



United States
Department of
Agriculture

Forest
Service

Superior
National
Forest

8901 Grand Ave. Place
Duluth, MN 55808-1122
Phone: (218) 626-4300
Fax: (218) 626-4398

File Code: 2580

Date: January 13, 2012

Mr. David Thornton
Assistant Commissioner
Minnesota Pollution Control Agency
520 Lafayette Rd
St. Paul, MN 55155

Dear Mr. Thornton:

Thank you for the opportunity to review the Regional Haze State Implementation Plan Supplement (Supplement). The Supplement focuses on the application of best available retrofit technology (BART) to the electrical generating units (EGUs) and taconite plants in Minnesota. BART is the last remaining part of Minnesota's Regional Haze Plan that needs to be completed.

The focus of the Supplement is to set emission limits that reflect the BART determinations made in the December 2009 Regional Haze Plan submittal. We believe that the methodology used by your agency to set the BART emission limits results in limits that are too high and ask that you reconsider them. Our technical analysis is attached to this letter. In many cases your proposed BART emission limits are higher than current actual emissions and therefore could lead to emission increases instead of the decreases needed to improve visibility.

Our high level of interest in the program is tied to our role as Federal Land Manager of the Boundary Waters Canoe Area Wilderness (BWCAW) and our "affirmative responsibility" to protect air quality related values of this area, one of which is visibility. As you know, we have taken a very active role in the implementation of the Regional Haze Program. We have interacted with your staff for almost ten years and sent formal comment letters regarding regional haze on: April 10, 2007; March 5, 2008; April 28, 2009; July 10, 2009; May 10, 2010; and August 11, 2011. We believe it is our shared goal that this Supplement, and the entire Regional Haze Plan, make reasonable progress possible toward the national goal of preventing any future and remedying any existing, impairment of visibility in mandatory Class I areas, such as the BWCAW.

We are concerned your proposed BART limits will not make the progress envisioned by Congress. In the case of the EGUs, we and EPA found that some of the source-specific BART limits you previously proposed were too lenient (see our 2009 and 2011 letters and EPA's September 3, 2009 and June 6, 2011 letters). We also disagree with your alternate proposal of allowing the EGU cap and trade program (the Cross-State Air Pollution Rule, CSAPR) to be substituted for source-specific BART. For Minnesota we find CSAPR is more lenient than both your original, and our recommended lower emitting, source-specific BART limits. It is clear that the source-specific BART limits provide the greatest visibility improvement and request that you use the values the EPA and FLMs proposed. The uncertain federal regulatory landscape (as



evidenced by the recent stay of CSAPR) gives an additional reason to choose the source-specific BART limits.

Minnesota and Michigan have the responsibility to oversee the taconite industry in the United States since all of the facilities are in these two states. The Regional Haze Rule is just one of the air quality regulations facing the industry. In the past we were told there were economic and technological reasons why environmental improvements could not be made in this industry. It appears that times have changed. We are encouraged by the leadership shown by US Steel to comprehensively address these issues. They have installed modern emission monitoring systems and have proposed to install, or already installed, modern air emission controls for sulfur, nitrogen and mercury. After some tough years, the industry has returned to profitability.¹ We encourage you to level the playing field across the industry and thereby improve visibility, environmental quality and public health.

We look forward to working with you to address our comments. If you have questions about any of the technical comments in the attachment please feel free to contact Trent Wickman, Air Resources Management (218-626-4372; twickman@fs.fed.us), of my staff.

Sincerely,

/s/ Timothy A. Dabney
TIMOTHY A. DABNEY
Acting Forest Supervisor

cc: Catherine Neuschler
Matt Rau
John Summerhays
Don Shepherd
Pat Brewer
Tim Allen
Robert Irvine
Todd Hawes

¹ For example, Cliffs Natural Resources, Inc. posted net income exceeding \$200 million in each of the last four years, including over \$1 billion in 2010. See <http://investing.businessweek.com/research/stocks/financials/financials.asp?ticker=CLF:US>

Technical Comments

Electrical Generating Units - EGUs

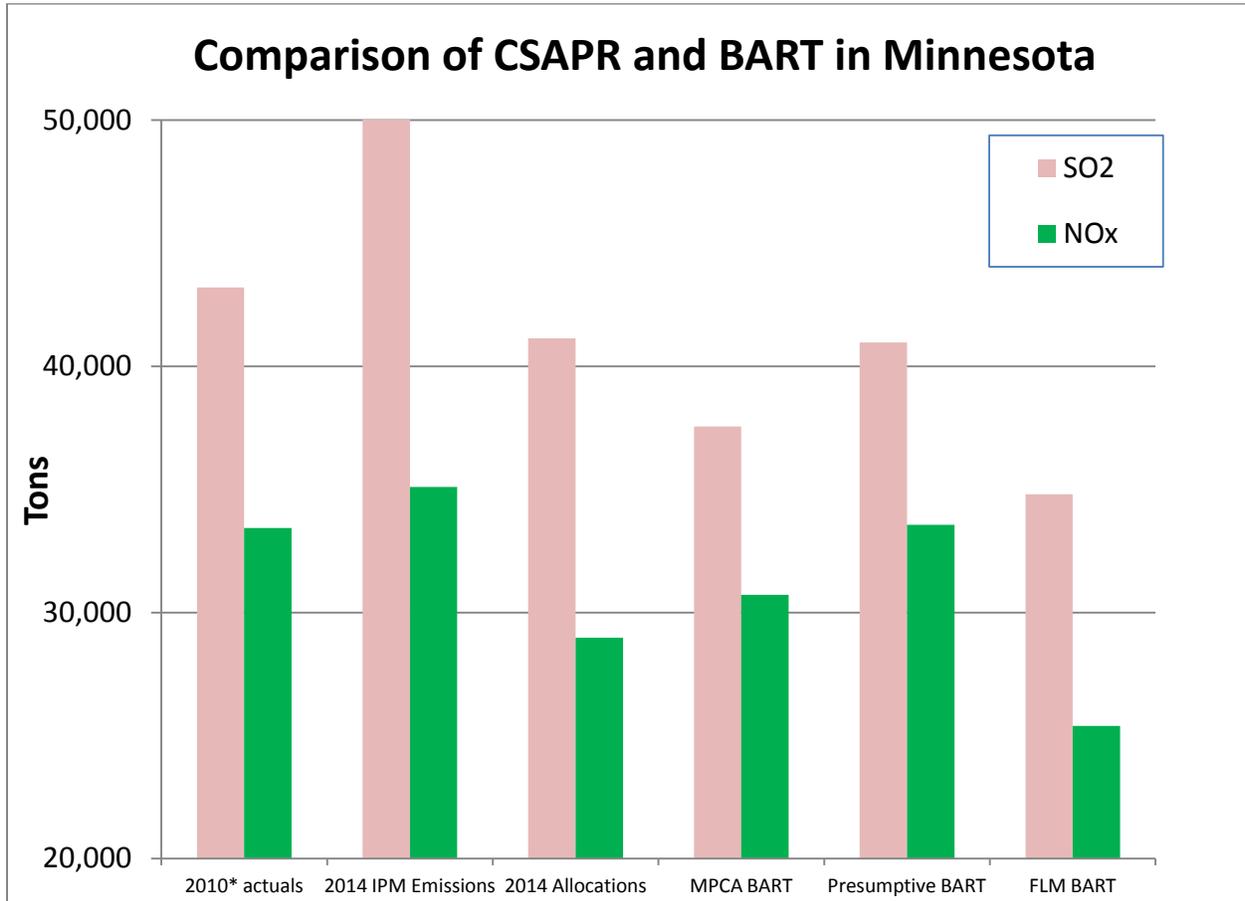
In letters dated April 28, 2009 and July 10, 2009 we commented on the source-specific EGU BART determinations proposed in the 2009 draft regional haze plan. In general we found that the BART emission limits for some of the facilities should have been lower, resulting in lower emissions (see previous letters for details). As was done in the 2008 draft of the regional haze plan, the transport rule (now known as the Cross-State Air Pollution Rule, CSAPR) is being substituted as BART for the source-specific EGU BART determinations.

We do not agree that CSAPR is better than source-specific BART in Minnesota. No state-specific demonstration has been made that we are aware of. In the Supplement the emissions budget under the previous transport rule is compared to CSAPR. We do not see any value in this comparison. Both are different versions of the same trading program.

Instead we attempted to compare source-specific EGU BART to CSAPR for Minnesota in Figure 1. The graph shows that the IPM prediction of the affect of CSAPR in 2014 (i.e. “2014 IPM Emissions”) is an increase in emissions over current (2010) actual emissions. In addition CSAPR is well above both what was proposed as source-specific BART by MPCA and what we and the other Federal Land Managers (FLMs) proposed as source-specific BART. Without any other information specific to Minnesota we find source-specific BART to be far superior to CSAPR.

We strongly encourage the MPCA to reject using CSAPR as a replacement and believe the source-specific BART limit approach should be maintained. The MPCA should also re-evaluate the limits determined for Xcel Energy’s Sherburne County and Northshore Mining’s Power House and consider the comments made by EPA (in letters dated September 3, 2009 and June 6, 2011) and ourselves (in our 2009 letters). The recent stay of CSAPR puts its future in doubt. The regional haze plans are more than four years overdue already. Please do not delay the plan and visibility improvement any longer by keeping Minnesota’s Regional Haze Plan tied to any of the federal trading rules. Please use source-specific BART limits in this plan.

Figure 1 – Comparison of Emissions Under CSAPR and BART for BART-subject Units in Minnesota



Taconite Facilities

In their 2009 regional haze plan submittal the MPCA proposed that for the taconite facilities that primarily used natural gas as a fuel;

"For the taconite furnaces, BART for NOx is an operating standard of *good combustion practices in combination with some proposed process changes*, while BART for PM is equivalent to the taconite Maximum Available Control Technology (MACT) standard, and BART for SO₂ is generally *existing particulate scrubbers optimized for SO₂ removal*. The MPCA is also requiring application of better emission measurement systems to set a NOx BART emission limit, SO₂ limits at lines that burn high sulfur fuels, and determine compliance."

In the *highlighted* portions above it can be seen that the MPCA proposed BART controls for this group of units. The facilities have to take actions during operations to optimize scrubbers (for example, adjust scrubber liquid pH) and follow good combustions practices (for example, adjust

the air to fuel ratio). Scrubbers can also be optimized physically by optimizing the scrubbing water distribution inside the vessel. The MPCA was unclear as to the specifics of each BART control option, but they were clear that BART was *not* “no control.”

Due to a lack of emissions data, limits could not be set at that time. Most of the facilities now have continuous emission measurement systems (CEMS) and data from some of these were used to develop the proposed BART limits. We have repeatedly advocated that all facilities install these systems, and encourage the MPCA to take this opportunity and level the playing field by requiring the last few facilities to follow suit. As illustrated in a recent report by Minntac on their successes at reducing NO_x “In order to reduce NO_x emissions it is necessary to know what the emissions are on a short term basis. This enables real time data to be used when testing and tuning the equipment to better understand and evaluate how the changes are affecting NO_x performance.”¹ Stated another way, to be serious about reducing NO_x, CEMS must be installed.

The Supplement says the MPCA felt that at least one year of emissions data was needed from each facility in order to determine the appropriate BART limits.” It then goes on to say that only 150 hours of data was used to set the limits for most facilities. This is about six days versus the one year originally proposed and no explanation is given as to why such a small data set was chosen. We can only speculate that this was due to the fact that some of the facilities refused to install CEMS while others (such as Minntac) had CEMS installed and therefore had over a year’s worth of data.

To compensate for this lack of data, the Supplement discusses how the goal of the testing was to collect -

“a minimum of 150 one-hour data points under the range of [furnace] operating parameters that influence NO_x emissions. The range of each operating parameter during testing should be representative of furnace’s operating range for the parameters in the 12 months previous to testing.”

Our view is that the testing should’ve been done under operating conditions that represent BART, as determined previously by MPCA to be good combustion parameters and scrubber optimization. Instead the incentive for the companies was to operate at the highest emitting levels during the testing. There is no other documentation in the Supplement regarding whether BART operating practices were being followed during the tests.

A further concern is the use of a 99% confidence interval. In other recent permit-related work the MPCA has used 95%. The MPCA chose a 99% value:

“due to the need for limits to be met during all operating conditions, including during times of startup, shutdown, and malfunction.”

Other technology-based limits, such as best available control technology (BACT) limits, are not set this way. The correct way is to set a separate limit for startup, shutdown, and malfunction (SSM) conditions and one for regular operations. Otherwise if an overall limit was set to encompass all possible emission scenarios (normal operations and SSM) the resulting limit

¹ US Steel Minntac Line 6 Low NO_x Burner Final Report and Facility NO_x Management, 12/1/11

would be inflated and not represent the capabilities of BACT. We believe a similar approach should be taken for BART.

The use of the 99% level in combination with a limited data set, while doing a good job of statistically encompassing all possible emission scenarios, artificially inflates the emission limits, which in the end do not require the facilities to operate according to BART.

United Taconite (United)

We believe the BART determination for United Taconite does not follow the Clean Air Act and does not follow the conditions in its permit.

United has two taconite lines. Previously it fired primarily natural gas in Line 1 and coal/coke in Line 2. This was the operating scenario under consideration when the original BART proposal was made by MPCA. For both lines NO_x BART was proposed as good combustion practices. For SO₂ BART, scrubber optimization was proposed for Line 1 and a limit of 1.7 pounds of SO₂ per million BTUs (lb/MMBtu) was proposed for Line 2 that could be met with a scrubber and/or fuel blending. We provided compelling evidence in a letter dated July 10, 2009 that the MPCA's own analysis showed the Line 2 SO₂ limit should be 0.68 lb/MMBtu.

In August 2010 MPCA issued United a permit for a plant expansion that also allowed Line 1 to burn coal. United used the BART-required emission reductions at Line 2 to avoid Federal New Source permitting requirements for the expansion. We commented to MPCA and EPA that we believed this was not allowed under the Clean Air Act. In spite of this, the MPCA issued United a permit for the expansion that included a condition to address BART on the now coal-fired Line 1:

Within 120 days of being notified by the MPCA in writing of the final proposed NO_x BART limits for Lines 1 and 2 (EU 040 and EU 042), the Permittee shall submit an application for a permit amendment to incorporate into its air emissions permit either (1) NO_x and SO₂ BART emission limits as proposed or (2) a BART alternative as described in the December 2009 Regional Haze State Implementation Plan submittal.

Alternatively, the Permittee may submit, within 120 days of the written notification, an updated BART analysis based on the modified Lines 1 and 2 for the facility with an appropriate permit amendment application to incorporate proposed NO_x and SO₂ BART limits into its air emissions permit

The Supplement states "On December 8, 2011, United Taconite proposed that the NO_x and SO₂ limits set as part of the abovementioned permit amendment be incorporated as the BART limits for the facility." It appears that the option chosen by United is not one of the three included in their permit. Nonetheless MPCA proposes to accept these limits "because these limits provided greater annual reductions of NO_x and SO₂ than would be provided by the MPCA's initial BART limits."

This approach is problematic for a number of reasons.

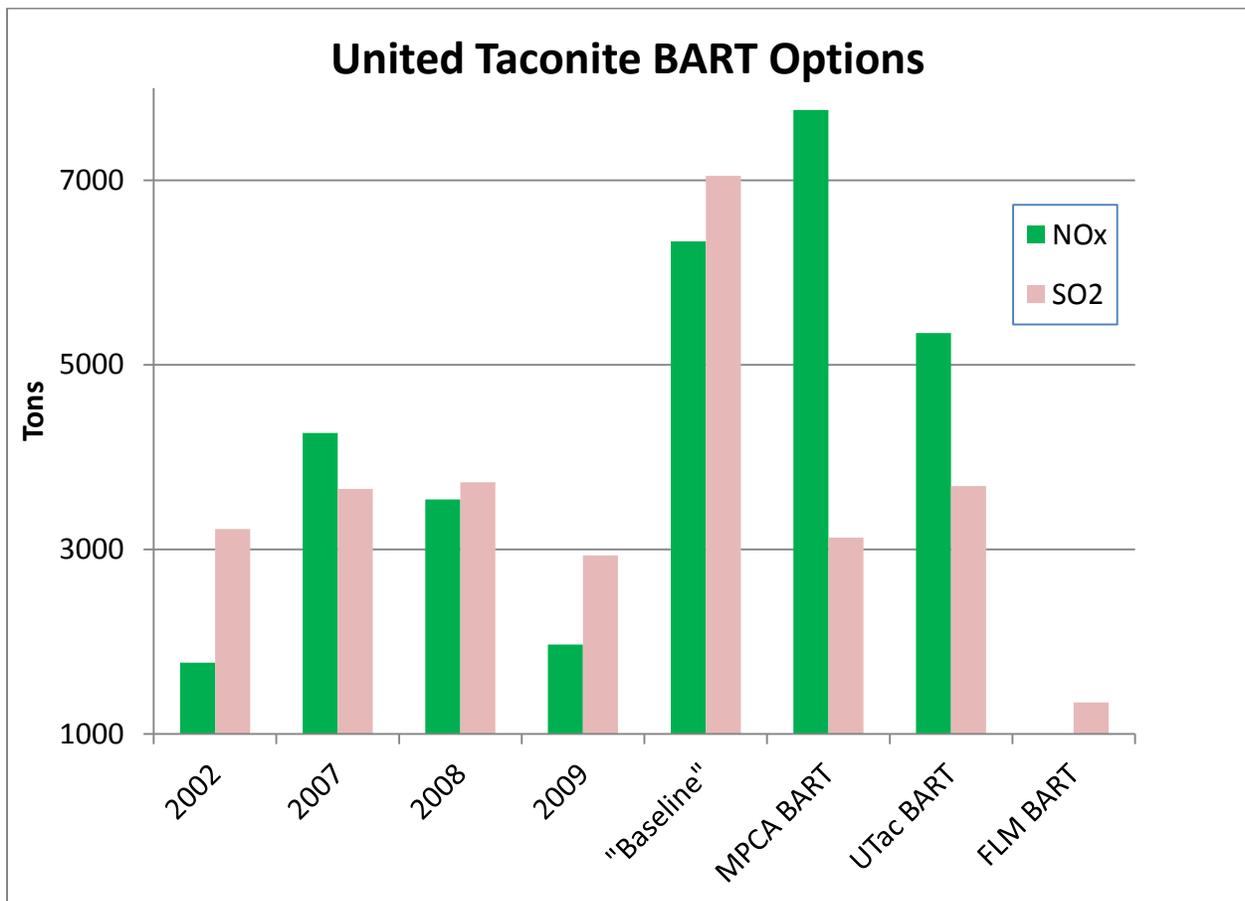
- It is unclear how United's proposal complies with its permit requirement included above. Is it a BART alternative? If so, what is the initial BART determination for coal-fired Line 1? To our knowledge no BART determination has been completed for a coal-fired Line 1. According to 40 CFR 51.308(e)(1)(ii)(A) the BART determination must consider

the best system of continuous emissions control technology taking into account the following *factors*: “the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use at the source, the remaining useful life of the source, and the degree of improvement in visibility.” We find none of this information in the Supplement.

- The “reductions” in United’s proposal were calculated from an inflated baseline. The baseline values used in the Supplement rely on the baseline emissions value calculated in the permit for the plant expansion. Under those regulations the facility is free to choose the highest emitting two years in the past ten. As can be seen in Figure 2, the result is a value well above recent actual emissions.
- A major reason United’s proposed BART limits are more restrictive than the MPCA’s is because the MPCA’s NO_x limits were set artificially high for many of the same reasons detailed above. In the case of SO₂, as stated above, we believe the limit for line 2 should be 0.68 and not 1.7 lb/MMBtu.

The combination of these factors results in paper emission reductions. The following graph illustrates the point. It also includes actual emissions for 2002, 2007, 2008, and 2009.

Figure 2 – Emissions of NO_x and SO₂ Under Various BART Options for United Taconite



The Supplement includes a table that is used to “demonstrate that the MPCA’s baseline BART proposal is essentially unconstraining, except for the SO₂ emissions limit for Line 2. Compared to past actual emissions, the MPCA’s BART proposal results in about a 2500 tons per year decrease in overall emissions of NO_x and SO₂ (*from “baseline”*). The proposal by UTac (*United*) results in a 4350 tons per year decrease in overall emissions as compared to the past emission scenario (*“baseline”*), and 1855 tons per year as compared to MPCA’s BART determination.” Note, clarification was added to the above text with the italicized words.

Figure 2 shows that all the BART proposals are unconstraining except for our BART proposal (which is based on the original BART determination for Line 1 in combination with a limit of 0.68 lb/MMBtu for Line 2). Since a proper BART analysis was not submitted for NO_x, we have no information from which to propose a BART limit for NO_x. Therefore no value was included in Figure 2 under FLM BART.

In summary please submit a full BART analysis for coal-fired Line 1 and correct the NO_x BART analysis for Line 2. The BART proposal in the Supplement does not include a consideration of the Clean Air Act factors for BART. It is irrelevant that the emission limit chosen is less than both an inflated baseline value, and an inflated, initial BART determination. The emission limit should be selected as an outcome of an analysis of the Clean Air Act factors.

Long Term Strategy

As a part of the long term strategy the 2009 Regional Haze Plan includes the Northeast Minnesota Plan which sets emission reduction goals for 2012 and 2018 for NO_x and SO₂ from large sources in the six-county region. The Supplement expects that these goals will be met based on future emission projections. We would like to sound a note of caution. The most recent actual emission data cited was from 2009, a year where much of the taconite industry was shut down or curtailed. Future year projections have much uncertainty. To meet the 2012 and 2018 goals there will be very little room for any new projects other than those included in the projection, which generally were those that have already submitted permit applications.

While we agree in concept with MPCA’s plan to replace pilot testing with the 1-hr SO₂ and NO_x NAAQS modeling and compliance, we are concerned about possible changes to the NAAQS and their compliance provisions being contemplated by Congress. We are unsure what would happen to the administrative orders if, for example, the NAAQS are revoked. We would feel comfortable if the MPCA committed itself to a schedule to incorporate the 1-hr SO₂ and NO_x NAAQS into state rules and the State Implementation Plan so they are enforceable under state law and not affected by changes at the Federal level.