


Office Memorandum

DATE: February 17, 2012

TO: MPCA Citizens' Board

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SUBJECT: Regional Haze State Implementation Plan – Status and Update

Minnesota Pollution Control Agency (MPCA) staff have prepared this briefing memorandum to update the Board on the status of Minnesota's Regional Haze State Implementation Plan (SIP) and describe the actions being taken to prepare a Supplemental Regional Haze SIP.

In December 2009, the MPCA submitted a Regional Haze SIP to the U.S. Environmental Protection Agency (EPA) for approval. EPA did not act on Minnesota's Regional Haze SIP submittal. EPA informed MPCA that certain limits, part of the Best Available Retrofit Technology (BART) requirement, must be made enforceable before EPA could approve the SIP. In order to complete these requirements, the MPCA developed and is proposing to submit a Supplemental Regional Haze SIP containing the additional emission limits. The MPCA published a notice in the State Register on December 19, 2011, concerning the Supplemental Regional Haze SIP, and took comments on the supplement until February 3, 2012.

Under normal processing of SIPs, the MPCA would complete the public process, including responding to public comments, finalize the SIP, and then submit the SIP to EPA. EPA would then take action on the SIP. However, due to a settlement agreement with several groups that sued EPA for failing to act on Regional Haze SIPs, EPA is required to propose approval of Minnesota's SIP or a Federal Implementation Plan (FIP) in January 2012, with final action by May 15, 2012.

Therefore, the EPA and MPCA are working together to conduct a "parallel processing" of the Regional Haze SIP. The MPCA placed the draft Supplemental SIP on notice, and officially requested EPA review. On January 25, EPA published a noticed of proposed rulemaking that proposes to approve Minnesota's Regional Haze SIP as long as the action of the Supplemental SIP is completed and submitted to EPA. Once the MPCA completes our process and officially submits a SIP to EPA, they will finalize their proposed approval.

Regional Haze SIP Timelines

Action	Date
Regional Haze SIP Public Notice Period	July 20, 2009 – September 3, 2009
Regional Haze SIP Approved by MPCA Board	December 15, 2009
Regional Haze SIP Submitted to EPA	December 31, 2009
EPA notifies MPCA that emission limits must be in an enforceable document	December 2, 2010
EPA provides preliminary review of BART requirements	June 6, 2011
Public Notice and Comment Period Supplemental Regional Haze SIP	December 19, 2011 – February 3, 2012
Public Notice and Comment Period for EPA's Proposed Approval of Minnesota's Regional Haze SIP	January 25, 2012 – February 24, 2012

MPCA Citizens' Board Decision Item on Supplemental Regional Haze SIP	March 27, 2012
EPA's Deadline for Final Approval of Regional Haze SIP	May 15, 2012

In March, the Board will be asked to make a decision on whether the proposed Supplemental Regional Haze SIP should be submitted to EPA as drafted, or if changes are necessary prior to submittal. At that time, we will be presenting the supplemental SIP, the comments received and our responses to comments.

The purpose of this briefing is to re-familiarize the Board with the Regional Haze program and the contents of the Regional Haze SIP.

Overview and Regulatory Background

Regional haze results from fine particulate matter (PM_{2.5}) in the air; the particles scatter and absorb light, thereby adversely impacting visibility.

The main contributor to visibility impairment is secondary PM_{2.5}, fine particles formed from chemical reactions of other pollutants in the atmosphere. The chemical make-up of the main fine particles contributing to visibility impairment in Minnesota's Class I areas are ammonium sulfate, ammonium nitrate, and organic carbon. These haze-causing pollutants result from widespread and varied emission sources, but particularly from sources of sulfur dioxide (SO₂) and nitrogen oxides (NO_x).

The Clean Air Act (CAA) designates National Parks and Wildernesses as "Class I Areas"; areas of special concern due to their pristine nature. Section 169A of the Clean Air Act establishes a national goal of remedying existing visibility impairment and preventing any future visibility impairment that results from man-made air pollution. In 1980, EPA first promulgated regulations to improve visibility, focusing on visibility problems that are "reasonably attributable" to a single source or to a small group of sources. This is known as "reasonably attributable visibility impairment", or RAVI.

The Clean Air Act Amendments of 1990 added Section 169B to address regional haze, which is visibility impairment resulting from a wide range of sources over a large geographic area. In 1999, EPA promulgated regulations, the Regional Haze Rule (RHR, 40 CFR § 51.300-309), to address visibility impairment from haze. The RHR sets a goal of restoring natural visibility conditions to Class I areas by 2064, so that visitors to these areas can enjoy the scenic vistas.

The State Implementation Plan (SIP) is the vehicle that states use to demonstrate compliance with the Clean Air Act; SIPs must be approved by EPA. Through the Regional Haze SIP, the states demonstrate what emission reductions they will achieve in order to improve visibility. The SIP must address haze in any Class I area the state impacts. Minnesota's Regional Haze SIP addresses the Boundary Waters Canoe Area Wilderness (BWCAW) and Voyageurs National Park (VNP), along with Isle Royale National Park in Michigan.

Minnesota's Regional Haze SIP

As mentioned above, the Regional Haze program has a goal of restoring natural visibility conditions to Class I areas by 2064. Because of the long timeframe of the program, this SIP covers only actions to be taken through 2018.

The Regional Haze SIP has four key components as described below:

- Reasonable Progress Goals - The state must set goals for visibility conditions of the Class I areas within the state borders for 2018, and the SIP must contain all the control measures required to meet the visibility goals. The goals must provide reasonable progress towards achieving the ultimate goal of no man-made visibility impairment.

- Visibility Conditions - The state must determine the existing baseline (2000 – 2004) visibility conditions on the best, or clearest, days and the worst, or haziest, days at each Class I area. The state must also estimate natural visibility conditions.
- Long-term Strategy - The state must include a long-term strategy to address regional haze which includes emission limits or other measure needed to meet the Reasonable Progress Goals (RPGs).
- Best Available Retrofit Technology (BART) - BART is designed to regulate older facilities in certain source categories that have previously largely been exempt from Clean Air Act (CAA) regulations. The SIP must contain emission limits and schedules of compliance for those facilities that are subject-to-BART.

The SIP also must include pieces such as ongoing visibility monitoring and a commitment to periodic reports and revisions to ensure continued progress.

Minnesota's Regional Haze SIP included these components. However, additional information was needed in order to complete the requirements for BART. The rest of this memo will focus primarily on those needs.

Best Available Retrofit Technology (BART)

BART was designed to regulate older facilities in certain source categories, reducing emissions of SO₂, NO_x, and particulate matter to reduce each facility's adverse impact on visibility.

BART requires an evaluation of large facilities in certain source categories built between 1962 and 1977. Any of these facilities that adversely impact visibility in any Class I area are subject-to-BART, and states must determine an appropriate control technology or work practice and a corresponding emission limit for each source. Minnesota has several sources subject to BART: five power plants and all six taconite mining/processing facilities.

The state must make BART determinations on a case-by-case basis. Section 169A(g) of the Clean Air Act requires BART determinations to consider all available retrofit technologies, the cost of compliance, the energy and non-air quality environmental impacts of compliance, any existing pollution control technology at the sources, the remaining useful life of the sources, and the degree of visibility improvement which may reasonably be anticipated from the use of BART. EPA published *Guidelines for BART Determinations Under the Regional Haze Rule*, which provides direction for determining BART.

EPA also offers states the ability to implement an alternative to BART, such as an emissions trading program, as long as the alternative provides greater reasonable progress than would be seen from application of source by source BART.

In the Regional Haze SIP, the MPCA determined the appropriate control technology or work practice to limit emissions at each subject-to-BART source. Associated emission limits for NO_x, SO₂, and PM were provided for all five power plants and for control of some pollutants at the taconite plants.

BART for Taconite

However, the MPCA did not provide all the necessary BART emission limits for NO_x and SO₂ for the taconite facilities.

The MPCA determined that BART at the taconite plants did not, in most cases, include additional controls. Because of the size and unique nature of the industry, along with the fact that very few controls have been tried on indurating furnaces, the available retrofit technologies were limited. Therefore, the MPCA determined that BART to control NO_x emissions was good combustion practices. BART to control SO₂ emissions was operation of the existing wet scrubbers, which although designed to reduce PM emissions also provide some reduction of SO₂ emissions.

Because very little emissions data was available from the taconite industry, the MPCA was unable to set emission limits for these work practices. Instead, from 2007 through 2009, the MPCA and the taconite companies entered into Administrative Orders where the companies would do increased emission monitoring and provide emissions data to the MPCA. This data has now been provided and analyzed by MPCA staff. The supplemental SIP includes the remaining BART limits needed for the taconite industry.

In addition, because EPA approval of the BART limits is necessary, the MPCA did not make the BART limits enforceable through facility permits or other mechanisms (such as an Administrative Order). In December 2010, the MPCA was notified by EPA that enforceable limits would be needed before EPA could act to approve the Regional Haze SIP. The supplemental SIP includes the necessary limits in Administrative Orders, so that EPA can act to approve Minnesota's SIP.

BART for Power Plants

As noted above, states have the ability to develop an alternative to BART, as long as the alternative provides for greater reasonable progress towards the ultimate visibility goal. EPA offered one national "BART alternative" for power plants. EPA modeling showed that the Clean Air Interstate Rule (CAIR), a cap-and-trade program to reduce emissions of NO_x and SO₂ from power plants in the Eastern part of the U.S., provided greater visibility improvement than the installation of source by source BART. Therefore, EPA indicated that a state that participates in the CAIR trading program does not need to require BART-eligible power plants to install and operate a source-specific BART determination.

In the initial Regional Haze SIP placed on public notice in February 2008, the MPCA indicated our intent to make this "CAIR=BART" determination, due to the fact that controls were being installed on Minnesota's power plants in preparation for CAIR. However, CAIR was subject to legal challenge, and was subsequently remanded to EPA for changes. Since one of the questions that arose was whether Minnesota should be included in the CAIR region and trading programs, Minnesota was removed from the CAIR program. Because of this, Minnesota's 2009 Regional Haze SIP submittal includes source-specific BART limits for each subject-to-BART power plant. Again, however, these limits were not included in enforceable form.

In 2011, EPA promulgated the Cross-State Air Pollution Rule (CSAPR), also known as the Transport Rule, to replace CAIR. Minnesota is included in the CSAPR region and trading programs, which began on January 1, 2012. On December 23, EPA signed a notice indicating that CSAPR achieves greater reasonable progress towards natural visibility conditions than source-specific BART. Therefore, the Supplemental Regional Haze SIP returns to the strategy of allowing the cap-and-trade program to substitute for participation in BART.

On December 30, implementation of CSAPR was stayed by the courts.

Long-Term Strategy

The Regional Haze SIP also includes a long-term strategy for reaching the reasonable progress goals, which focuses on emissions in the six counties adjacent to Minnesota's Class I areas and is called the Northeast Minnesota Plan.

The first part of the plan sets a goal of an overall 30 percent reduction in combined NO_x and SO₂ emissions by 2018 from larger point sources in Northeastern Minnesota. There is an interim target of a 20 percent reduction by 2012. At this time, the area is projected to meet the targets.

The second part of the plan called for the taconite facilities to undertake pilot testing of emission controls to reduce SO₂ and NO_x emissions. This was placed in the SIP due to the lack of known effective controls for the industry, as well as the lack of any other driver for emission reductions. Since the submittal of the Regional Haze SIP, EPA has promulgated revised National Ambient Air Quality Standards (NAAQS) for these two pollutants. The MPCA believes that these new NAAQS will result in a need for the industry to develop

controls. The supplemental SIP therefore revises the long-term strategy to replace the requirement for pilot testing with a plan for the taconite industry to demonstrate compliance with those standards.

Documents and References

Information pertaining to the Regional Haze SIP can be found on the MPCA's website at: <http://www.pca.state.mn.us/air/regionalhaze.html>. The supplemental SIP document is available under the link titled "Minnesota's Draft Supplemental Regional Haze SIP," while the 2009 submittal is available under the link titled "Minnesota's Regional Haze SIP". Details concerning the BART determinations, along with the comments from stakeholders during the initial public notice period and during the development of the BART determinations, can be found under the link titled "Appendices to Revised Draft Regional Haze SIP."

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