reliance on CAIR in its regional haze SIP, including BART for $SO_2$ and $NO_x$ for EGUs. In a separate action, EPA has previously proposed a limited disapproval of Missouri's 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 (D.C. Circuit) to EPA of CAIR See, 76 FR 82219.

Given Missouri's reliance on CAIR to address the BART requirements for $SO_2$ and $NO_x$, these facilities were only required to evaluate PM emissions in their BART determinations. These sources were modeled collectively for PM only and the modeling demonstrated that the group of EGU sources as a whole contributed less than the 0.5 dv contribution threshold for PM. Based on this analysis the State excluded this group of sources from being BART-subject for PM.

The second group of sources was those where the BART unit was permanently shut down or where the source no longer had an operating permit for the BART unit. These sources were excluded from further BART analysis because the units in question would have to perform a BACT analysis before resuming operations. The third group consisted of a single source that had undergone a recent permit that required a BACT review. Missouri performed a refined CALPUFF demonstration eliminating this source from further BART analysis based on modeled visibility impacts less than the 0.5 dv threshold. Missouri conducted a refined BART modeling analysis using CALPUFF for the fourth group of sources made up of the eight remaining sources. The sources are University of Missouri-Columbia, Noranda, BASF Corporation - Palmyra, Independence Power and Light – Blue Valley, Columbia Municipal Power Plant, Marshall Municipal Utilities, Doe Run Buick, and Holcim – Clarksville. Using the modeling methodology described above, Missouri excluded all but one source, Holcim – Clarksville, from being BART-subject based on modeled visibility impacts below 0.5 dv. The full description of the process Missouri used to identify BART-subject sources is included in section K of the TSD.

After review of the State's method for determining BART-subject sources and the refined analysis of those sources, EPA is proposing to find that the State appropriately identified all

of the sources in the State that are BART-subject in accordance with 40 CFR 51.308(e)(1)(ii) the Regional Haze Rule and the BART Guidelines.

**3. BART Determinations**

In making BART determinations, CAA section 169A(g)(2) and 40 CFR 51.308(e)(1)(ii)(A) require 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. This five step analysis is commonly referred to as a "five factor analysis."

As stated above, Missouri only had one BART source, Holcim – Clarksville, that required a full five factor analysis. As described above and in detail in the TSD, the remaining subject to BART sources were either included in CAIR or have been exempted from a BART analysis due to lack of visibility impacts above the contribution threshold, eligible units were shutdown, or BACT had been applied.

For Holcim – Clarksville, Missouri required the source to submit a full BART analysis which considered the five factors. Holcim submitted three separate BART analyses, the first in April 2008 with revised submittals in June and July 2008. The

submittals addressed the five factors including looking at the various available control options for $SO_2$ and $NO_x$ control. For $SO_2$, three technically feasible options were identified, wet lime scrubbing, fuel substitution and dry lime scrubbing. For $NO_x$, two feasible control technologies were identified: mid-kiln firing and selective noncatalytic reduction.

For $SO_2$, wet lime scrubbing could provide reductions of 95 percent resulting in actual $SO_2$ reductions of 10,326 tons/yr at a cost of $2,428/ton of $SO_2$ removed. Visibility modeling of this control technology was performed assuming a 87.5 percent control efficiency resulting in modeled visibility improvements between 0.4 – 0.53 dv at the three Class 1 areas evaluated. Dry lime scrubbing (DLS) was also evaluated using control efficiencies estimated up to 30 percent resulting in actual reductions of 3,272 tons/yr at a cost of $4,500/ton of $SO_2$ removed. DLS was modeled assuming a control efficiency of 25 percent resulting in visibility improvements of 0.11 – 0.14 dv at the three Class 1 areas evaluated. Fuel substitution provided 23-50 percent control, depending on the substitute fuel chosen. Reductions of actual $SO_2$ emissions between 2,641 tons and 5,741 tons could be achieved at a cost of $1,489/ton to $4,741/ton $SO_2$ reduced. Visibility improvements at the three Class I areas ranged from 0.09 – 0.14 dv using the 23 percent reduction to 0.23 – 0.31 dv using a 45 percent reduction.

For $NO_x$ both mid-kiln firing and selective noncatalytic reduction were identified as viable control options. Low-$NO_x$ burners, Cement Kiln Dust Insufflation, and Synfuel were noted as controls already used at the plant. Both mid-kiln firing and selective noncatalytic reduction were estimated to provide emissions reductions of 20 percent resulting in actual $NO_x$ reductions of 1,283 tons/yr. The mid-kiln firing was estimated to cost $464/ton while selective noncatalytic reduction was estimated to cost approximately $2,200/ton. With identical control efficiencies both options result in modeled visibility improvements of 0.01 – 0.09 dv at the three Class I areas evaluated.

Missouri comprehensively reviewed the source's three BART analyses and determined that the mid-kiln firing of tires (using 12 percent total heat input substitution) and a switch from petroleum coke as the primary kiln fuel to 3 percent sulfur coal (along with the tire derived fuel for $NO_X$ control) would constitute BART for this source. For the $SO_2$ control, Missouri eliminated the two scrubbing options based on cost per ton of cement produced (~$15-20/ton produced.) The cost of the selected control for $SO_2$ reductions was calculated at $1,148/ton or about $3/ton cement produced. For $NO_x$ the State was concerned with the use of SNCR on the wet kiln and the MKF option provided the same control effectiveness. Thus, Missouri decided the

certainty of reductions associated with mid-kiln firing coupled with the existing controls at the facility was the best option after considering cost and certainty of available controls as provided by the kiln designer. As part of the BART analysis, Missouri required the source to pursue more aggressive emission limits than originally recommended based on the cost analysis of feasible controls. The required controls will result in a 20 percent reduction of $NO_x$ and a 27 percent reduction of $SO_2$ from the maximum thirty-day average emissions using the CEM data. The full description of the BART analysis for Holcim - Clarksville is included in the TSD accompanying this notice.

To incorporate the emission rates, compliance schedule, monitoring, recordkeeping, reporting, and enforceability requirements, as defined by the CAA and Federal regulations promulgated at 40 CFR 51.308(e)(1)(iv) and (v) as well as the BART Guidelines, the State entered into a Consent Agreement with Holcim – Clarksville on April 19, 2009. The Consent Agreement was submitted to EPA for SIP approval as part of the State's RH SIP submittal (Appendix S), which EPA is proposing to approve in this notice. The Consent Agreement is enforceable by the State, and upon approval into the State's SIP, is enforceable by EPA. The emission rates, or work practices, included in the Consent Agreement are summarized below. The Consent Agreement requires the Holcim – Clarksville Plant kiln system (Emission Point ID

EP-14 main kiln stack) to meet the following rates, or work practices, within four years after the EPA approves the State's RH SIP or expeditiously as practicable:

1) $NO_x$ – 42,287 lb/day using a thirty day rolling average
2) $SO_2$ – 58,787 lb/day using a thirty day rolling average
3) the facility must monitor using existing CEMS
4) the facility must comply with 40 CFR, Part 60, Appendix F or an equivalent procedure for quality assurance demonstrations of the CEMS
5) the facility must retain records demonstrating compliance for a period of no less than five years
6) an annual report detailing daily and thirty day rolling average $SO_2$ and $NO_x$ emission rates must be submitted to Missouri starting 1 year and 60 days after EPA SIP approval.

Missouri documented, via CALPUFF modeling, an improvement in visibility at affected Class I areas using the BART emissions limits for Holcim – Clarksville. While post-BART control modeled impacts at Mingo are still slightly above 0.5 dv, the overall modeled impairment has significantly improved with the proposed BART controls.

EPA is proposing to find that the State has met the requirements for establishing BART emission limitations and schedules for compliance with those emission limitations for

each BART-eligible source that may reasonably be anticipated to cause or contribute to any impairment of visibility in any Class I area, in accordance with 40 CFR 51.308(e) and the BART Guidelines. EPA is proposing to approve all required elements of Missouri's Regional Haze SIP related to BART for non-EGU sources, including, specifically, the BART emission rates, compliance schedules, monitoring, recordkeeping and reporting as required by 40 CFR 51.308(e) and the BART Guidelines, and the Consent Agreement for Holcim – Clarksville.

**E. Long-Term Strategy**

**1. Technical Basis for Long-Term Strategy**

Missouri's plan adequately addresses the LTS requirements of 40 CFR 51.308(d)(3)(iii). Missouri's LTS analysis 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 Missouri LTS was developed by the State, in coordination with the CENRAP RPO, through an evaluation of the following components: (1) identification of the emission units within Missouri and in surrounding states that likely have the largest impacts currently on visibility at the State's two Class I areas; (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 areas; and (4) application of the four statutory factors in the reasonable progress analysis for the identified emission units to determine if additional reasonable controls were required. In this analysis the State demonstrates that the compilation of State-specific control measures relied on by the State achieves its RPGs.

The CENRAP applied the Comprehensive Air quality Model with extensions (CAMx) and Community Multiscale Air Quality (CMAQ) models in the modeling simulation. CAMx is a computer modeling system for the integrated assessment of photochemical and particulate air pollution. CAMx incorporates all of the technical attributes demanded of state-of-the-art photochemical grid models, including two-way grid nesting, a subgrid-scale Plume-in-Grid module to treat early dispersion of chemistry of point source $NO_x$ plumes, and a fast chemistry solver. The CMAQ model is an eulerian model that simulates the atmospheric surface processes affecting the transport, transformation and deposition of air pollutants and their precursors. An eulerian model computes the numerical solution of partial differential equations of plumes on a fixed grid. The use of these models to determine impacts from emissions within state on visibility impairment is approved by EPA. Missouri documented and EPA has

reviewed the selection of the episodes, modeling domain, emissions inventories, emissions modeling, meteorological inputs, and model performance evaluation. More detailed information on methodologies is provided in Appendix F of the state's submittal.

**2. Identification of Sources and Factors to be Considered**

Missouri has met the requirements of 40 CFR 51.308(d)(3)(iv-v). The State is required to identify all anthropogenic sources of visibility impairment considered by the State in developing its LTS. The State should consider major and minor stationary sources, mobile sources, and area sources. The State must consider, at a minimum, the following factors in developing its long-term strategy: 1) emission reductions due to ongoing air pollution control programs, including measures to address reasonably attributable visibility impairment; 2) measures to mitigate the impacts of construction activities; 3) emissions limitations and schedules for compliance to achieve the reasonable progress goal; 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 emission 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.

The State's technical analysis identifies all anthropogenic sources of visibility impairment considered by the State in developing its LTS. In this analysis, the State considered the impacts from major and minor stationary sources, mobile sources, and area sources. The State documents the "on the books" ongoing emissions control strategies considered in the modeling that includes the following:

- Clean Air Interstate Rule
- Best Available Control Technology
- Tier 2 Federal Mobile Source Emission Standards
- Tier 4 Nonroad Emission Standards
- $NO_x$ SIP Call
- St. Louis PM2.5 $SO_2$ and $NO_x$ RACT
- Illinois Multi-Pollutant Regulation

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. (76 FR 82219, December 30, 2011). In that notice, we proposed a

limited disapproval of Missouri's LTS insofar as it relied on CAIR. For that reason, we are not taking action on that aspect of the long-term strategy in this notice. Comments on that proposed determination may be directed to Docket ID No. EPA-HQ-OAR-2011-0729.

In development of the LTS, Missouri also took into account measures to mitigate the impacts of construction activities through the implementation of the NSR permitting program. Source retirement and replacement schedules of sources were included in the development of the future year inventory modeling scenario. Missouri has documented that emissions limitations and control measures utilized in the modeling are enforceable by Missouri law through section 643 of the Revised Statutes of Missouri. These rules can be found in Appendix V of the State's submittal.

The emission inventory utilized for Missouri takes into account the net effect on visibility resulting from projected changes to emissions including changes to point, area and mobile source inventories by the end of the first implementation period resulting from population growth; industrial, energy and natural resources development; land management; and air pollution control. The net effect on visibility in Missouri Class I areas resulting from these emission differences is discussed in the

CENRAP Technical Support Document (Appendix F of the State's submittal).

Missouri has also met the requirement of 40 CFR 51.308(d)(3)(v)(E) to consider smoke management techniques for the purposes of agricultural and forestry management in developing the LTS. The purpose of the Smoke Management Plan (SMP) adopted by Missouri is to identify the responsibilities of MDNR, FLMs, and state land managers to coordinate procedures that mitigate the impacts on public health, safety, and visibility of prescribed fire and wildland fire used for resource benefits. This plan is designed to meet the policies of the EPA's Interim Air Quality Policy on Wildland and Prescribed Fires (April 1998) and addresses smoke management through various procedures and requirements in place at various agencies throughout the State.

**F. Coordinating Regional Haze and Reasonably Attributable Visibility Impairment (RAVI)**

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 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 Federal area of a specific landmark or panorama located outside the boundary of the mandatory Class I Federal area." Visibility in any mandatory Class I Federal area includes any integral vista associated with that area. The FLMs did not identify any integral vistas in Missouri. In addition, none of the Class I areas in Missouri is experiencing RAVI, nor are any of its sources affected by the RAVI provisions. Therefore, the Missouri regional haze SIP submittal does not explicitly address the two requirements regarding coordination of the regional haze SIP with the RAVI LTS and monitoring provisions. We propose to find that this submittal appropriately supplements and augments the Missouri's RAVI visibility provisions to address regional haze by updating the monitoring and LTS provisions as summarized in this notice.

**G. Emissions Inventory**

Missouri was required to develop a statewide emissions inventory of pollutants that are reasonably anticipated to cause or contribute to visibility impairment in any Class I area. This inventory must include baseline year emissions, emissions for the most recent year that data is available, and estimates of future year emissions. The State provided an inventory of emissions of pollutants that are reasonably anticipated to cause or contribute to visibility impairment in any Class I area. As required, the inventory includes emissions for a baseline year

(2002), the most recent year for which data are available at the time, and estimates of future year (2018) projected emissions along with a commitment to update the inventory periodically.

As specified in the EPA guidance document, *Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations* (August 2005), Missouri's regional haze emissions inventory includes carbon monoxide (CO), nitrogen oxides ($NO_x$), sulfur dioxide ($SO_2$), volatile organic compounds (VOCs), fine particulate ($PM_{2.5}$), coarse particulate ($PM_{10}$), and ammonia ($NH_3$). Missouri used the CENRAP Base G emissions inventory for both the baseline year of 2002 and future year of 2018 as described in Table 4 below. Missouri has committed to periodic updates to the emissions inventory and EPA believes that the State has met the requirements of 40 CFR 51.308(d)(4)(v). More detailed information regarding the methodologies used in the current emissions estimates including the future year projections are further described in Chapter 7.0 and Appendix H 1-8 of the State's plan.

TABLE 4 Missouri 2002-2018 Inventory

**2002 Missouri Emissions Inventory Summary**

| Source Sector | $NO_x$ (TPY*) | $SO_2$ (TPY) | $PM_{10}$ (TPY) | $PM_{2.5}$ (TPY) | CO (TPY) | VOC (TPY) | $NH_3$ (TPY) |
|---|---|---|---|---|---|---|---|
| Point EGU** | 145,437.9 | 272,128.1 | 4,093.2 | 2,523.2 | 11,357.0 | 1,796.4 | 19.2 |
| Point NEGU*** | 36,143.8 | 97,117.0 | 15,092.2 | 7,045.3 | 107,756.3 | 38,473.6 | 6,233.9 |
| Area | 31,337.8 | 48,510.9 | 29,975.9 | 26,385.8 | 135,292.9 | 204,940.2 | 2,276.7 |
| Offroad Mobile | 99,305.6 | 9,350.5 | 13,063.5 | 11,985.3 | 754,272.8 | 141,183.3 | 73.9 |
| Onroad Mobile | 189,852.3 | 5,353.5 | 4,486.6 | 3,297.4 | 1,585,277.1 | 97,245.6 | 5,993.5 |
| Fire | 3,539.6 | 936.2 | 12,407.2 | 10,642.3 | 151,389.6 | 12,867.9 | 1,447.2 |
| Ag and Soil Ammonia | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 152,904.1 |
| Fugitive Dust | 0.0 | 0.0 | 95,240.0 | 19,006.9 | 0.0 | 0.0 | 0.0 |
| Road Dust | 0.0 | 0.0 | 367,390.3 | 55,011.6 | 0.0 | 0.0 | 0.0 |
| Biogenics | 22,518.6 | 0.0 | 0.0 | 0.0 | 134,123.4 | 1,428,260.0 | 0.0 |
| Totals | 528,135.5 | 433,396.3 | 541,748.9 | 135,897.8 | 2,879,469.2 | 1,924,767.1 | 168,948.5 |

**2018 Missouri Emissions Inventory Summary**

| Source Sector | $NO_x$ (TPY) | $SO_2$ (TPY) | $PM_{10}$ (TPY) | $PM_{2.5}$ (TPY) | CO (TPY) | VOC (TPY) | $NH_3$ (TPY) |
|---|---|---|---|---|---|---|---|
| Point EGU | 84,619.8 | 289,330.1 | 18,958.2 | 17,036.6 | 15,752.7 | 2,080.5 | 874.4 |
| Point NEGU | 49,290.8 | 66,731.1 | 23,598.8 | 10,171.7 | 184,350.9 | 54,908.6 | 8,600.2 |
| Area | 35,212.8 | 49,726.1 | 29,193.0 | 25,528.5 | 120,114.9 | 265,737.4 | 4,411.8 |
| Offroad Mobile | 59,624.9 | 565.2 | 8,371.3 | 7,675.0 | 739,932.9 | 72,794.1 | 84.8 |
| Onroad Mobile | 50,860.9 | 797.4 | 1,415.5 | 1,415.5 | 895,481.6 | 39,672.3 | 8,316.0 |
| Fire | 3,539.6 | 936.2 | 12,407.2 | 10,642.3 | 151,389.6 | 12,867.9 | 1,447.2 |
| Ag and Soil Ammonia | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 182,451.5 |
| Fugitive Dust | 0.0 | 0.0 | 106,045.3 | 21,147.2 | 0.0 | 0.0 | 0.0 |
| Road Dust | 0.0 | 0.0 | 313,576.4 | 46,957.9 | 0.0 | 0.0 | 0.0 |
| Biogenics | 22,518.6 | 0.0 | 0.0 | 0.0 | 134,123.4 | 1,428,260.0 | 0.0 |
| TOTALS | 305,667.4 | 408,086.1 | 513,565.8 | 140,574.6 | 2,241,146.0 | 1,876,320.7 | 206,185.9 |

* Tons Per Year
** Electric Generating Unit
*** Non-Electric Generating Unit

## H. Monitoring Strategy

The State's plan must include a monitoring strategy for measuring, characterizing, and reporting of regional haze visibility impairment that is representative of all Class I

areas within the State and/or summarize monitoring strategy of States with affected Class I areas. Missouri demonstrates compliance with this requirement through participation in the IMPROVE network. In Missouri, IMPROVE sites are located at Hercules Glades and Mingo Class I areas. An IMPROVE protocol sampler is located at the site near El Dorado Springs. Missouri commits to meet the requirements under 40 CFR 51.308(d)(4)(iv) to report to EPA visibility data for each of Missouri's Class I areas annually. EPA proposes to find that Missouri's monitoring strategy meets all requirements of 40 CFR 51.308(d)(4).

**I. Consultation**

The State of Missouri has met the FLM consultation requirement. 40 CFR 51.308(i)(3) requires that States provide a description of how they addressed any comments provided by the FLMs. A description of the consultation process is provided in Appendix E of the State SIP, *United States Central Class I Areas Consultation Plan*, Missouri Department of Natural Resources, 2007. In addition, the minutes from those meetings are in Appendix U of the State's plan. EPA believes that Missouri has adequately responded to the comments received from the FLMs and from EPA.

Regional haze SIPs must also provide procedures for continuing consultation between the State and FLMs on the implementation of 40 CFR 51.308, including development and

review of SIP revisions and five-year progress reports, and on the implementation of other programs having the potential to contribute to impairment of visibility in Class I areas. The State of Missouri has committed to continuing to coordinate and consult with the FLMs during the development of future progress reports and plan revisions, as well as during the implementation of programs having the potential to contribute to visibility impairment in the mandatory Class I Federal areas. EPA proposes to find that the State of Missouri has satisfied the consultation requirements of 40 CFR 51.308 (i).

As discussed in IV. E above, the as part of the long-term strategy requirements of the rule, provision 40 CFR 51.308(d)(3)(i) specifically describes that, where the State has emissions that are reasonably anticipated to contribute to visibility impairment in any Class I area located in another State or States, the State must consult with other State(s) in order to develop coordinated emissions management strategies. The State must consult with any other State having emissions that are regionally anticipated to contribute to visibility impairment in any mandatory Class I Federal area within the State. Further, 40 CFR 51.308(d)(3)(ii) states that where other States cause or contribute to impairment in a mandatory Class I Federal area, the State must demonstrate that it has included in its implementation plan all measures necessary to

obtain its share of the emissions reductions needed to meet the progress goal for the area. If the State has participated in a regional planning process, the State must ensure it has included all measures needed to achieve its apportionment of emission reduction obligations agreed upon through that process.

EPA proposes that Missouri has met these requirements. Missouri has consulted with other States/tribes in CENRAP, Visibility Improvement State and Tribal Association of the Southeast (VISTAS), the Midwest Regional Planning Organization (MRPO), FLMs and EPA Regions 5, 6 and 7 on development of coordinated strategies for Central Class I areas that include Mingo, Hercules Glades, Upper Buffalo, and Caney Creek.

Technical analyses, such as Area of Influence (AOI) and source apportionment, were developed as part of consultation planning to determine contributing states and are documented in Appendix E of the State's plan. Missouri provided the Regional Haze Plan to the FLMs for review on August 23, 2007, and notified the FLMs that a public hearing would be held on this plan at a later date. The FLMs provided early comments on the draft plan and a conference call between Missouri, FLMs, and EPA Region 7 was conducted on September 2, 2007, to discuss the comments. Missouri considered all comments the FLMs provided on the early draft of the plan. Regional modeling and other findings were used to develop RPGs for the Arkansas and Missouri

Class I areas based on the existing and proposed controls through both State and Federal requirements. It was also determined that these RPGs will meet the established URP goals by 2018. The consultation process determined which States significantly impacted the Arkansas and Missouri Class I areas. The State's coordination with FLMs on long-term strategy development is described in Chapter 11 of the State's plan. The consultation was completed based on a determination that reasonable progress was achieved by contributing states.

Additionally, the State entered into a consultation process with Oklahoma and Minnesota. The consultation processes for the Wichita Mountains (WIMO) Class I area in Oklahoma was completed prior to the August 5, 2009 submittal of this plan. The Oklahoma Department of Environmental Quality indicated their belief that Missouri sources impact WIMO. However, in response to the Oklahoma consultation letter, Missouri replied with a letter recommending that the rationale for determining States contributing to impact on WIMO deserved further examination. As further described in Chapter 4.2 of the State's plan, Missouri determined, in part, from a Particulate Matter Source Apportionment Technology (PSAT) analysis that it is not clear that additional controls in Missouri would be reasonable to address visibility in WIMO. Based on the PSAT analysis presented, Missouri described that over half the elevated point-

source impacts to WIMO are due to sources in Oklahoma, Texas, and Louisiana and most of the area source impacts are due to Oklahoma and Texas sources. Missouri determined that controls appear likely to be more efficient in those states, on a cost-per-ton basis, than additional controls in Missouri. Therefore no additional controls on Missouri sources were required and Oklahoma and did not request any specific additional controls.

Minnesota identified Missouri as a contributing State based on Lake Michigan Air Directors Consortium (LADCO) 2002-2003 Trajectory analysis or LADCO 2018 PSAT modeling analysis which showed over a 5 percent total contribution to haze at either of Minnesota's Class I areas. Missouri noted that the criteria are met marginally at 5.2 percent for 2018 PSAT for the Boundary Waters area only. Missouri cited that separate analyses conducted as part of the Causes of Haze II Study, and affirmed by the CENRAP PSAT and Area of Influence analysis, indicate high impact from Minnesota sources, with only a small impact by out of state sources. Based on these analyses, Missouri concluded that additional controls on Missouri's sources are not necessary due to the expected minimal visibility impact at the Boundary Waters Class I area. EPA also notes that Minnesota did not request any specific additional controls from Missouri. EPA proposes that Missouri has met the consultation requirements of 40 CFR 51.308(d)(1)(iv) and has also demonstrated that its

implementation plan includes all measures necessary to obtain its fair share of emission reductions needed to meet RPGs as required in 40 CFR 51.308(d)(3)(ii).

**J. Periodic SIP Revisions and Five-Year Progress Reports**

Missouri is required to commit to meet the SIP revision schedule as determined by the RHR. The State makes its commitment to meet this requirement in Chapter 11 and 12 of its plan. EPA believes the State's commitment to meet these schedules meets the requirements of 40 CFR 51.308(f) and (g) of the RHR.

The State 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 Missouri regional haze SIP. The report will evaluate the progress made towards the RPGs each mandatory Class I area located within the State of Missouri and in each mandatory Class I area located outside of the State which may be affected by emissions from within Missouri.

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

## VI. What Action is EPA Proposing?

EPA is proposing a limited approval of a revision to the Missouri SIP submitted by the State of Missouri on August 5, 2009, and supplemented on January 30, 2012. In a separate action, EPA has proposed a limited disapproval of the Missouri 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. 76 FR 82219. We are not proposing to take action in today's rulemaking on issues associated with Missouri's reliance on CAIR in its regional haze SIP.

## VII. 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 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. U.S. EPA, 427 U.S. 246, 255-66 (1976); 42 U.S.C. 7410(a)(2).

**D. Unfunded Mandates Reform Act**

Under sections 202 of the Unfunded Mandates Reform Act 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 the approval action proposed 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

Section 12 of the National Technology Transfer and Advancement Act (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: Karl Brooks

Karl Brooks,
Regional Administrator,
Region 7.

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