UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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SEP 16 2011

REPLY TO THE ATTENTION OF:

Bill Baumann
Acting Chief
Bureau of Air
Wisconsin Department of Natural Resources
101 South Webster Street
Madison, Wisconsin 53707-7921

Dear Mr. Baumann:

Thank you for your work preparing a draft State Implementation Plan (SIP) for regional haze. In our review, we have focused on your proposal for addressing the requirement for best available retrofit technology (BART) for the Georgia Pacific facility in Green Bay. The attachment provides comments on your draft SIP.

As discussed in the attachment, your draft SIP includes several unusual features that we find inconsistent with requirements given in our regional haze rule. We are particularly concerned about these issues given the timing of your plan development. It has been over two and a half years since we found that Wisconsin was overdue to submit its regional haze plan, and we are being sued by environmental groups to approve or to promulgate regional haze requirements in Wisconsin and most other states. We would prefer to establish these requirements in Wisconsin by prompt approval of a state plan rather than by federal promulgation, but we are concerned that lengthy discussion about unapprovable approaches might preclude reliance on a State submittal. At the same time, based on review by the Federal Land Managers of your prior (June 2010) draft BART determination, I believe that draft would likely serve as a suitable basis for developing an approvable plan.

I look forward to working with you to develop an approvable regional haze plan for Wisconsin. Please call me if you have questions, or your staff may call John Summerhays at 312-886-6067.

Sincerely,

Mary P. Lyson

for Cheryl L. Newton
Director
Air and Radiation Division

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Comments on Draft Wisconsin
Regional Haze Plan
Dated July 1, 2011

1. Wisconsin is proposing to establish the pertinent limits in a Title V permit for Georgia-Pacific. Title V permits are intended to compile existing applicable requirements and are generally not suitable instruments for establishing new requirements. Although you have a state regulation providing for establishment of the limits, we understand that the limits themselves do not currently exist in a detailed and enforceable form that may be compiled in a nonpermanent Title V permit. We believe that the limits must be established in a permanent administrative order or other such permanent and enforceable document.

2. The draft amended BART determination for Georgia-Pacific indicates that BART has been defined for similar facilities as 95 percent control for sulfur dioxide (SO_2), but then BART is redefined as 2 percent lower based on data suggesting a 1.5 percent variability in SO_2 control at another facility across a slightly wider range in operation rate than is common at Georgia-Pacific. The 95 percent control level, as used elsewhere to define BART, already includes a compliance margin that takes account of control variability. For example, the AES Greenidge facility in North Carolina, found to be similar to the Georgia-Pacific facility, has been found to achieve reductions of about 95.3 percent to 96.8 percent, so that a limit requiring 95 percent control would provide a compliance margin even relative to the minimum control efficiency. Therefore, reducing the BART definition a further 2 percent effectively double counts an adjustment for control variability.

Furthermore, while Wisconsin argues based on the North Carolina data that a 2 percent reduction in the mandated control efficiency is warranted to accommodate lesser control efficiency at lower loads, the State then uses the reduced control level in contexts where the reduced control level does not apply. First, Wisconsin uses the reduced control level to calculate a revised total mass limit that by nature is more of a constraint on and more germane to higher load operation. Second, as discussed in comment 4 below, any 30-day average limit should require average and not minimum control efficiency. For these reasons, the definition of BART should reflect at least a 95 percent rather than a 93 percent SO_2 control level.

Similarly, Wisconsin applies an unsupported adjustment to its NOx emission limit. While the regenerative selective catalytic reduction (RSCR) system is acknowledged to achieve 75 to 80 percent reduction, Wisconsin mandates only 70 percent reduction, without justifying this lesser limit. It is also not clear why the performance of combustion control equipment at Alliant's Nelson Dewey Station (or, more precisely, a slightly lower control percentage than that facility achieved) is the appropriate control percentage for the Georgia-Pacific facility. Indeed, in a separate control alternative, Wisconsin evidently considers combustion control (using overfire air) capable of achieving 60 percent emission reduction.

3. The draft limits are expressed in several different forms. Apparently Georgia-Pacific

would be allowed to choose among several options of sets of limits with which to comply, and would be authorized to change its choice periodically. In fact, the draft permit terms provided in the draft plan are written in a form that suggests that the company may comply with any one of five options at any time. Since some limits are more or less stringent according to circumstances (e.g., the mass cap being less stringent at lower operating rates), letting the company choose limits means that the company is allowed to comply with whichever limit is least stringent at the time. Even if the company must obtain a permit revision to change its choice of limits, this results in a less stringent set of limits than would be the case if the company were always subject to any one of the limits. That is, even if all of the individual limits applied permanently required BART, the option to pick and choose limits could make the set of choices less stringent than BART. Furthermore, issuing a permit that offers multiple choices of limits also may make the set of limits unenforceable, insofar as an inspector cannot simply refer to the permit to identify the applicable limit. Therefore, we recommend that Wisconsin establish each limit as independently enforceable, without authorizing a choice among the limits with which to comply.

4. Compared to its original BART proposal, Wisconsin is now proposing extended averaging times, while relaxing the emission limits. Use of an extended averaging time makes it feasible to comply with a more stringent limit, such as the midpoint of the control range rather than the minimum control level. For example, the evidence from the AES Greenidge facility in North Carolina, which Wisconsin uses to help define the control level to be achieved at the Georgia-Pacific facility, suggests that a more appropriate 30-day average limit would reflect 96 percent control rather than 95 percent control. It is inappropriate to allow Georgia-Pacific to comply on a 30-day average basis with a limit that is less stringent than the limit that reflects BART on a short-term basis.

5. The amended draft Georgia-Pacific BART determination includes an adjustment to baseline emissions. This adjustment is described as reflecting the expectation that different fuels will be used in the future, but the discussion provides no acceptable rationale for using an alternate fuel scenario as the baseline for determining BART. The draft plan observes that the regional haze rule allows consideration of existing conditions, but the draft plan is predicated on major deviations from existing conditions, particularly in assuming a switch to a new, higher sulfur coal and in assuming a resumption of operations of two currently shutdown boilers. By this means, Wisconsin derives an adjusted baseline with substantially greater emissions than "current conditions."

A useful contrast may be drawn between determining boiler fuel characteristics for a BART determination and determining boiler fuel characteristics for a best available control technology determination for a new source. Since new sources by definition do not have historical fuels, the determination of limits representing best available control technology sometimes requires an element of speculation about the fuels that will be available. However, in the case of BART determinations (as with major modifications of existing sources), there is a history of fuel use, and, unless cleaner burning fuel warrants

consideration, the fuel to be used is assumed to have the same characteristics as the historically burned fuel.

The discussion of anticipated use of alternate fuels suggests that discontinuing use of petroleum coke could be a cost-effective means of reducing SO_2 emissions. While the discussion notes that this fuel switch makes relatively little difference in post-control emissions, this fuel switch is also likely to be highly cost-effective, in part by allowing the company to reduce the size and cost of the emission control system. The appropriate means of considering alternative fuels is in a BART engineering analysis that considers fuel switching as an emission reduction option. It is inappropriate to adjust the baseline from which BART is determined to incorporate potential fuel switches, particularly potential fuel switches that increase emissions.

6. Wisconsin proposes to establish limits that address the combined emissions of multiple boilers, including two boilers subject to BART ("B26" and "B27"), and three boilers not subject to BART ("B24," "B25," and "B28"). Section V. of the BART guidelines (Title 40 Code of Federal Regulations 51 Appendix Y) urges consideration of averaging across units that are all subject to BART. However, these guidelines do not address criteria for averaging across both BART and non-BART sources.

Averaging across both BART and non-BART sources raises difficult questions as to how to determine the appropriate baseline. For example, two of the non-BART boilers (B24 and B25) at Georgia-Pacific are not currently operating. Therefore, including any emissions from these boilers in a baseline from which an overall averaged limit is determined would in effect give the company credit for continuing to have zero emissions from these boilers that in turn would allow less effective control of the BART boiler.

Since the BART guidelines do not address trades that involve sources not subject to BART, issues like this must be addressed in accordance with EPA's economic incentive program (EIP) policy, particularly the guidance on emissions averaging and on single source caps. This guidance is available at http://www.epa.gov/ttncaaa1/t1/memoranda/eipfin.pdf. A central tenet of this policy is that credits may only be granted for surplus emission reductions. As stated on page 38 of this policy, reductions may not be considered surplus except to the extent that the EIP (in this case, either emissions averaging or a source-specific emission cap) "results in more reductions than would have occurred without the program." The reductions that resulted from shutdown of the two boilers self-evidently occurred without the program and therefore cannot be considered surplus. That is, if Wisconsin wishes to include these two boilers in a cap covering emissions of multiple boilers, the cap must be determined from a baseline that includes zero emissions for these boilers.

The EIP policy also requires that emission caps covering multiple units provide an environmental benefit. Specifically, on page 52, the EIP policy states, "In terms of emission reductions, environmental benefit is measured from an emissions baseline that represents the

emissions that would have occurred if the EIP were not implemented." Thus, if Wisconsin wishes to include all of the boilers either in an average rate limit or a collective mass cap, the limit must be set to provide an environmental benefit relative to a scenario in which the two BART boilers are operating BART controls and the two boilers that are currently shutdown have zero emissions. EPA's EIP policy recommends providing environmental benefit by limiting emissions to 10 percent below the level that would be required with unit-by-unit limits.

7. While a previous BART assessment concluded that BART for Boilers B26 and B27 would include regenerative selective catalytic reduction (RSCR) for both boilers, the revised assessment concludes that RSCR is BART for one boiler and selective noncatalytic reduction is BART for the other boiler. Wisconsin does not provide adequate justification for this revised assessment. First, the envisioned design appears to involve two identical gas flows, which if treated separately would seem to warrant identical control systems. Second, postulating two gas flows, Wisconsin appears to argue that SO_2 emission rates will be too high in one of the gas flows to accommodate RSCR without causing excess SO_3 emissions. However, for reasons given in other comments here, the quantity of SO_2 emissions that reflects BART is substantially lower than the limits that Wisconsin is proposing to set. In addition, requirements for MACT and for attaining the SO_2 air quality standard will provide additional assurance that SO_2 emission rates will be well below levels where SO_3 emissions might potentially cause concern. Therefore, we believe that RSCR continues to represent BART for all of the NOx emissions of both BART boilers.

In addition, Wisconsin reduces the NOx control requirement to accommodate other control equipment configurations that are estimated to achieve nearly equivalent NOx control levels. However, the BART guideline does not provide for requiring lesser control efficiencies in order to accommodate alternative control options that have not been determined to represent BART.

8. Wisconsin proposes to offer Georgia-Pacific a compliance alternative in which the company may trade SO_2 emission reductions for excess NOx emissions, specifically to find the company in compliance even if NOx emissions exceed the NOx mass emission limit, provided that SO_2 emissions are below the SO_2 mass emission limit by at least twice the number of tons per year by which the NOx emission limit is exceeded. EPA finds that this alternative has not been adequately justified.

While EPA's regional haze rule offers some flexibility for establishing combinations of particular control measures that provide more or less control of particular pollutants, the rule does not provide for states to adopt limits that provide for a range of control levels for one pollutant that is dependent on the level of emissions of another pollutant. Georgia-Pacific can expect to be required to reduce SO_2 emissions substantially over the next several years. Georgia-Pacific will likely need to install emission control equipment to satisfy the maximum achievable control technology (MACT) regulation for industrial

boilers, and the SO_2 emission reductions will likely also be necessary to provide for attainment of the SO_2 national ambient air quality standard. If Wisconsin allows these SO_2 emission reductions (or reductions from reduced boiler usage) to replace the NOx reductions that would otherwise be required as BART, it is quite plausible that implementation of these reductions would allow Georgia-Pacific to implement no reductions of NOx emissions at all. In contrast, the baseline scenario involving standard limits requiring BART would require NOx emission control regardless of whether extraneous factors require or otherwise yield SO_2 emissions below BART levels. While Wisconsin is comparing visibility levels with various potential emission scenarios against visibility in 2002 to 2004, EPA is comparing visibility under these scenarios against visibility that would be expected under a standard scenario in which BART limits apply directly to the BART units. Consequently, Wisconsin's proposed approach must be considered to authorize Georgia-Pacific to cause more visibility impairment than would be authorized under an approach that applied standard BART limits.

Furthermore, Wisconsin has not fully demonstrated that scenarios with two tons lower SO2 emissions for every excess ton of NOx emissions relative to baseline emissions will yield improved visibility. Most importantly, Wisconsin's analysis addresses conditions that applied in 2002 to 2004, whereas the conditions that are of most interest are the future years, for example 2018, when the BART limits will apply. Many regulations will yield dramatically different air quality in the future than existed in 2002 to 2004, including the Cross-State Air Pollution Rule, the MACT rules for utilities and industrial boilers, and requirements for SO_2 emission reductions to meet SO_2 air quality standards. The differences in ambient conditions could make significant differences in the relative impacts of SO2 and NOx emissions, both by changing the relevant atmospheric chemistry and by changing what kinds of days are of most interest (e.g. what seasons are of most interest). Also worth noting is that Wisconsin's analysis addresses the impact of scenarios in which SO2 emissions are reduced by about 2.2 tons per ton of NOx emission increase, i.e. by more than a 2 to 1 ratio. It appears that Wisconsin does not present results for Class I areas other than Seney, and Wisconsin does not present average 20 percent worst day and average 20 percent best day results.

9. Wisconsin calculates a 30-day average mass cap by multiplying the BART boiler emission rate times a maximum daily operation rate. Use of a maximum daily rate rather than a rate representative of 30-day periods yields an unduly inflated 30-day average cap. If Wisconsin justifies setting a 30-day emissions cap, the cap must reflect no more than the emissions from achieving the BART level emission rate with operating rates representative of historic 30-day operating rates.