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## Environmental Protection Agency

40 CFR Part 52
Approval and Promulgation of Air Quality Implementation Plans; Michigan; Regional Haze State Implementation Plan; Federal Implementation Plan for Regional Haze; Proposed Rule

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 52**

**[EPA–R05–OAR–2010–0954; FRL–9709–1]**

## Approval and Promulgation of Air Quality Implementation Plans; Michigan; Regional Haze State Implementation Plan; Federal Implementation Plan for Regional Haze

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** EPA is proposing a limited approval and a limited disapproval of a revision to the Michigan State Implementation Plan (SIP) submitted by the State of Michigan on November 5, 2010, that addresses regional haze for the first implementation period ending in 2018. EPA is proposing limited approval of this submittal for meeting requirements of the regional haze program relating to setting reasonable progress goals, providing reductions for meeting those goals, and for mandating best available retrofit technology (BART) for most sources in the State. EPA is proposing limited disapproval of the State's submittal for failing to satisfy BART for two sources. EPA is proposing a Federal Implementation Plan (FIP) including nitrogen oxide ($NO_X$) emission limits on these two sources to satisfy these requirements.

EPA has already published a separate action in relation to Michigan's plan to address BART for electric generating units. In a June 7, 2012, action, EPA published a limited disapproval of the regional haze plans for Michigan and other states due to their reliance on the Clean Air Interstate Rule (CAIR), but EPA also promulgated a FIP relying on EPA's Cross-State Air Pollution Rule (CSAPR) to address these requirements. EPA is also taking separate action on BART requirements for one source, a taconite plant owned by Tilden Mining, in conjunction with action on several taconite plants in Minnesota. These three actions combined represent complete action on Michigan's regional haze plan for the first implementation period.

**DATES:** Comments must be received on or before September 5, 2012. Upon request, a public hearing for this proposal will be held on September 19, 2012, at the Traverse Area District Library at 610 Woodmere Avenue, Traverse City, Michigan. Requests for a public hearing must be submitted by September 5, 2012 and shall be submitted to Pamela Blakley at *blakley.pamela@epa.gov* or by any of the other means for submitting comments given in the addressee section below. The public hearing, if requested, will be held from 9 a.m. until 11 a.m. or until all parties present have had the opportunity to speak. EPA shall maintain a Web site at *http://www.epa.gov/region5/mihaze/index.html* at which EPA will report whether a hearing has been requested and will be held. Interested parties may also call Charles Hatten, at 312–886–6031, to inquire whether a hearing will be held.

The public hearing will provide interested parties the opportunity to present information and opinions to EPA concerning our proposal. Interested parties may also submit written comments, as discussed in the proposal. Written statements and supporting information submitted during the comment period will be considered with the same weight as oral comments and supporting information presented at the public hearing. We will not respond to comments during the public hearing. When we publish our final action, we will provide written responses to all oral and written comments received on our proposal.

At the public hearing, the hearing officer may limit the time available for each commenter to address the proposal to 5 minutes or less if the hearing officer determines it to be appropriate. We will not be providing equipment for commenters to show overhead slides or make computerized slide presentations. Any person may provide written or oral comments and data pertaining to our proposal at the Public Hearing. Verbatim transcripts, in English, of the hearing and written statements will be included in the rulemaking docket.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA–R05–OAR–2010–0954, by one of the following methods:

1. *www.regulations.gov:* Follow the on-line instructions for submitting comments.
2. *Email: blakley.pamela@epa.gov.*
3. *Fax:* (312) 692–2450.
4. *Mail:* Pamela Blakley, Chief, Control Strategies Section, Air Programs Branch (AR–18J), U.S. Environmental Protection Agency, 77 West Jackson Boulevard, Chicago, Illinois 60604.
5. *Hand Delivery:* Pamela Blakley, Chief, Control Strategies Section, Air Programs Branch (AR–18J), U.S. Environmental Protection Agency, 77 West Jackson Boulevard, Chicago, Illinois 60604. Such deliveries are only accepted during the Regional Office normal hours of operation, and special arrangements should be made for deliveries of boxed information. The Regional Office official hours of business are Monday through Friday, 8:30 a.m. to 4:30 p.m., excluding Federal holidays.

*Instructions:* Direct your comments to Docket ID No. EPA–R05–OAR–2010–0954. 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 information that you consider to be CBI or otherwise protected through *www.regulations.gov* or email. The *www.regulations.gov* Web site 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 email comment directly to EPA without going through *www.regulations.gov* your email 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 instructions on submitting comments, go to Section I of the **SUPPLEMENTARY INFORMATION** section of this document.

*Docket:* All documents in the docket are listed in the *www.regulations.gov* index. Although listed in the index, some information is not publicly available, *e.g.,* CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *www.regulations.gov* or in hard copy at the Environmental Protection Agency, Region 5, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. This facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding Federal holidays. We recommend that you telephone Charles Hatten at (312) 886–6031 before visiting the Region 5 office.

**FOR FURTHER INFORMATION CONTACT:** Charles Hatten, Environmental Engineer, Control Strategies Section, at 312–886–6031, *hatten.charles@epa.gov,* regarding all elements of the action, or John Summerhays, Environmental Scientist, Attainment Planning and Maintenance Section, at 312–886–6067, *summerhays.john@epa.gov,* regarding issues relating to BART. Both contacts may be reached by mail at Air Programs Branch (AR–18J), Environmental Protection Agency, Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604.

**SUPPLEMENTARY INFORMATION:**

## Table of Contents

I. What should I consider as I prepare my comments for EPA?
II. What is the background for EPA's proposed action?
A. The Regional Haze Problem
B. Regional Haze Requirements
C. Roles of Agencies in Addressing Regional Haze
III. What are the requirements for regional haze SIPs?
A. Determination of Baseline, Natural, and Current Visibilty Conditions
B. Determination of Reasonable Progress Goals
C. BART
D. Long Term Strategy
E. Coordinating Regional Haze and RAVI
F. Monitoring Strategy and Other Implementation Plan Requirements
G. Consultation With States and Federal Land Managers
IV. What is EPA's analysis of Michigan's regional haze plan?
A. Class I Areas
B. Baseline, Current, and Natural Conditions
C. Reasonable Progress Goals
D. BART
E. Long Term Strategy
F. Monitoring Strategy
G. Comments
V. What are EPA's proposed BART determinations?
A. Saint Mary's Cement
B. NewPage Paper
VI. What actions is EPA proposing?
VII. Statutory and Executive Order Reviews

## I. What should I consider as I prepare my comments for EPA?

When submitting comments, remember to:

1. Identify the rulemaking by docket number and other identifying information (subject heading, **Federal Register** date and page number).
2. Follow directions—EPA may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
3. Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.
4. Describe any assumptions and provide any technical information and/or data that you used.
5. If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
6. Provide specific examples to illustrate your concerns, and suggest alternatives.
7. Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
8. Make sure to submit your comments by the comment period deadline identified.

## 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 that emit fine particles ($PM_{2.5}$) (*e.g.,* sulfates, nitrates, organic particles, elemental carbon, and soil dust) and their precursors—sulfur dioxide ($SO_2$), $NO_X$, and in some cases ammonia ($NH_3$) and volatile organic compound (VOCs). $PM_{2.5}$ precursors react in the atmosphere to form fine particulate matter. Aerosol $PM_{2.5}$ impairs visibility by scattering and absorbing light. Visibility impairment reduces clarity and the distance 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, the distance at which an object is barely discernable, in many Class I areas [1] in the western United States is 100–150 kilometers. That is about one-half to two-thirds of the visual range that would exist without anthropogenic air pollution. In the eastern and midwestern Class I areas of the United States, the average visual range is generally less than 30 kilometers, or about one-fifth of the visual range that would exist under estimated natural conditions. See 64 FR 35715 (July 1, 1999).

### *B. Regional Haze Requirements*

In section 169A of the Clean Air Act as amended in 1977, Congress created a program for protecting visibility in the nation's national parks and wilderness areas. This section of the Clean Air Act 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 which impairment results from manmade air pollution.'' On December 2, 1980, EPA promulgated regulations to address visibility impairment in Class I areas that is ''reasonably attributable'' to a single source or small group of sources known as, ''reasonably attributable visibility impairment'' (RAVI). 45 FR 80084. These regulations, codified at 40 CFR part 50, subpart P, represented the first phase in addressing visibility impairment. EPA deferred action on regional haze that emanates from a variety of sources until monitoring, modeling, and scientific knowledge about the relationships between pollutants and visibility impairment were improved.

Congress added section 169B to the Clean Air Act in 1990 to address regional haze issues, and EPA promulgated the regional haze rule on July 1, 1999 (64 FR 35713). The regional haze rule, which amended 40 CFR part 50, subpart P, integrated provisions addressing regional haze impairment into the existing visibility regulations and established a comprehensive visibility protection program for Class I areas. The regional haze requirements, found at 40 CFR 51.308 and 51.309, are a part of EPA's subpart P 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 plan applies to all 50 states, the District of Columbia, and the Virgin Islands. The first regional haze plans were due December 17, 2007.

[1] 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 Clean Air Act, 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 Clean Air Act 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). The term ''Class I area'' means a ''mandatory Class I Federal area.''

*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. Pollution affecting the air quality in Class I areas can be transported over long distances, even hundreds of kilometers. Therefore, effectively addressing the problem of visibility impairment in Class I areas means that states need to develop coordinated strategies that take into account the effect of emissions from one jurisdiction on the air quality in another.

EPA has encouraged the states and tribes to address visibility impairment from a regional perspective because the pollutants that lead to regional haze can originate from sources located across broad geographic areas. 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 $PM_{2.5}$ and other pollutants that lead to regional haze.

The Midwest RPO (MRPO) is a collaborative effort of state 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 Midwest. The member states are Illinois, Indiana, Michigan, Ohio, and Wisconsin.

**III. What are the requirements for regional haze SIPs?**

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

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

The regional haze rule establishes the deciview (dv) as the principal metric or unit for expressing visibility impairment. The deciview is used in expressing reasonable progress goals, defining baseline, current, and natural conditions, and tracking changes in visibility. This visibility metric expresses uniform proportional changes in haziness in terms of common increments across the entire range of visibility conditions, from pristine to extremely hazy. Visibility expressed in deciviews is determined by using air quality measurements to estimate light extinction and then transforming the value of light extinction using a logarithm function. The deciview is a more useful measure for tracking progress in improving visibility than light extinction itself because each deciview change is an equal incremental change in visibility perceived by the human eye. Most people can detect a change in visibility at one deciview. The preamble to the regional haze rule provides additional details about the deciview. 64 FR 35714 (July 1, 1999).

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 is submitted and at the progress review every five years, midway through each 10-year implementation period. The regional haze rule requires states with Class I areas (Class I 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 its Class I areas. Each state 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 *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 plans, the ''baseline visibility conditions'' are the starting points for assessing ''current'' visibility impairment. Baseline visibility conditions represent the degree of visibility impairment for the 20 percent best days and 20 percent worst 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 comparisons of subsequent conditions against baseline conditions will indicate the amount of progress made. In general, the 2000 to 2004 baseline period is considered the time from which improvement in visibility is measured.

*B. Determination of Reasonable Progress Goals*

The national goal of the regional haze rule is a return to natural conditions such that anthropogenic sources of air pollution would no longer impair visibility in Class I areas. The regional haze plans must contain measures that ensure ''reasonable progress'' toward the national goal of preventing and remedying visibility impairment in Class I areas caused by anthropogenic air pollution. The vehicle for ensuring continuing progress towards achieving the natural visibility goal is the submission of a series of regional haze plans that for each approximately 10-year implementation period establish two distinct reasonable progress goals: one for the best days and one for the worst days for every Class I area. The regional haze rule 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 visibility conditions. In setting reasonable progress goals, a state with a mandatory Class I area (Class I state) must provide for an improvement in visibility for the worst days over the approximately 10-year period of the SIP and ensure no degradation in visibility for the best days.

Class I states have significant discretion in establishing reasonable progress goals, but in establishing a reasonable progress goal for any mandatory Class I area are required to consider the following factors

established in section 169A of the Clean Air Act and in EPA's regional haze rule 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. The Class I states must demonstrate in their plans how they considered these factors when selecting the reasonable progress goals for the best and worst days for each 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, Regions 1–10 (pp.4–2, 5–1). In setting the reasonable progress goals, states must also consider the rate of progress needed to reach natural visibility conditions by 2064 (''uniform rate of progress'' or ''glide path'') and the emissions reduction needed to achieve that rate of progress over the approximately 10-year period of the regional haze plan. In setting reasonable progress goals, each Class I state must also consult with potentially contributing states, *i.e.* those states that may affect visibility impairment at its Class I state's areas. 40 CFR 51.308(d)(1)(iv).

*C. BART*

Section 169A of the Clean Air Act directs states to evaluate the use of retrofit controls at certain types of major stationary sources to address visibility impacts from these sources. Specifically, Clean Air Act section 169A(b)(2) and EPA's implementing regulations at 40 CFR 51.308(e) require 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 built between 1962 and 1977 procure, install, and operate BART as determined by the state. The set of ''major stationary sources'' potentially subject to BART is listed in Clean Air Act 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 (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. Section IV(F)(1) of the BART Guidelines provides that a state must use the approach in the BART Guidelines in making a BART determination for a fossil fuel-fired electric generating unit (EGU) with total generating capacity in excess of 750 megawatts. States are encouraged, but not required, to follow the BART Guidelines in making BART determinations for other sources.

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

States may select de minimis impact levels under the BART Guidelines, below which a BART-eligible source may be considered to have a small enough contribution to visibility impairment in any Class I area to warrant being exempted from the BART requirement. The state must document this exemption threshold value in the SIP and must state the basis for its selection of that value. The exemption threshold set by the state should not be higher than 0.5 dv. 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 each source's impact.

The state must document its BART control determination analyses. In making BART determinations, section 169A(g)(2) of the Clean Air Act requires the state to 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.

A regional haze SIP must include source-specific BART emission limits and compliance schedules for each source subject to BART. The plan must require that BART controls be installed and placed in operation as expeditiously as practicable, but no later than five years after the date of EPA approval of the state's regional haze SIP. Clean Air Act section 169A(g)(4); 40 CFR 51.308(e)(1)(iv). In addition to what is required by the regional haze rule, 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.

The regional haze rule also allows states to implement an alternative program in lieu of BART if a state can demonstrate that the alternative program will achieve greater progress toward the national visibility goal than implementing BART controls. EPA made such a demonstration for CAIR in regulations issued in 2005 which revised the regional haze program. 70 FR 39104 (July 6, 2005). EPA's regulations provided that states participating in the CAIR trading program under 40 CFR part 96 pursuant to an EPA-approved CAIR SIP or which remain subject to the CAIR 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). CAIR is not applicable to emissions of PM, so states were required to conduct a BART analysis for PM emissions from EGUs subject to BART for that pollutant.

However, in 2008, the United States Court of Appeals for the District of Columbia Circuit held that CAIR was inconsistent with the requirements of the Clean Air Act and remanded the rule to EPA. See *North Carolina* v. *EPA,* 550 F.3d 1176 (DC Cir. 2008). The Court left CAIR in place until the Agency replaced it. *Id.* EPA replaced CAIR with CSAPR in August 2011.

On June 7, 2012, EPA found that the trading programs in CSAPR would achieve greater reasonable progress towards the national goal than would be obtained by implementing BART for $SO_2$ and $NO_X$ for BART-subject EGUs in the area subject to the Transport Rule. 77 FR 33642. Based on this finding, EPA revised the regional haze plans of Michigan and other states to meet the requirements of BART for $SO_2$ and $NO_X$ for EGUs by participation in the trading programs under the Transport Rule.

*D. Long Term Strategy*

Consistent with the requirement in section 169A(b) of the Clean Air Act that states include in their regional haze SIP a 10- to 15-year strategy for making reasonable progress, 51.308(d)(3) requires that states include a long term strategy in their regional haze SIPs. The long term strategy is the compilation of all control measures a state will use during the implementation period of the specific SIP submission to meet applicable reasonable progress goals. The long term strategy 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).

The regional haze rule requires that, 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 impacted state must coordinate with the contributing states 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 reasonable progress goals for the Class I area. The RPOs have provided forums for significant interstate consultation, but additional consultations between states may be required to address interstate visibility issues sufficiently.

States should consider all types of anthropogenic sources of visibility impairment in developing their long term strategies, including stationary, minor, mobile, and area sources. At a minimum, states must describe how they have taken each of the seven factors listed below into account in developing their long term strategies. The seven factors are: (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 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 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 long term strategy. 40 CFR 51.308(d)(3)(v).

*E. Coordinating Regional Haze and RAVI*

As part of the regional haze rule, EPA revised 40 CFR 51.306(c), regarding the long term strategy 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 in accordance with 40 CFR 51.308(b) and (c). The state must revise its plan to provide for review and revision of a coordinated long term strategy for addressing RAVI and regional haze on or before this date. It must also submit the first such coordinated long term strategy with its first regional haze SIP. Future coordinated long term strategies, and periodic progress reports evaluating progress towards reasonable progress goals, 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 long term strategy must be submitted to EPA as a SIP revision and report on both regional haze and RAVI impairment.

*F. Monitoring Strategy and Other Implementation Plan Requirements*

The regional haze rule at 40 CFR 51.308(d)(4) 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, meaning that the state reviews and uses monitoring data from the network. The monitoring strategy must also provide for additional monitoring sites if the IMPROVE network is not sufficient to determine whether reasonable progress goals will be met. The monitoring strategy is due with the first regional haze SIP and it must be reviewed every five years.

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 that 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;
- 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 with available data, and 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 regional haze rule at 40 CFR 51.308(f) requires that states submit control strategies to cover an initial implementation period extending to the year 2018, with a comprehensive reassessment and revision addressing the core requirements of section 51.308(d) (not including BART) every 10 years thereafter. The requirement to evaluate sources for BART applies only to the first regional haze SIP. Facilities subject to BART must continue to comply with the BART provisions of section 51.308(e). Periodic SIP revisions will assure that the statutory requirement of reasonable progress will continue to be met.

*G. Consultation With States and Federal Land Managers*

The regional haze rule requires that states consult with Federal Land Managers (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 60 days prior to holding any public hearing on the SIP. This consultation must include the opportunity for the FLMs to discuss their assessment of impairment of visibility in any Class I area and to offer recommendations on the development of the reasonable progress goals 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 Michigan's regional haze plan?

Michigan submitted its regional haze plan on November 5, 2010, which included requested revisions to the Michigan SIP to address regional haze.

*A. Class I Areas*

States are required to address regional haze affecting Class I areas within a

state and in Class I areas outside the state that may be affected by that state's emissions. 40 CFR 51.308(d). Michigan has two Class I areas, Isle Royal National Park and the Seney Wilderness Area, within the state. Michigan is responsible for developing a regional haze plan that addresses these Class I areas and for consulting with states that affect its areas as well as for addressing its impact on Class I areas in other states.

Michigan reviewed technical analyses conducted by MRPO and other RPOs to determine what Class I areas outside the state are affected by Michigan emission sources. MRPO conducted both a back trajectory analysis and modeling to determine the effects of its states' emissions. Michigan also used assessments by MANE–VU, the regional planning organization for Northeastern and Mid-Atlantic states. The conclusion from these technical analyses is that Michigan emissions affect five Class I areas outside Michigan. These affected Class I areas are: Acadia National Park and Moosehorn Wilderness Area in Maine; Great Gulf Wilderness Area in New Hampshire; Brigantine Wilderness Area in New Jersey; and the Lye Brook Wilderness Area in Vermont. Michigan has thereby satisfied the requirement to identify the Class I areas it affects.

*B. Baseline, Current, and Natural Conditions*

The regional haze rule requires Class I states to determine the baseline, current, and natural conditions for their Class I areas. This information defines the rate of visibility improvement that would represent linear progress toward elimination of anthropogenic visibility impairment by 2064, also known as the uniform rate of progress, and helps the states define their reasonable progress goals.

Natural background visibility is estimated by calculating the expected light extinction using estimates of natural concentrations of pollutants adjusted by an estimate of humidity. EPA allows states to use either an original IMPROVE algorithm or a refined IMPROVE algorithm. Michigan used the refined IMPROVE algorithm.

Data from 2000 to 2004 were used to calculate the impairment on the 20 percent best and 20 percent worst visibility days at Isle Royale National Park and Seney Wilderness Area. The goal of the regional haze program is to achieve natural conditions by 2064. Table 1 shows the baseline conditions and natural conditions that Michigan determined for both Isle Royale and Seney for both the 20 percent most impaired days and the 20 percent least impaired days, as well as showing the calculation of the visibility that would be achieved by 2018 under the scenario of achieving the targeted uniform rate of progress.

TABLE 1—BASELINE, NATURAL, AND LINEAR PROGRESS VISIBILITY VALUES

| 20 percent most impaired visibility | Isle Royale | Seney |
|---|---|---|
| Baseline conditions | 21.59 dv | 23.37 dv. |
| Natural conditions | 12.36 dv | 12.65 dv. |
| Difference | 9.23 dv | 11.50 dv. |
| Annual difference with linear progress | 0.15 dv | 0.19 dv. |
| 2018 value with linear progress | 19.43 dv | 21.64 dv. |
| 20 percent least impaired days | | |
| Baseline conditions | 6.77 dv | 7.14 dv. |
| Natural conditions | 3.72 dv | 3.73 dv. |

Michigan does not expect degradation of the visibility on 20 percent best days, so no calculation is needed as the 2018 goals match the baseline. EPA's Reasonable Progress Guidance states that the uniform rate of progress is not a presumptive target for the reasonable progress goal. Class I states can set the reasonable progress goal at the uniform rate of progress or it can set the reasonable progress goal at greater or lesser visibility impairment.

*C. Reasonable Progress Goals*

Class I states must set reasonable progress goals that achieve reasonable progress toward achieving natural visibility conditions. Michigan consulted with Class I states on the development of reasonable progress goals through its participation in MRPO. MRPO facilitated consultations with other Midwest states and with states in other regions through inter-RPO process. By coordinating with the MRPO and other RPOs, Michigan has worked to ensure that it achieves its fair share of overall emission reductions necessary to achieve the reasonable progress goals of Class I areas that it affects, including Isle Royale and Seney Wilderness Area.

Michigan, the MRPO, and the Northern Class I consultation group worked together to establish reasonable progress goals. These groups first identified and prioritized sources that contribute to the worst visibility days and to establish the relative visibility impairment affects. The group determined that the priority emission sources are $SO_2$ point sources, $NO_X$ from both point and mobiles sources, and ammonia from agricultural operations. EC/R, Incorporated (ECR), a contractor for the MRPO, further evaluated these sources on a three-state and nine-state basis. Michigan identified regional $SO_2$ emissions from EGUs as a key contributor to visibility impairment for Isle Royale National Park and Seney Wilderness Area. Michigan's regional haze plan identified the top ten contributing in-state sources to visibility impairment at Isle Royale and at Seney based on modeling and on the ratio of emissions to distance (''Q/d''). (See Tables 10.3.2.a and 10.3.2.b in Michigan's submittal, addressing Isle Royale and Seney, respectively.) Michigan also provided list of the top 30 facilities, including facilities both within and outside the state, ranked according to their impacts on Isle Royale and Seney. (See Tables 10.3.2.c and 10.3.2.d in Michigan's submittal, addressing Isle Royale and Seney, respectively.)

The second step of the process was to identify control options for the priority sources. Michigan, the MRPO, and the Northern Class I consultation group identified existing control measures including CAIR, BART, Maximum Achievable Control Technology (MACT) standards, on-road mobile source programs, and non-road mobile source programs. MRPO examined different potential control scenarios, including two control levels for EGUs and two control levels for industrial, commercial, and institutional (ICI) boilers.

The third step of the process was to assess the effect of existing control programs on priority sources. The impact of existing programs is discussed

in the ECR report. Table 2, below, replicated from Table 10.3.2.e. of Michigan's haze plan, which in turn used results from the ECR report, indicates results of the four factors for already existing controls.

TABLE 2—SUMMARY OF MICHIGAN'S FOUR-FACTOR ANALYSIS OF ON-THE-BOOKS CONTROLS

| | Factor 1 | Factor 2 | | | | Factor 3 | | Factor 4 |
|---|---|---|---|---|---|---|---|---|
| Control strategy | Cost effectiveness ($/ton) | Percent emission reductions from 2002 baseline in 2018 | | Percent emission reductions from 2002 baseline at full implementation | | Energy | Solid waste produced (1000 tons/yr) | Remaining useful life |
| CAIR and other cap-trade programs (e.g., acid rain, $NO_X$ SIP call. | $720–$2,600 | 3-state $SO_2$:<br>$NO_X$:<br>9-state $SO_2$:<br>$NO_X$: | 13%<br>75%<br>34%<br>79% | 3-state $SO_2$:<br>$NO_X$:<br>9-state $SO_2$:<br>$NO_X$: | 47%<br>75%<br>48%<br>80% | 4.5% of total energy consumed. | 2,383 | The IPM model projects that 53 units will retire by 2018. |
| BART: Based on Company BART analyses from MN and ND for non-EGUs. | $248–$1,770. | | | | | | | |
| Combustion MACTs | $1,477–$7,611 | 9-state $SO_2$:<br>$NO_X$: | 10%<br>5% | 9-state $SO_2$:<br>$NO_X$: | 10%<br>5%. | | | |
| Highway vehichle programs | $1,300–$2,300 | 3-state $NO_X$:<br>9-state $SO_2$: | 83%<br>80% | 3-state $NO_X$:<br>9-state $SO_2$: | 83%.<br>80%. | | | |
| Nonroad mobile sources | ($1,000)–$1,000 | 3-state $NO_X$:<br>9-state $SO_2$: | 39%<br>27% | 3-state $NO_X$:<br>9-state $SO_2$: | 39%<br>27%. | 350 MM gallons of fuel saved. | | |

Table 3, replicated from Table 10.3.2.f of Michigan's submittal, shows the change in deciview predicted from already existing controls, including CAIR.

TABLE 3—COMPARISON OF THE UNIFORM RATE OF PROGRESS (URP) IN 2018 WITH PROJECTED IMPACTS FOR EXISTING CONTROLS

| | Estimated visibility impairment on the 20% worst visibility days (deciviews) [a] | | | |
|---|---|---|---|---|
| | Boundary waters | Voyageurs | Isle Royale Nat'l Park | Seney Wilderness |
| Baseline conditions (2000–2004) | 19.86 | 19.48 | 21.62 | 24.48 |
| Projected conditions in 2018 with on-the-books controls [b] | 18.94 | 19.18 | 20.04 | 22.38 |
| Net change | 0.92 | 0.30 | 1.58 | 2.1 |
| Glide path/URP | 17.7 | 17.56 | 19.21 | 21.35 |

[a] The baseline condition values reflect the recent adjustments proposed by the Midwest RPO to include several missing days. The adjusted values are, on average, less than 0.5 dv greater than those provided on the IMPROVE Web site.

[b] Based on CAMX modeling by the MRPO. These modeling analyses used preliminary estimates of the impacts of BART controls, which are generally larger than the impacts estimated in industry BART analyses.

The fourth step of the process is to evaluate which control options may be reasonable for priority sources. Again, many of the sources were evaluated in the ECR report. The northern Class I areas Consultation Group further considered the MRPO EGU scenario with limits on EGU emissions of 0.15 pounds per million British Thermal Units (#/MMBTU) for $SO_2$ and 0.10 #/MMBTU for $NO_X$ by 2013 and the ICI boiler option with a 40 percent reduction in $SO_2$ emissions and a 60 percent reduction in $NO_X$ emissions by 2013. In order to realize significant visibility improvement at Michigan's two Class I areas, EGUs are clearly the top priority source category for both $NO_X$ and $SO_2$ control. Since all EGUs were subject to CAIR, Michigan concluded that no further controls on EGUs should be considered reasonable for purposes of reasonable progress at this time. By separate rulemaking, published June 7, 2012, at 77 FR 33642, EPA has promulgated a revision to Michigan's plan to include the reductions of CSAPR in the state's long term strategy, for reasonable progress as well as for BART purposes.

A number of non-EGU facilities also have significant impact on Michigan's two Class I areas, as identified in its plan. These facilities are subject to BART analysis, and Michigan has evaluate them to determine if additional controls represent BART. Those ICI boilers not addressed by BART may eventually be controlled further. Michigan, in conjunction with other MRPO states and a number of Northeast states, evaluated reasonable control levels for ICI boilers but concluded that regulation of these sources by individual states would be relatively ineffective in the absence of a regional program addressing the emissions of ICI boilers across much of the eastern United States. However, Michigan's plan takes into account the reductions anticipated from other Federal control measures such as Tier II mobile source standards, heavy-duty diesel engine standards, low sulfur fuel, and non-road mobile sources control programs.

The final step of the process to determine the reasonable progress goals was to compare the control strategies to the uniform rate of progress. The computation of visibility levels that would be achieved by 2018 with linear progress toward the goal of no anthropogenic visibility impairment by 2064 is described above. Michigan included all control measures believed to be reasonable and compared the resulting visibility improvement to the uniform rate of progress. Michigan set the reasonable progress goals for Isle Royale at 20.86 dv for the worst 20 percent of days and 6.76 dv for the best 20 percent of days in 2018. This annual 0.05 dv improvement rate would lead to achieving natural conditions on the worst 20 percent of days by 2181. The 2018 reasonable progress goal for Isle Royale provides less improvement than the linear progress benchmark of 19.21

dv. Michigan determined that the reasonable progress goals for Seney Wilderness Area are 23.58 dv for the worst 20 percent of days and 7.78 dv for the best 20 percent of days in 2018. Projecting this 0.06 dv per year improvement into the future yields Voyageurs reaching natural conditions on the worst 20 percent of days in 2209. As was the case for Seney Wilderness Area, the 2018 reasonable progress goal for Voyageurs provides less improvement than the linear progress benchmark of 21.35 dv. Nevertheless, Michigan considers the reasonable progress goals to reflect an appropriate visibility improvement based on implementation of a reasonable set of measures. Michigan detailed potential controls in Chapter 10 of its regional haze plan.

Michigan consulted with other states to determine which other states' emissions contribute to visibility impairment in Michigan's Class I areas. The consultation also allowed Michigan to determine that in addition to contributions from its own sources, emissions from sources in Wisconsin, Illinois, Iowa, Missouri, and North Dakota contribute to visibility impairment at Michigan's Class I areas, Isle Royale National Park and Seney Wilderness Area. Michigan identified the contributing states from MRPO's 2018 modeling-based source apportionment analysis. Other analyses from CENRAP and MRPO support the contribution determination. The pollutants and sources affecting Isle Royale National Park and Seney Wilderness Area are detailed in Chapter 10 of the Michigan's regional haze plan.

Michigan consulted with the FLMs during the development of its regional haze plan. Michigan sent several drafts of its regional haze SIP for comments to the FLMs between 2007 and May 2010, prior to the public hearing held on June 29, 2010. In response to this solicitation, Michigan received comments from the FLMs and from EPA Region 5. A summary of the comments and Michigan's responses are included in Appendix 2A of its submittal. Michigan has committed to continue to consult with the FLMs as it develops future SIP revisions and progress reports.

Michigan participated in meetings and conference calls with affected Class I states and RPOs. Michigan consulted with Minnesota on their Class I areas. Michigan also participated in MRPO's inter-RPO consultations and MANE–VU. MANE–VU, the RPO for the northeastern states, facilitated consultation between Michigan and Maine, New Hampshire, New Jersey, and Vermont.

Michigan also participated in the northern Class I area consultation process as part of the process to establish a long term strategy for regional haze. This consultation process included the states of Michigan, Minnesota, North Dakota, Wisconsin, Iowa, Illinois, Indiana, and Missouri and representatives from other governments, such as the Ontario Ministry of Environment and tribes including the Leech Lake Band of Ojibwe, Mille Lacs Band of Ojibwe, Fond du Lac Band of Lake Superior Chippewa, Grand Portage Band of Chippewa, Upper/Lower Sioux, and Huron Potawatomi. The consultation process also included representatives from federal agencies, such as the U.S. Department of the Interior National Park Service and the U.S. Department of Agriculture Forest Service, as well as representatives from the EPA.

Michigan included the MRPO regional haze technical support document (TSD) in its submission. In Section 5 of the TSD, MRPO assessed the reasonable progress using the four factors required by 40 CFR 51.308(d) the regional haze rule, specifically, the cost of compliance, time needed for compliance, energy and non-air impacts, and remaining useful life.

In analyzing the visibility benefits of existing programs, MRPO considered existing on-highway mobile source, off-highway mobile source, area source, power plant, and other point source programs. MRPO also included reductions from the since vacated CAIR in its analysis. Following the court vacatur of CAIR, MRPO performed an additional analysis intended to project air quality in the absence of CAIR. MRPO projected visibility in 2018 under three scenarios in this analysis. The first scenario reflected simple emissions growth from a baseline that reflects power plant emissions in 2007, prior to most of the emission controls pursuant to CAIR being installed. The second scenario added reductions for power plants controls that are enforceable under federal or state consent decrees, permits, or rules. The final scenario also added power plant controls that the utilities anticipated installing, presumably under the expectation that EPA would issue a rule to replace CAIR, plus power plant controls representing BART where applicable.

Michigan believes that implementation of the existing control measures listed in section 10 of its regional haze plan is expected to provide its fair share of emission reductions that should allow affected Class I areas to meet the reasonable progress goals. However, CAIR is one of the existing control measures and the MRPO analysis shows emission reductions equivalent to the scale of CAIR are needed to meet reasonable progress goals. On the other hand, EPA rulemaking published June 7, 2012, at 77 FR 33642, EPA promulgated provisions incorporating CSAPR into Michigan's SIP. EPA believes that with CSAPR providing the reductions that Michigan expects to obtain from CAIR, Michigan's long term strategy can in fact be expected to achieve the state-adopted reasonable progress goals that Michigan established. Furthermore, EPA proposes to agree with Michigan's conclusion, based on a review of the four factors, that the state's plan includes a reasonable set of measures that provide its appropriate share of reductions toward achieving reasonable progress goals.

*D. BART*

Michigan developed rules that describe the process for determining BART and the applicability provisions. See Appendix 9A of regional haze plan. Michigan conducted a BART analysis using the criteria in the BART Guidance at 40 CFR 51.308(e) and 40 CFR 51 appendix Y to identify all of the BART-eligible sources, assess whether the BART-eligible sources are subject to BART and determine the BART controls. These criteria to determine BART eligibility are: (1) The emissions unit fits within one of the 26 categories listed in the BART Guidelines; (2) the emissions unit was in existence prior to August 7, 1962, but was not in operation before August 7, 1962; and (3) the total potential emissions of any visibility-impairing pollutant from the subject units at a stationary source are 250 tons or more per year.

Michigan relied on CAIR to satisfy BART requirements for EGUs for $SO_2$ and $NO_X$. Furthermore, a modeling analysis demonstrated that particulate matter impacts from EGUs at Class I areas were insignificant and did not warrant further control. Therefore, Michigan's assessment of sources subject to BART focused on non-EGUs. Using available source emissions and construction date information, Michigan identified 35 non-EGU facilities that were potentially subject to BART.

Michigan worked with MRPO to perform source-specific analyses with CALPUFF model to determine the sources subject to BART. MRPO conferred with its states, EPA, and the FLMs in developing its BART modeling protocol. Consistent with EPA guidance, the state used a 0.5 dv impact (98th percentile) as the threshold for a source to contribute to visibility impairment,

concluding that such a threshold provided an appropriate means of identifying which sources cause sufficient visibility impairment to warrant being subject to BART. By this means, Michigan identified the following six non-EGU sources subject to BART: Lafarge Midwest, Inc.; Smurfit Stone Container Corp.; St. Mary's Cement; New Page Paper; Tilden Mining Co.; and Empire Mining Company. More detail on Michigan's BART determinations is provided in appendix 9 of Michigan's regional haze plan.

Subsequent to Michigan's identification of sources subject to BART requirements, Empire Mining provided new information that it had permanently shut down one furnace. With the resulting lower emissions, modeling for Empire Mining showed that the facility does not exceed the 0.5 dv threshold BART level. Therefore, Michigan concluded that this facility is no longer subject to BART.

EPA's review of Michigan's analysis concluded that Michigan applied appropriate analyses based on appropriate criteria for identifying sources subject to BART.

The five non-EGU BART-eligible sources include two Portland cement plants, one taconite plant, and two paper products plants. Table 9.2.d of Michigan's regional haze plan includes a summary of the BART analysis submitted by the sources and Michigan's evaluation of potential BART options and proposed BART control strategies. More detailed information of BART controls and analysis submitted by the sources can be found in appendices 9C through 9J of Michigan's plan. The following discussion reviews Michigan's proposed BART determinations for these five sources.

(1) Lafarge Midwest, Inc.

Lafarge Midwest, Inc. is a cement plant located in Alpena, Michigan. The BART subject emission units include five Portland cement manufacturing kilns: EU–KILN 19, EU–KILN 20, and EU–KILN 21 are part of Kiln Group 5 (KG 5); EU–KILN 22 and EU–KILN 23 are part of Kiln Group 6 (KG 6).

On March 18, 2010, Lafarge entered into a Global Settlement/Consent Decree (hereinafter Consent Decree) with the EPA and Michigan to reduce $NO_X$ and $SO_2$ emissions at the Alpena facility along with other Lafarge facilities in the United States.

The emission controls required by the Consent Decree include selective noncatalytic reduction (SNCR) for Kiln Groups KG 5 and KG 6 for $NO_X$ control. For $SO_2$ control, wet scrubbers for kiln group KG 6 and a Dry Absorption Addition system for Kiln Group KG 5 are required. These controls are consistent with the BART Guidelines to control visibility impairing pollutants ($NO_X$ and $SO_2$) emissions. An additional control not included in the BART analysis but agreed to in the Consent Decree is the Dry Absorption Addition system for $SO_2$ controls on KG 5. Michigan includes all controls contained in the Consent Decree, including the Dry Absorption Addition system, as part of the BART controls.

The Lafarge Alpena facility will reduce $NO_X$ and $SO_2$ according to the schedule and conditions given in the Consent Decree (see Appendix 9D). Beginning January 1, 2011, Lafarge was required to maintain an interim, facility-wide, 12-month rolling tonnage limit for $NO_X$ of 8,650 tons per year and $SO_2$ at 13,100 tons per year. The final emission limits will be established according to the Consent Decree ''Control Technology Demonstration Requirements,'' as given in the Appendix of the Consent Decree. The control technology demonstration describes in detail a stepwise emission control optimization program to establish the 30-day rolling average emission limits for $NO_X$ and $SO_2$ at individual affected kilns. Additional requirements include a demonstration phase, facility-wide, 12-month rolling average $NO_X$ emission limit of 4.89 pounds of $NO_X$ per ton of clinker and an $SO_2$ emission limit of 3.68 pounds of $SO_2$ per ton of clinker. The demonstration phase limit will be followed by a period of testing of control efficiency and subsequently establish a 30-day rolling average limit for both $NO_X$ and $SO_2$ to be calculated at the end of each 24-hour period.

In accordance with Regional Haze Rule, BART for PM emission was determined to be equivalent to the Portland Cement MACT, which regulates PM as a surrogate for hazardous air pollutants. Lafarge has emission controls (baghouses) in place to control hazardous air pollutants and thereby meets both the MACT requirements and the BART requirement for PM.

EPA is proposing to approve the requirements established in the Consent Decree, requiring reductions in $NO_X$ and $SO_2$ emissions at the Lafarge Midwest, Inc. facility located in Alpena, as satisfying BART requirements for these pollutants. In addition, EPA is satisfied that the PM MACT represents BART for PM, and approves a PM limit of 0.03 pounds per ton of dry feed as BART at kilns in KG5 and KG6.

(2) Smurfit Stone Container Corporation (SSCC)

SSCC was a paper products plant located in Ontonagon, Michigan. The only BART subject emission unit at the facility was the Riley Boiler #1 (EUBR 1).

Subsequent to Michigan's determination of BART for this facility, the facility has been demolished. Any effort to reconstruct this facility would require a new source permit. Therefore, this facility cannot restart operation without implementing BART. Consequently, it is now moot whether Michigan's BART determination for this facility would have satisfied the BART requirement.

(3) St. Mary's Cement

St. Mary's Cement operates a Portland cement kiln and associated material handling equipment in Charlevoix, Michigan. In addition to operating an on-site quarry and stone crushing operation, the company operates a kiln system that includes a pre-heater and pre-calciner. In 2006, the company installed an indirect firing system to reduce fuel requirements and to reduce emissions of $NO_X$ and $SO_2$.

A consultant prepared and submitted to Michigan a report analyzing several control alternatives for this facility. Based on its review of this report, provided in Appendix 9E of its submittal to EPA, Michigan concluded that BART reflected no further control of this facility. Moreover, Michigan concluded that existing limits suffice to require this level of control.

As discussed above, a full analysis of BART involves evaluation of five factors. These factors include: (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.

EPA has identified several deficiencies in the evaluation of BART for St. Mary's Cement in Michigan's plan, most notably with respect to the evaluation of the costs and benefits of installing equipment for SNCR. These deficiencies include:

—Use of a 10-year projection of equipment life, rather than 15 or 20 years, resulting in overly rapid amortization of the cost of control equipment;

—Inclusion of costs associated with production losses from system clogging that the company expects to

result from introduction of urea, based on a presumption that the company will fail to solve this problem;
—Underestimation of the emission reductions that can be expected from an improved SNCR;
—Overestimation of the costs of urea; and
—Overestimation of the costs of electricity.

These issues are discussed in greater length in a May 24, 2012 letter from Douglas Aburano, Chief of the Attainment Planning and Maintenance Section of EPA Region 5, to Vincent Hellwig, Chief of the Air Quality Control Division of the Michigan Department of Environmental Quality. The following table summarizes values that the consultant for St. Mary's Cement used in its cost-benefit analysis and the corresponding values that EPA used to assess whether SNCR is likely to be cost-effective at this facility.

TABLE 4—PARAMETERS FOR EVALUATING COST-EFFECTIVENESS OF SNCR AT ST. MARY'S CEMENT-CHARLEVOIX

| Parameter | Consultant value | EPA value | Comments |
|---|---|---|---|
| Clean-out costs | $968,000/yr. lost production | Capital: $685,815<br>Labor/materials $19,458 | EPA estimates 50% more capital, twice labor/materials. |
| Urea | $1,440,000 | $458,167 | Assumes 0.31 moles urea/mole $NO_X$, $450/ton urea. |
| Capital amortization | 10-year life, 7% interest (0.14) | 15–20 year life, 7% interest (0.11 to 0.0944) .* | |
| Overhead | $883,264 (60% of material, labor) | $0 | EPA's Control Cost Manual finds overhead minimal. |
| Emission Reduction | 524 tons/year (10% of baseline) | 1259 tons/year (50% of 2006 to 2008 emissions). | |
| Electricity | $45,990 (100kW for 6570 hrs/yr) | $28,000 (Average of 100 kW for 4000 hrs/yr). | |
| Maintenance (Labor, materials). | $17,512 | $35,540 | EPA assumes twice normal maintenance. |

* Letter to Michigan estimated cost effectiveness based on 15-year life of control equipment, but EPA believes that amortization over 15 to 20 years is appropriate.

In summary, the consultant for St. Mary's Cement assigned very high costs for lost production resulting from material buildup, very high costs for overhead, and low efficiency of $NO_X$ emission control. The consultant estimated that the annualized cost of $NO_X$ emission reduction would be $7,568 per ton. Based on the revised cost parameters summarized above, EPA finds that the annualized cost per ton of $NO_X$ emission reduction is likely to be between $920 and $980. (This range reflects a range of estimates of equipment life, amortizing the capital expense over between 15 and 20 years.)

Much of the consultant's discussion of SNCR that is included in Michigan's plan asserts that use of SNCR at this facility would cause buildup of ammonium bisulfite scale and would cause various expenses that would make operation of SNCR overly expensive. Most notably, the consultant asserts that use of SNCR would result in material buildup that would require periodic cleaning necessitating kiln downtime and lost production. The consultant also observes that ''air cannons'' currently in use to remove buildup could be supplemented, at considerable expense, but the consultant asserts that this approach would likely have limited effectiveness in reducing the need for full kiln shutdowns for cleaning purposes.

EPA addressed these concerns in its May 24, 2012, letter to Michigan. EPA noted that ''SNCR has been successfully demonstrated at many cement plants across the country, which suggests that solutions to this problem are readily available.'' EPA listed some of the options for addressing this problem, including redesign for improved airflow, use of enhanced pneumatic cleaning or other cleaning approaches, and use of more concentrated urea (with less water content), and concluded that the success in operating SNCR at other plants indicates that SNCR can be successfully be operated at reasonable cost at this plant. Indeed, EPA's review finds that SNCR can be installed and operated at reasonable cost even if one assumes additional expense in installation and operation for addressing material buildup issues beyond the expenses currently incurred by the company addressing these issues.

EPA has reassessed the above five factors for evaluating whether SNCR constitutes BART for the St. Mary's Cement Charlevoix facility. EPA finds that the facility can install and operate SNCR at reasonable cost. No energy or non-air quality environmental impacts influence this choice of control options. The design of the kiln system, which includes an indirect firing system that reduces the $NO_X$ emissions from the kiln, would be well complemented by installation and operation of SNCR. The facility is expected to have sufficient remaining useful life to assume that the cost of installing SNCR may be amortized over 15 to 20 years. While the Michigan plan does not estimate the visibility improvement that would result from installation and operation of SNCR, the plan estimates the overall impact of the plant is 3.8 dv, from which EPA conservatively estimates that SNCR would improve visibility by at least 0.4 dv. (This estimate reflects an assumption that half of the overall plant impact is due to $NO_X$ emissions. This estimate also reflects an assumption that baseline $NO_X$ emissions used in estimating the plant's impact were 5,741 tons per year, though the report in Michigan's SIP also suggests that the impact analysis may reflect a substantially lower $NO_X$ emission rate, which would indicate that the benefits of SNCR would be much greater.)

EPA also reviewed the determination of BART for this facility with respect to $SO_2$. Based on CEMS data for 2006 to 2008, the average $SO_2$ emission rate at this facility is 3.02 pounds per ton of clinker. The Michigan SIP does not clearly limit $SO_2$ emissions from this facility, though a construction permit limits annual emissions to 4,404 tons per year and 550 tons per 30 days, which, at 2006 to 2008 average production rates are equivalent to 7.9 pounds and 12.0 pounds of $SO_2$ per ton of clinker, respectively. The company states that a lower emission limit should not be considered BART because the BART limits should accommodate higher sulfur-bearing raw materials in

the company's quarry than are presently being used.

Michigan's plan includes a consultant's analysis of both wet and dry flue gas desulfurization. This analysis fails to annualize equipment costs, and instead computes cost effectiveness by adding the entire capital costs for equipment and installation plus the costs of one year's operation, then dividing by one year's emission reduction. Using the consultant's cost estimates but amortizing the capital costs over a 20-year period (assuming an interest rate of 7 percent) suggests costs per ton of $3,500 for dry flue gas desulfurization and $4,500 per ton for wet flue gas desulfurization.

EPA proposes to find that no additional control equipment constitutes BART for $SO_2$ under current conditions. However, if the company, as it contemplates, uses raw materials with higher sulfur content, then the cost-benefit ratio for control would improve, potentially to the point where installation of emission control equipment is warranted.

Based on review of these factors, EPA concludes that BART at St. Mary's Cement's Charlevoix facility includes installation and operation of SNCR and a more stringent tighter limit on emissions of $SO_2$. EPA concludes as a result that Michigan's plan fails to require BART at this facility. Therefore, EPA proposes to disapprove Michigan's plan with respect to BART.

In a notice published January 15, 2009, at 74 FR 2392, EPA notified Michigan of a failure to submit a timely plan for regional haze. Consequently, under Clean Air Act section 110(c), in the absence of a state plan meeting pertinent requirements, EPA is to promulgate FIP provisions meeting the requirements. EPA is proposing Federal limits in this action to address the BART requirement for St. Mary's Cement's Charlevoix facility. These limits are discussed in a subsequent section of this preamble.

(4) NewPage Paper

NewPage Paper owns and operates a paper mill in Escanaba, Michigan, a facility that is permitted by the State as Escanaba Paper. The largest boiler at the facility was not constructed during the time period for BART eligibility, but several other boilers and other operations at the plant are subject to the requirement for BART. Michigan's plan includes a review prepared by the company's consultant that concluded that existing controls constitute BART and that existing limits suffice to require these controls.

EPA's review focused on the largest of these sources, namely Boiler 8 and Boiler 9. Boiler 8 has historically been fired with both natural gas and residual oil, but in the past few years the boiler has only used natural gas. Boiler 9 is a stoker boiler that predominantly fires wood bark generated at the plant. Since the fuels firing these boilers have minimal sulfur content, the $SO_2$ emissions from these boilers are insignificant. State rules limit the $NO_X$ emissions of boiler 8 during the ozone season (defined as May 1 to September 30), with a limit of 0.2 #/MMBTU when firing gas and 0.40 #/MMBTU when firing residual oil. However, these rules are not part of the Michigan SIP, and Michigan did not submit these rules as part of its regional haze plan submittal. Boiler 8 has no state or Federal $NO_X$ emission limits for the rest of the year, and Boiler 9, being predominantly wood-fired, has no state or Federal $NO_X$ emission limits at any time.

The emission profiles of these two boilers have changed significantly since 2002. Boiler 8, besides becoming predominantly fired with natural gas, has been used much less in recent years than in prior years, which, in combination with a modest reduction in emissions per million BTU, resulted in the boiler's $NO_X$ emissions declining from an average of 135 tons per year in 2002 to 2004 to an average of 40 tons per year in 2010 to 2011. Boiler 9 had relatively steady usage throughout this period, but modifications to the boiler's overfire air system in 2006 resulted in the boiler's $NO_X$ emissions declining from a 2002 to 2004 average of 836 tons per year to a 2010 to 2011 average of 250 tons per year.

EPA identified several concerns with the Michigan submittal's analysis of costs and benefits of emission controls at these two boilers. The submittal, reflecting the analysis by the company's contractor, appears to overestimate likely costs of installing controls, fails to evaluate design changes such as the improved overfire air design implemented at Boiler 9, and assumes overly short control equipment life (thereby amortizing control costs over an inappropriately short period).

More importantly, as noted above, Michigan's plan includes no limits on emissions from these two boilers; indeed, the plan does not even include the limits in state rules that apply to Boiler 8 during the ozone season. Therefore, notwithstanding the emission reductions that have occurred at the key BART units at NewPage Paper's Escanaba facility, Michigan's plan does not include any limits that mandate any reductions at these boilers. Therefore, EPA believes that Michigan's plan fails to require BART for these two boilers.

Michigan identified several other units at NewPage Paper that are subject to a requirement for BART, including the Number 10 recovery furnace, a lime kiln, and the smelt dissolving tank. EPA concurs with Michigan's conclusion that these other units do not require limits to require BART controls. However, EPA finds that Michigan has failed to require BART for the facility because the state has failed to submit limits requiring appropriate control for Boilers 8 and 9.

As discussed above for St. Mary's Cement, EPA is obligated here to promulgate FIP provisions in cases where state plan provisions are inadequate. FIP provisions mandating BART for NewPage Paper's Escanaba facility are discussed in a subsequent section of this preamble.

(5) Tilden Mining

EPA is reviewing Michigan's BART determination for Tilden mining in conjunction with a review of BART for other taconite plants in Minnesota. By this means, EPA intends to ensure that the Tilden Mining taconite plant and similar facilities in Minnesota are subject to similar requirements. This review is being addressed in a separate rulemaking action that EPA plans to conduct on the same timetable as this Michigan rulemaking.

*E. Long Term Strategy*

Under section 169A(b)(2) of the Clean Air Act and 40 CFR 51.308(d), states' regional haze programs must include a long term strategy for making reasonable progress toward meeting the national visibility goal. Michigan's long term strategy must address visibility improvement for the Class I areas in and out of Michigan that are affected by Michigan sources. Section 51.308(d)(3) requires that Michigan consult with the affected states in order to develop a coordinated emission management strategy. Michigan must demonstrate that its plan includes all measures necessary to obtain its share of the emissions reductions needed to meet the reasonable progress goals for the Class I areas affected by Michigan sources. As described in section III.D of this proposal, the long term strategy is the compilation of all control measures Michigan will use to meet applicable reasonable progress goals. The long term strategy must include enforceable emissions limitations, compliance schedules, and other measures as necessary to achieve the reasonable progress goals for all Class I areas affected by Michigan emissions.

At 40 CFR 51.308(d)(3)(v), the regional haze rule identifies seven factors that a state must consider in developing its long term strategy: (A) Emission reductions due to ongoing air pollution control programs, (B) measures to mitigate impacts from construction, (C) emission limits and schedules for compliance to achieve the reasonable progress goal, (D) replacement and retirement of sources, (E) smoke management techniques, (F) federally enforceable emission limits and control measures, and (G) the anticipated net effect on visibility due to projected emission changes over the long term strategy period.

Michigan relied on MRPO's modeling and analysis along with its emission information in developing a long term strategy. Michigan consulted with Class I states through its participation in MRPO. MRPO facilitated consultations with other midwest states and with states in other regions through inter-RPO processes. Michigan considered the factors set out in 51.308(d)(3)(v) in developing its long term strategy. Based on these factors and the MRPO's technical analysis, in conjunction with reasonable progress goals that were set by the pertinent states in consultation with Michigan and other states, Michigan concludes that existing control programs adequately address Michigan's impact on Class I areas and suffice to meet their reasonable progress goals by 2018 by implementing the control programs already in place. These existing control programs include federal motor vehicle emission control program, reformulated gasoline, emission limits for area sources of VOCs, Title IV, the $NO_X$ SIP Call, MACT requirements, and Federal non-road standards for construction equipment and vehicles. These programs are fully enforceable, provide for the mitigation of new source impacts through new source permitting programs, and reflect appropriate consideration of current programs and prospective changes in emissions.

As noted in a separate EPA rule (June 7, 2012, at 77 FR 33642), a number of states, including Michigan, fully consistent with EPA's regulations at the time, relied on the trading programs of CAIR to satisfy the BART requirement and the requirement for a long term strategy sufficient to achieve the state-adopted reasonable progress goals. In that rulemaking, we promulgated a limited disapproval of Michigan's long term strategy based on its reliance on CAIR, and promulgated a FIP to replace reliance on CAIR requirements with reliance on the trading programs of CSAPR to satisfy BART requirements for $NO_X$ and $SO_2$ emissions from EGUs in various states including Michigan. We are now proposing to find that the remaining elements of Michigan's long term strategy, amended further to include the BART limitations that EPA is proposing for St. Mary's Cement and for NewPage Paper in this action, meet the requirements of the regional haze rule.

*F. Monitoring Strategy*

Michigan's monitoring strategy relies on participation in the IMPROVE network. There is an IMPROVE Protocol monitoring site in Quaker City, Michigan. Michigan also runs a network of criteria pollutant monitors that provides data to analyze air quality problems including regional haze. Class I states like Michigan are required under 40 CFR 51.308(d)(4) to have procedures for using the monitoring data to determine the contribution of emissions from within the state to affected Class I areas. Michigan developed procedures in conjunction with the MRPO. The procedures are detailed in the MRPO TSD. EPA finds that Michigan's regional haze plan meets the monitoring requirements for the regional haze rule and that Michigan's network of monitoring sites is satisfactory to measure air quality and assess its contribution to regional haze.

*G. Comments*

Michigan provided a public comment period on its proposed regional haze plan. It held a public hearing on June 29, 2010, which concluded the public comment period. Michigan received comments from the FLMs as part of the consultation process as well as from EPA. Michigan submitted evidence of the public notice and public hearing to EPA.

Michigan provided the comments it received and its responses in a document within its regional haze plan. Michigan revised portions of its proposed plan in response to comments. Michigan has satisfied the requirements from 40 CFR 51 appendix V by providing evidence that it gave public notice, took comments, and that it compiled and responded to comments.

## V. What are EPA's proposed BART determinations?

As noted above, in absence of a state submittal that satisfies BART requirements for St. Mary's Cement's Charlevoix facility and for NewPage Paper's Escanaba facility, EPA is under obligation to promulgate Federal provisions satisfying these requirements. The following discussion evaluates appropriate limits to satisfy the BART requirement for these facilities. As noted above, EPA is addressing Tilden Mining's facility near Ishpeming in a separate rulemaking.

*A. St. Mary's Cement*

As discussed in section IV.E., EPA proposes to find that SNCR represents BART on the kiln at St. Mary's Cement's Charlevoix facility. The following discussion describes EPA's assessment of the appropriate emission limit for mandating BART-level control at this facility.

The most relevant information concerning potential effectiveness of SNCR at this facility is from testing at St. Mary's Cement's facility in Dixon, Illinois. A set of tests, lasting 1 to 3 days each, injected urea at a rate equal to a stoichiometric ratio of 0.6 of the rate of uncontrolled $NO_X$ emissions. (That is, the ratio of the moles of ammonia produced by the injected urea to the moles of uncontrolled $NO_X$ emissions was 0.6.) These tests showed an average of 46 percent $NO_X$ emission reduction. Shorter term tests at the Dixon facility showed that injection of urea at a stoichiometric ratio of 1.2 achieved an average of 83 percent reduction in $NO_X$ emissions.

Several other reviews have also found SNCR to be effective at controlling $NO_X$ emissions from cement kilns, commonly achieving 50 percent $NO_X$ control. EPA has conducted a recent review of options for controlling emissions for Portland cement plants, in developing new source performance standards for these facilities. EPA proposed these new source performance standards on June 16, 2008, at 73 FR 34072, and published final standards on September 9, 2010, at 75 FR 54970. These standards included a new standard for $NO_X$ emissions, set at 1.5 pounds per ton of clinker on a 30-day average basis.

Other reviews similar to EPA's review for its new source performance standards have also found SNCR to be an effective means of controlling $NO_X$ emissions from existing cement kilns. EPA made similar findings in an earlier review, given in a report published in 2000 entitled, ''$NO_X$ Control Technologies in the Cement Industry: Final Report'' (EPA–457/R–00–002, September 2000, available at *http://_www.epa.gov/_ttnnaaqs/_ozone/ctg_act/200009_nox_epa457_r-00-002_cement_industry.pdf*). Although application of $NO_X$ control technology was relatively rare in the United States at the time (*i.e.,* before the $NO_X$ SIP Call required control), EPA found SNCR to be an effective means of reducing $NO_X$ emissions, commonly achieving 50 percent or more reduction. Regional

planning organizations evaluating options for BART also made similar findings. (See, for example, ''Identification and Evaluation of Candidate Control Measures—Phase II Final Report,'' June 2006, available at *http://www.ladco.org/reports/control/final_reports/identification_and_evaluation_of_candidate_control_measures_ii_june_2006.pdf.*)

EPA determined baseline emissions at St. Mary's Cement from continuous emission monitoring data for 2006 to 2008 reported by the company. These data indicated that $NO_X$ emissions from the kiln average 4.52 pounds per ton of clinker. This is quite similar to the representative emission factors for similar Portland cement manufacturing facilities given in the EPA emission factor guidance document known as AP–42, which is 4.2 pounds of $NO_X$ per ton of clinker for preheater/precalciner kilns and 4.8 pounds of $NO_X$ per ton of clinker for preheater process kilns. The St. Mary's Cement data for 2006 to 2008 also indicate that the 95th percentile value among 30-day average $NO_X$ emission rates was 5.78 pounds per ton of clinker. For $SO_2$, the St. Mary's Cement data indicate an average emission rate of 3.02 pounds per ton of clinker, and the 95th percentile value among 30-day averages was 7.19 pounds per ton of clinker.

EPA believes that the most appropriate form for a limit on emissions from St. Mary's Cement is a 30-day rolling average of emissions per ton of clinker. This reflects the form of the standard used in the new source performance standards for Portland cement kilns.

EPA believes that the appropriate limit for $NO_X$ emissions from the kiln at St. Mary's Cement would reflect a 50 percent reduction from the average emissions. Thus, rounding to two significant figures, EPA proposes to establish a limit on $NO_X$ emissions from the St. Mary's Cement kiln at 2.30 pounds per ton of clinker, set as a 30-day rolling average. According to 2006 to 2008 data from the facility, this limit would require slightly under 60 percent control from St. Mary's Cement's 95th percentile 30-day average emission rate, which the evidence from tests at St. Mary's Cement's Dixon facility indicates is readily achievable, particularly since a limit of 2.30 pounds per ton of clinker would only occasionally require this level of control.

EPA is also proposing to establish a limit on $SO_2$ emissions per ton of clinker. The purpose of this limit is not to require emission controls to achieve emissions below current levels. Instead, EPA intends this limit to assure that emissions do not increase significantly above current levels. While EPA has concluded that installation and operation of $SO_2$ emission control equipment is not cost effective at current $SO_2$ emission rates, such control equipment would be cost effective at higher $SO_2$ emission rates. That is, EPA is proposing to establish a limit reflecting its view that BART reflects no further control under current circumstances with current raw material sulfur contents but the BART reflects achievement of an $SO_2$ emission rate that would involve emission control if the raw material contained significantly more sulfur.

As noted above, the average $SO_2$ emission rate at St. Mary's Cement from 2006 to 2008 was 3.02 pounds per ton of clinker, and the 95th percentile 30-day average over this period was 7.19 pounds per clinker. Since most emission rates are well below 7.19 pounds per ton of clinker, EPA is proposing to set a limit that reflects a 5 percent compliance margin relative to this emission rate. That is, EPA is proposing to set a limit of 7.5 pounds of $SO_2$ emissions per ton of clinker as a 30-day rolling average.

This facility currently operates a continuous emission monitoring system that measures $NO_X$ and $SO_2$ emissions from the kiln, and EPA envisions using data from this system to evaluate compliance with the $NO_X$ and $SO_2$ limits it is proposing.

Under 40 CFR 51.308(e)(1)(iv), BART controls must be installed and operated as expeditiously as practicable. EPA believes that Saint Mary's Cement may reasonably be required to conduct the engineering, design, installation, and trial operation of the SNCR to be able to meet this limit within about three years from the expected effective date of final promulgation of these limits. Therefore, EPA is proposing a compliance date for the $NO_X$ limit of January 1, 2016. That is, under this proposal, the first 30-day period that would be required to achieve an average $NO_X$ emission rate of 2.3 #/MMBTU would be from January 1, 2016 to January 30, 2016. EPA is proposing that the $SO_2$ limit apply upon the effective date of the final promulgation of the limit, because the company is already complying with the limit.

*B. NewPage Paper*

The first step in determining BART for boilers 8 and 9 at NewPage Paper's Escanaba facility is to review information relevant to the five factors used in evaluating BART determinations. First, for Boiler 8, EPA reevaluated costs based on the information provided in Michigan's submittal, but replaced the capital cost estimate with an updated estimate that NewPage provided in a June 20, 2012 email from Todd Schmidt to Douglas Aburano, EPA Region 5. This information suggests that NewPage could install low $NO_X$ burners at a total capital cost of $797,000, which, amortized at 7 percent interest over 20 years, represents an annualized capital cost of $75,200. With the additional estimated annual operating cost of $12,000, the total estimated annualized cost is $87,200. EPA estimates baseline emissions for this boiler to be 143.2 tons per year, and EPA believes that low $NO_X$ burners would achieve a 40 percent reduction of $NO_X$ emissions, which, at baseline operating rates, would reduce emissions by 57.3 tons per year. This suggests that low $NO_X$ burners would reduce $NO_X$ emissions with a cost effectiveness of $1,500 per ton.

There are no non-air quality-related impacts have been identified that affect the BART determination. The company has installed flue gas recirculation to help meet state limits that apply during the ozone season, although the company assumes significant costs for year-round operation of this design feature and argues that it achieves only a 12 percent reduction relative to ''current baseline emissions.'' The remaining useful life of the facility is unknown, but EPA assumed it to be sufficient to amortize any capital costs of control equipment over 15 to 20 years.

The Michigan plan includes the results of modeling, conducted by the consultant for NewPage Paper, that is based on a worst-case $NO_X$ emission rate of 1,300 tons per year, indicating an impact on average visibility (from both $NO_X$ and $SO_2$ emissions) of 0.4 dv. Thus, a reduction of $NO_X$ emissions from 143.2 tons per year to 85.9 tons per year would be estimated to reduce average visibility by no more than about 0.02 dv.

An important consideration in determining BART for Boiler 8 is the fact that the company has already reduced emissions from this boiler. According to information provided to the Michigan Air Emissions Reporting System, the average emission factor has declined somewhat, and usage has declined sufficiently that emissions in 2010 and 2011 averaged 40 tons per year of $NO_X$. Furthermore, the boiler is subject to a State rule that limits emissions during the ozone season (May to September) from this boiler to 0.20 #/MMBTU while firing natural gas and 0.40 #/MMBTU while firing residual oil. To meet this rule, the company has

installed flue gas recirculation, although usage of this system is limited. Michigan did not submit this rule for inclusion in the SIP, but EPA believes that slightly higher limits can reasonably be achieved on a year-round basis. Given the decline in usage of this boiler, EPA believes that imposition of limits comparable to emissions rates currently being achieved will suffice to assure an appropriate level of protection from visibility impacts from this boiler, comparable to the reductions that would be achieved if the boiler were operated at previous usage rates and installed a low $NO_X$ burner. Therefore, EPA proposes to establish limits on pounds of $NO_X$ emissions per million BTUs, to be met as a 30-day rolling average. The facility is not now burning residual oil, but EPA proposes to identify limits for $NO_X$ emissions from combustion of both natural gas and residual oil. EPA proposes to mandate that Boiler 8 meet a limit, calculated as a 30-day rolling average, that would be computed as a weighted average based on the relative quantities of heat input from burning natural gas and from burning residual oil. EPA is proposing fuel specific limits of 0.26 #/MMBTU for combustion of natural gas and 0.50 #/MMBTU for combustion of residual oil, in each case representing approximately 10 percent above the upper end of the range of emission rates under current operation.[2] Compliance information will be obtained from a continuous emission monitoring system that the company operates on this boiler. Since the boiler is often not operating, EPA will compute 30-day averages on the basis of 30 successive operating days, not counting days in which the boiler does not operate. EPA envisions that the company will be able to meet these limits by maintaining existing operations (maintaining existing combustion improvements), but finds that the company also has the flexibility to meet these limits by installing low $NO_X$ burners or using its flue gas recirculation equipment more frequently. These limits reflect EPA's proposed judgment that the existing emission reductions are warranted as BART but that further emission reductions are not warranted for the limited benefits they would achieve.

For Boiler 9, usage rates have remained relatively steady, but the company modified its boiler design in 2006 to incorporate overfire air. Stack tests for this boiler indicate that this modification decreased $NO_X$ emissions from about 0.69 #/MMBTU to about 0.20 to 0.22 #/MMBTU. The company has not provided cost information regarding this modification, but maintaining this modification is clearly cost effective. Modeling in Michigan's submittal indicates that 345 tons per year of $NO_X$ emissions from this boiler, in combination with about 50 tons per year of $SO_2$ emissions, have an average visibility impact of 0.2 dv. Therefore, the modification to incorporate overfire air, with which Boiler 9 $NO_X$ emissions have decreased from an estimated average of 840 tons per year in 2002 to 2004 to an estimated average of 240 tons per year in 2009 to 2011, is estimated to have yielded a visibility improvement of 0.4 dv. No non-air quality related environmental impacts have been identified to influence the choice of BART, and remaining useful life of the facility is also not a significant factor. From its consideration of these factors, EPA concludes that the overfire air modifications that the company has made are included in BART for this boiler. At the same time, based on information in Michigan's submittal, EPA agrees with the conclusion in Michigan's submittal that no further control of this boiler constitutes BART.

Therefore, EPA is proposing limits to mandate the continued operation of the overfire air system that the company has installed on Boiler 9. Since no system for continuous emission monitoring is operating on this boiler, EPA is proposing a limit that would be enforced by stack tests. As noted above, the most recent stack tests for this boiler indicated $NO_X$ emission rates of 0.22 #/MMBTU and 0.20 #/MMBTU, respectively. To accommodate a modest degree of stack test variability, EPA is proposing to set a limit with a 25 percent compliance margin. That is, EPA is proposing a $NO_X$ emission limit for Boiler 9 of 0.27 #/MMBTU. (This emission rate also is about 10 percent higher than the highest single run test result reported by the company.)

NewPage Paper has already implemented measures to meet these limits on Boilers 8 and 9. Therefore, EPA is proposing that these limits take effect upon the effective date of the rulemaking promulgating these limits.

## VI. What actions is EPA proposing?

EPA is proposing limited approval of revisions to the Michigan SIP, submitted on November 5, 2010, addressing regional haze for the first implementation period. The revisions seek to satisfy Clean Air Act and regional haze rule requirements for states to remedy any existing anthropogenic and prevent future impairment of visibility at Class I areas.

EPA finds that Michigan's submission satisfies BART requirements for some of the non-EGUs, most notably based on a Federal consent decree requiring new controls for $SO_2$ and $NO_X$ emissions for the Lafarge plant. On the other hand, EPA proposes to conclude that Michigan's submittal does not require BART at St. Mary's Cement's facility in Charlevoix or at NewPage Paper's facility in Escanaba. Specifically, we are proposing limited disapproval of the $NO_X$ and $SO_2$ BART determination for the cement kiln and associated equipment at the St. Mary's Cement facility and of the $NO_X$ BART determination for Boiler 8 and 9 of the NewPage Paper Company. Further, we propose a FIP that specifically imposes $NO_X$ and $SO_2$ limits mandating BART for the cement kiln and associated equipment for the St. Mary's Cement facility, and $NO_X$ limits mandating BART for Boilers 8 and 9 of the NewPage Paper Company.

EPA is also reviewing Michigan's BART determination for Tilden Mining taconite plant. EPA plans to take action on this BART determination in a separate action that includes similar facilities in Minnesota.

Michigan's submission provides an approvable analysis of the emission reductions needed to satisfy reasonable progress and other regional haze planning requirements, and Michigan's submission meets other regional haze planning requirements such as identification of affected Class I areas and provision of a monitoring plan.

## VI. Statutory and Executive Order Reviews

### *A. Executive Order 12866: Regulatory Planning and Review*

This proposed action is not a ''significant regulatory action'' under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011). The proposed Virgin Islands Regional Haze FIP requires implementation of existing emissions controls and emission reduction strategies on one facility and is not a rule of general applicability.

### *B. Paperwork Reduction Act*

This proposed action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. Under the Paperwork Reduction Act, a ''collection of information'' is defined as

[2] Operation in 2010 and 2011, during which the boiler was gas-fired, yielded a 30-day average emission factor of up to about 0.24 #/MMBTU. Operation in 2008 and 2009, during which the boiler was often oil-fired, yielded emission factors up to about 0.45 #/MMBTU.

a requirement for ''answers to * * * identical reporting or recordkeeping requirements imposed on ten or more persons * * *.'' 44 U.S.C. 3502(3)(A). Because the proposed FIP applies to just one facility, the Paperwork Reduction Act does not apply. See 5 CFR 1320(c).

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid Office of Management and Budget (OMB) control number. The OMB control numbers for our regulations in 40 CFR are listed in 40 CFR part 9.

*C. Regulatory Flexibility Act*

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

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

After considering the economic impacts of this proposed action on small entities, I certify that this proposed action will not have a significant economic impact on a substantial number of small entities. The Regional Haze FIP that EPA is proposing for purposes of the regional haze program consists of imposing existing Federal controls to meet the BART requirement for $SO_2$, $NO_X$, and PM emissions on specific units at one facility in the Virgin Islands. The net result of this FIP action is that EPA is proposing existing direct emission controls on selected units at only one facility. The facility in question is a large petroleum refinery that is not owned by a small entity, and therefore is not a small entity.

*D. Unfunded Mandates Reform Act (UMRA)*

This rule does not contain a Federal mandate that may result in expenditures that exceed the inflation-adjusted UMRA threshold of $100 million by State, local, or Tribal governments or the private sector in any 1 year. Thus, this rule is not subject to the requirements of sections 202 or 205 of UMRA.

This rule is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

*E. Executive Order 13132: Federalism*

The proposed Virgin Islands Regional Haze FIP does not have federalism implications. This action 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. In this action, EPA is fulfilling its statutory duty under Clean Air Act section 110(c) to promulgate a Regional Haze FIP following its finding that the Virgin Islands had failed to submit a regional haze SIP. Thus, Executive Order 13132 does not apply to this action. In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicits comment on this proposed rule from State and local officials.

*F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments*

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.

*G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks*

EPA interprets EO 13045 as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the EO has the potential to influence the regulation. This action is not subject to EO 13045 because it implements specific standards established by Congress in statutes. However, to the extent this proposed rule will limit emissions of $SO_2$, $NO_X$, and PM the rule will have a beneficial effect on children's health by reducing air pollution.

*H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

This action is not subject to Executive Order 13211 (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.

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

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

We have determined that this proposed rule, if finalized, will not have disproportionately high and adverse human health or environmental effects

on minority or low-income populations because it limits increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population.

**List of Subjects in 40 CFR Part 52**

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

Dated: July 13, 2012.

**Susan Hedman,**

*Regional Administrator, Region 5.*

Title 40, chapter I, of the Code of Federal regulations is proposed to be amended as follows:

## PART 52—[AMENDED]

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

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

2. Section 52.1170 is amended by adding a new entry at the end of the table in paragraph (e) for ''Regional Haze Plan'' to read as follows:

**§ 52.1170 Identification of plan.**

* * * * *

(e) * * *

EPA-APPROVED MICHIGAN NONREGULATORY AND QUASI-REGULATORY PROVISIONS

| Name of nonregulatory SIP provision | Applicable geographic or nonattainment area | State submittal date | EPA approved date | Comments |
|---|---|---|---|---|
| * | * | * | * | * |
| Regional Haze Plan | Statewide | 11/5/2010 | 8/6/12, [Insert page number where the document begins]. | Includes all regional haze plan elements except BART emission limitations for EGUs, St. Mary's Cement, NewPage Paper, and Tilden Mining. |

3. Section 52.1183 is amended by adding paragraphs (g), (h), and (i), to read as follows:

**§ 52.1183 Visibility protection.**

* * * * *

(g) The requirements of section 169A of the Clean Air Act are not met because the regional haze plan submitted on November 5, 2010, does not meet the best available retrofit technology requirements of 40 CFR 51.308(e) with respect to emissions of NOx and $SO_2$ from Saint Mary's Cement in Charlevoix and $NO_X$ from NewPage Paper in Escanaba. These requirements for these two facilities are satisfied by 40 CFR 52.1183(h) and 40 CFR 52.1183(i), respectively.

(h)(1) For the 30-day period beginning January 1, 2016, and thereafter, Saint Mary's Cement, or any subsequent owner or operator of the Saint Mary's Cement facility located in Charlevoix, Michigan, shall not cause or permit the emission of oxides of nitrogen (expressed as $NO_2$) to exceed 2.30 pounds per ton of clinker as a 30-day rolling average.

(2) Saint Mary's Cement, or any subsequent owner or operator of the Saint Mary's Cement facility located in Charlevoix, Michigan, shall not cause or permit the emission of sulfur dioxide to exceed 7.50 pounds per ton of clinker as a 12-month average.

(3) Saint Mary's Cement, or any subsequent owner or operator of the Saint Mary's Cement facility located in Charlevoix, Michigan, shall operate continuous emission monitoring systems to measure $NO_X$ and $SO_2$ emissions from its kiln system in conformance with 40 CFR 60 appendix B Performance Specification 2.

(4) The reference test method for assessing compliance with the limit in paragraph (h)(1) shall be use of a continuous emission monitoring system operated in conformance with 40 CFR 60 appendix B Performance Specification 2. A new 30-day average shall be computed at the end of each calendar day.

(5) The reference test method for assessing compliance with the limit in paragraph (h)(2) shall be use of a continuous emission monitoring system operated in conformance with 40 CFR 60 appendix B Performance Specification 2. A new 12-month average shall be computed at the end of each calendar month.

(6) *Recordkeeping.* Owner/operator shall maintain the following records for at least five years:

(i) All CEMS data, including the date, place, and time of sampling or measurement; parameters sampled or measured; and results.

(ii) All records of clinker production, monitored in accordance with 40 CFR 60.63.

(iii) Records of quality assurance and quality control activities for emissions measuring systems including, but not limited to, any records required by 40 CFR part 60, appendix F, Procedure 1.

(iv) Records of all major maintenance activities conducted on emission units, air pollution control equipment, CEMS and clinker production measurement devices.

(v) Any other records required by 40 CFR part 60, Subpart F, or 40 CFR part 60, Appendix F, Procedure 1.

(7) Reporting. All reports under this section shall be submitted to Chief, Air Enforcement and Compliance Assurance Branch, U.S. Environmental Protection Agency, Region 5, Mail Code AE–17J, 77 W. Jackson Blvd., Chicago, IL 60604–3590.

(i) Owner/operator of each unit shall submit quarterly excess emissions reports for $SO_2$ and $NO_X$ BART limits no later than the 30th day following the end of each calendar quarter. Excess emissions means emissions that exceed the emissions limits specified in paragraph (c) of this section. The reports shall include the magnitude, date(s), and duration of each period of excess emissions, specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the unit, the nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted.

(ii) Owner/operator of each unit shall submit quarterly CEMS performance reports, to include dates and duration of each period during which the CEMS was inoperative (except for zero and span adjustments and calibration checks), reason(s) why the CEMS was inoperative and steps taken to prevent

recurrence, and any CEMS repairs or adjustments.

(iii) Owner/operator shall also submit results of any CEMS performance tests required by 40 CFR part 60, appendix F, Procedure 1 (Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits).

(iv) When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted during the reporting period, such information shall be stated in the quarterly reports required by sections (7)(i) and (ii) of this section.

(i) NewPage Paper, or any subsequent owner or operator of the NewPage Paper facility in Escanaba, Michigan, shall not cause or permit the emission of oxides of nitrogen (expressed as $NO_2$) to exceed the following limits:

(1) For Boiler 8, designated as EU8B13, a 30-day weighted average limit on emissions per million British Thermal Units, based on a limit for natural gas firing of 0.26 pounds per million British Thermal Units (#/MMBTU) and a limit for residual oil firing of 0.50 #/MMBTU, weighted according to the heat input for each fuel, to be computed as follows:

Emission limit, in #/MMBTU = [0.26 * (heat input from firing natural gas) + 0.50 * (heat input from firing residual oil)]/(total heat input).

(2) NewPage Paper, or any subsequent owner or operator of the NewPage Paper facility located in Escanaba, Michigan, shall operate a continuous emission monitoring system to measure $NO_X$ emissions from Boiler 8 in conformance with 40 CFR 60 appendix B Performance Specification 2.

(3) The reference test method for assessing compliance with the limit in paragraph (i)(1) shall be a continuous emission monitoring system operated in conformance with 40 CFR 60 appendix B Performance Specification 2. A new 30-day average shall be computed at the end of each calendar day in which the boiler operated. Each average shall include the most recent 30 days in which the boiler operated, and shall exclude days in which the boiler did not operate.

(4) For Boiler 9, also identified as EU9B03, a limit of 0.27 #/MMBTU.

(5) The reference test method for assessing compliance with the limit in paragraph (i)(4) shall be a test conducted in accordance with 40 CFR 60 appendix A Method 7.

(6) *Recordkeeping.* Owner/operator shall maintain the following records regarding Boiler 8 and Boiler 9 for at least five years:

(i) All CEMS data, including the date, place, and time of sampling or measurement; parameters sampled or measured; and results.

(ii) All stack test results.

(iii) Daily records of fuel usage, heat input, and data used to determine heat content.

(iv) Records of quality assurance and quality control activities for emissions measuring systems including, but not limited to, any records required by 40 CFR part 60, appendix F, Procedure 1.

(v) Records of all major maintenance activities conducted on emission units, air pollution control equipment, and CEMS.

(vi) Any other records identified in 40 CFR 60.49b(g) or 40 CFR part 60, Appendix F, Procedure 1.

(7) *Reporting.* All reports under this section shall be submitted to the Chief, Air Enforcement and Compliance Assurance Branch, U.S. Environmental Protection Agency, Region 5, Mail Code AE–17J, 77 W. Jackson Blvd., Chicago, IL 60604–3590.

(i) Owner/operator of Boiler 8 shall submit quarterly excess emissions reports for the limit in paragraph (i)(1) no later than the 30th day following the end of each calendar quarter. Excess emissions means emissions that exceed the emissions limit specified in paragraph (i)(1) of this section. The reports shall include the magnitude, date(s), and duration of each period of excess emissions, specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the unit, the nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted.

(ii) Owner/operator of Boiler 8 shall submit quarterly CEMS performance reports, to include dates and duration of each period during which the CEMS was inoperative (except for zero and span adjustments and calibration checks), reason(s) why the CEMS was inoperative and steps taken to prevent recurrence, and any CEMS repairs or adjustments.

(iii) Owner/operator of Boiler 8 shall also submit results of any CEMS performance tests required by 40 CFR part 60, appendix F, Procedure 1 (Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits).

(iv) When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted during the reporting period, such information shall be stated in the quarterly reports required by sections (i)(7) of this section.

(v) Owner/operator of Boiler 9 shall submit reports of any test measuring NOx emissions from Boiler 9 within 60 days of the last day of the test. If owner/operator commences operation of a continuous NOx emission monitoring system for Boiler 9, owner/operator shall submit reports for Boiler 9 as specified for Boiler 8 in paragraphs (i)(7)(i) to (i)(7)(iv).

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