National Parks Conservation Association®
Protecting Our National Parks for Future Generations®

May 20, 2010

VIA EMAIL AND US MAIL

Gina McCarthy, Assistant Administrator
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U.S. Environmental Protection Agency
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RE: Promulgation of Regional Haze Rulemakings

Dear Assistant Administrator McCarthy,

January 15, 2011 marks the date by which EPA is required to promulgate a final Regional Haze Federal Implementation Plans (FIP) for each state that does not by then have a fully approved Regional Haze State Implementation Plan (SIP). 74 Fed. Reg. 2392 (January 15, 2009). We understand that, to date, no proposed Regional Haze FIP or SIP has been posted in the Federal Register for public comment, and that a significant number of states have yet to submit a proposed SIP for EPA review. Because EPA told states that their SIP submissions needed to be provided by January of this year to ensure final promulgation by January 15, 2011, it is now clear that EPA must soon issue draft FIPs to meet the January 15, 2011 deadline. With this impending deadline in mind, we are writing you with three specific requests.

First, we ask that you only approve SIPs or promulgate FIPs that provide the full degree of visibility protection for Class I areas as required by law. We offer seven recommendations that will help ensure this outcome. These recommendations do not address all of the requirements for an adequate Regional Haze plan, but are meant to highlight some key issues of concern that have come to our attention. Second, we are requesting your response to four questions that will allow us to determine how EPA intends to meet the January 15, 2011 deadline. Finally, we request a meeting with your office to discuss the issues contained herein.

Recommendations for Regional Haze SIPs/FIPs

Every year, millions of visitors to our national parks and wilderness areas experience views that are obscured by preventable pollution. The pollution that impairs a viewer's ability to see long distances, color and geologic formation at these national treasures also harms people, wildlife and our ecosystems by degrading air quality.

Through the 1977 amendments to the Clean Air Act Congress created the national goal of preventing any future, and eliminating any existing impairment of visibility in mandatory Class I areas

when impairment results from manmade air pollution. This goal is addressed in the 1999 Regional Haze program, which, among other things, requires reductions in sulfur dioxide, nitrogen oxides, and particulate matter from existing outdated coal-fired power plants and other large industrial air polluters that affect Class I areas. The Regional Haze program requires federally enforceable plans to reduce and ultimately eliminate air pollution that impairs visibility in Class I areas, in part by compelling the installation of "best available retrofit technology" (BART) for certain major stationary sources of pollution built before 1977.

To protect and restore air quality in our country's iconic wild spaces, the Regional Haze BART program provides an unparalleled opportunity to curb haze-causing emissions from some of the nation's oldest and most-polluting facilities. We encourage EPA to recognize the mandates bestowing responsibility upon Federal Land Managers to protect visibility in the Class I areas and support the findings of their expert analysis. We ask that you fulfill EPA's obligations under the Clean Air Act and protect the air resources of America's most treasured landscapes by taking the following seven steps.

1. **National Consistency for Regional Haze Plans**
   In promulgating rulemakings for Regional Haze SIPs or FIPs, EPA should ensure a strong degree of national consistency in determining BART for eligible sources. Until now, almost all retrofits to existing coal-fired electric generating units (EGUs) have occurred in the eastern U.S. in response to programs designed to reduce acid rain and ozone. To achieve the Clean Air Act's Regional Haze goals and to ensure nation-wide consistency with the Regional Haze Rule, EPA should require all states to meet the most stringent BART emission limits as more fully discussed below.

2. **Selective Catalytic Reduction to Control Emissions of Nitrogen Oxides**
   In addition to combustion controls, EPA should presumptively favor Selective Catalytic Reduction (SCR) as the appropriate BART control for the emissions of nitrogen oxides (NOx) from existing EGUs. SCR is cost-efficient, technically feasible and reduces emissions 90% or better, which far exceeds the capabilities of other available NOx control technologies. SCR also has the co-benefit of enhancing reduction of mercury emissions. As of 2008, 208 coal-fired boilers operated SCR systems, including 37 retrofits that achieved annual emission rates below .05lb/mmBtu. Since 2008, an additional 61 facilities have installed or are planning to install SCR.

   Some states have determined recently that SCR is BART for coal-fired boilers. For example, the Wyoming Department of Environmental Quality (WYDEQ) determined that a 0.07 lb/mmBtu NOx emission limit, premised on the installation of SCR, was BART at PacifCorp's coal-burning Naughton Unit 3 (330 megawatts). The South Dakota Department of Environment and Natural Resources proposed a BART-based NOx emissions limit of 0.10lb/mmBtu, premised on the installation of SCR at Otter Tail Power's coal-burning Big Stone Unit 1 (475 megawatt cyclone furnace).[1]

   Conversely, the Minnesota Pollution Control Agency determined that a NOx emission limit of 0.15lb/mmBtu, twice that of the Wyoming unit, satisfied BART. In the Minnesota example,

[1] Consistent with BART Guidelines, these are 30-day rolling averages.

the state only proposed low-NOx burners and over-fire air for Unit 1 (690 megwatts) and Unit 2 (683 megawatts) at Xcel's Sherburne coal plant. Both of the larger Sherburne units are similar in design and burn coal like that used at the Wyoming PacifiCorp plant. While the NOx limit at the Wyoming plants should be even more stringent, the contrast between state BART determinations for similar EGUs burning similar fuels is striking.

BART determinations are to be the result of the five factor analysis which considers the (1) costs of compliance, (2) energy and non-air quality environmental impacts of compliance, (3) any existing pollution control technology in use at the source, (4) remaining useful life of the source, and (5) degree of visibility improvement which may reasonably be anticipated from the use of BART.

BART determinations are to be source-specific and the result of the five factor analysis, and SCR emerges as the best available retrofit technology for NOx capable of meaningfully improving visibility while weighing the other factors in the analysis. In some cases, SCR is the only available technology that is capable of reducing NOx emissions from EGUs that burn low-grade fuel inherently high in NOx emissions and that are inherently difficult to control with other available technologies, such as combustion controls and Selective Non-Catalytic Reduction (SNCR) (e.g. Four Corners Power Plant Unit 4 and Unit 5, Leland Olds Unit 2, and Milton R. Young Units 1 and 2). Therefore, EPA must require revisions to SIPs, including Minnesota's, or issue FIPs to incorporate requirements for the installation of SCR with limits of 0.06[2] or lower on BART-eligible coal-fired EGUs. In addition, we note that changes to the National Ambient Air Quality Standards for ozone and NOx will soon be in place and that the installation of SCR on the country's aging coal plants provides an immediate route to help attain these standards.

3. **Adopting Presumptive BART Limits Does Not Provide Refuge from the Required Five-Factor BART Analysis**

Presumptive BART limits are intended as guideposts, not *de facto* standards suitable for adoption by all BART-eligible sources. Conducting a comprehensive five step BART analysis is an exercise critical to ensuring that a source will appropriately control its pollution and that a region will make reasonable progress towards meeting national visibility goals. While presumptive limits may be deemed as BART, they are the floor, not the ceiling. Presumptive limits may be BART, but only after a thorough analysis shows no more stringent limit is achievable.

The North Dakota Department of Health (NDDH) proposed sulfur dioxide (SO2) BART limits for Leland Olds Units 1 and 2, Milton R Young Unit 2, and Coal Creek Units 1 and 2 of 0.15 lb/mmBtu. While NDDH purported to do a case-by-case evaluation of BART for each EGU, it appeared that the case-by-case analyses were simply written to support the imposition of EPA's presumptive BART limits rather than to truly reflect the best level of continuous SO2 emission reduction at each EGU.

Colorado has explicitly stated that it considers presumptive BART to represent BART.

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[2] 30-day rolling average, equivalent to 0.05 lb/mmBtu on an annual average.

EPA's BART guidelines include presumptive BART emission limits for EGUs which were based on EPA's broad review of the control technologies and emission limits that could be met cost effectively at a wide range of coal-fired power plants. The presumptive BART limits developed by the previous administration did not consider impacts on visibility and typically were set at the least-stringent end of the range of potential limits. In addition, the cost thresholds used to support those limits were far below the costs generally accepted in Best Available Control Technology Analyses.

EPA's presumptive BART limits do not negate the need for a state to determine BART for each BART-eligible source on a case-by-case basis through a five factor analysis. As indicated above, however, the facts do not support a BART level any less protective than SCR for NOx.

4. **Cumulative Impact and Benefit Must be Considered as Part of Fifth Step in BART Analysis**

The cumulative impact of a source's emissions on visibility as well as the cumulative benefit of emission reductions must be considered as part of the fifth step in the BART analysis. In this regard we support the National Park Service's reasoning as articulated in the agency's comments on Salt River Project's proposed BART determination for Navajo Generating Station, July 24, 2009:

> ...[I]t is appropriate to consider both the degree of visibility improvement in a given Class I area as well as the cumulative effects of improving visibility across all of the Class I areas affected. It simply does not make sense to use the same metric to evaluate the effects of reducing emissions from a BART source that impacts only the one Class I area as for a BART source that impacts multiple Class I areas. And, it does not make sense to evaluate impacts at one Class I area, while ignoring others that are similarly significantly impaired. If we look at only the most-impacted Class I area, we ignore that the other Class I areas are all suffering from impairment to visibility "caused" by the BART source. It follows that, if emissions from the BART source are reduced, the benefits will be spread well beyond only the most impacted Class I area, and this must be accounted for.

For example, emissions from the TransAlta coal plant in Centralia, Washington cause or contribute to approximately 33 deciviews[3] of visibility impairment across a dozen Class I areas including Mount Rainier and Olympic national parks and the Columbia River Gorge. Analyzing visibility impairment as isolated occurrences in each protected airshed, Mount Rainier would be the most impacted with nearly 5 deciviews of impairment caused by the TransAlta plant. While a 5 deciview impairment is excessive, it represents only a fraction of the total visibility impairment caused by this plant. TransAlta believes that SCR would improve visibility at Mount Rainier by over 2 deciviews. The Park Service estimates this amount would

[3] *Deciview* means a measurement of visibility impairment. A deciview is a haze index derived from calculated light extinction, such that uniform changes in haziness correspond to uniform incremental changes in perception across the entire range of conditions from pristine to highly impaired. 40 CFR 51.301 A single source that is responsible for a 1.0 deciview change or more is considered to cause visibility impairment while a source that is responsible for a 0.5 deciview change is considered to contribute to visibility impairment. EPA 450/3-80-009b, "Guidelines for Determining Best Available Retrofit Technology for Coal-Fired Power Plants and Other Existing Stationary Facilities" (November 1980).

be greater, but also points out that SCR would improve visibility at all dozen Class I areas and Columbia River Gorge by 14 deciviews. The cost of SCR should be evaluated in the context of the cumulative visibility improvement of 14 deciviews, not simply the 2 deciview improvement at Mount Rainier.

Other examples of power plants with double-digit cumulative visibility impacts include: Portland General Electric's Boardman Plant (Oregon), Arizona Public Service Company's Four Corners Power Plant (New Mexico), PacifiCorp's Jim Bridger Plant (Wyoming), Basin Electric Power's Leland Olds Plant (North Dakota), Minnkota Power Cooperatives' Milton R. Young Plant (North Dakota), Salt River Project's Navajo Generating Station (Arizona), and Public Service Company of New Mexico's San Juan Generating Station (New Mexico).

Failing to account for a source's cumulative impairment and the cumulative pollution control benefit would result in a failure to acknowledge the regional approach to reducing haze. We urge EPA to ensure that BART analyses are inclusive of cumulative impacts and benefits that reflect *the degree of visibility improvement which may reasonably be anticipated from the use of BART.*

5. **Consideration of Dollars-per-Deciview Cost Assessment Approach**

While the BART guidelines provide several cost assessment techniques, we urge EPA to consider the dollars-per-deciview approach as an important supplementary method for analyzing cost effectiveness. The dollars-per-deciview approach accounts for the total annual pollution control cost divided by the visibility improvement as measured in deciviews where visibility improvement is the average 98th percentile visibility improvement at a Class I area, or if reviewing a polluting source within the airshed of multiple Class I areas, each Class I area's 98th percentile improvement value would be added together to assess cumulative deciview benefit.

The dollars-per-deciview approach directly accounts for the anticipated cost of achieving the objectives of the Regional Haze rule. As the BART program has evolved, the Federal Land Managers (FLM), as well as some states including Alaska, Massachusetts, North Dakota, Oregon and South Dakota, have developed and applied this approach since 2006. No other approach that incorporates an assessment of visibility improvements has proven to be as widely used by government. Accordingly, this FLM and state relied-on method of analysis, when properly and rationally applied, is entitled to deference and should be supported by EPA.

This approach is particularly illuminating for BART-eligible facilities such as the Four Corners Power Plant, which is located within the airshed of 16 Class I areas, causing an overall visibility impact between 25-46 deciviews[4], including impairment at Mesa Verde and Grand Canyon national parks. When controlling for nitrogen oxides, for example, and considering the source's combined impact over all Class I areas, the costs of low-NOx burners, over-fire air and SCR is $4.9 - $6.6 million/dv for all units at the Four Corners Power Plant, according to

[4] APS estimates visibility impact to be 25 deciview, while the National Park Service shows visibility impacts to exceed 46 deciviews.

the National Park Service.[5] Typical NOx control costs for a facility that impacts one Class I area is $10-20 million/dv, with a maximum of approximately $50 million/dv proposed by Colorado at the Martin Drake power plant.[6] The National Park Service has stated that post combustion controls and SCR at this facility would result in better than 27 deciviews of visibility improvement (compared to the 46 deciviews impact the Park Service assesses the current impact to be).[7]

6. **Enforceable Retirement Schedules and Interim BART Emission Limits**

A stand-alone commitment to retire a BART-eligible facility without interim BART emission limits in a timeframe which exceeds the five-year BART implementation schedule is an unacceptable substitute for a BART determination. EPA's regulations require implementation of BART within five years, and should a facility commit to shutdown after the five-year mark, interim BART emission limits are necessary to ensure appropriate reductions, and associated benefit, occur within the Regional Haze schedule for implementing BART. Moreover, a commitment to shutdown a facility as BART or otherwise part of a state's plan to make reasonable progress must be incorporated into a state's Regional Haze SIP and otherwise made enforceable.

Illustrative of this issue is Portland General Electric, which has proposed retiring the Boardman plant by 2020 without additional SO_2 pollution controls in the interim. In 2008 alone, Boardman's emissions included 11,314 tons of sulfur dioxide and 8,733 tons of nitrogen oxides. Emissions from the Boardman coal plant impair visibility in 14 Class I areas, including Mount Rainier and North Cascades national parks. To allow a facility to emit this quantity of visibility impairing pollutants for the next ten years runs counter to the intent of the Regional Haze Rule and BART program. Therefore any commitment to retire a BART-eligible facility must either: (1) be achieved in the five year BART compliance timeframe, or (2) if the retirement commitment is greater than five years it must be accompanied by sufficient interim emissions reductions (through controls, partial retirement, and/or nearby emissions offsets).

7. **Attaining the Goal of Natural Visibility Conditions by 2064**

The Regional Haze program is intended to restore visibility in Class I areas to "natural conditions," which is defined by EPA as visibility in the absence of impairment from manmade air pollution, by 2064. State, tribal or federal reasonable progress goals are to provide for a rate of improvement sufficient to be on a glide path to attain natural visibility conditions by 2064. Unfortunately, many states are not on schedule to meet the glide paths to natural conditions. EPA must require that the glide path and reasonable progress goals be reconfigured to ensure that the 2064 visibility goal is attained.

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[5] See National Park Service (NPS) comments on comments on Arizona Public Service (APS)'s Proposed Best Available Retrofit Technology (BART) Determination for Four Corners Power Plant (FCPP) (November 20, 2009).

[6] See USDA Forest Service Technical Comments: Four Corners Power Plant BART (March 19, 2009); See also 2009 NPS comments on APS's Proposed BART for FCPP at 12.

[7] Id.

Several states provide startling examples of the problem. If, for example, the state of Minnesota is to remain on its currently scheduled glide path, visibility impacts at Voyageurs National Park would not be eliminated until 2177 – or 113 years after the 2064 goal. According to the proposed Texas SIP, visibility at Big Bend National Park will not be restored until 2155. Washington State has proposed a SIP that will take 323 years to reach the visibility goal at Olympic and 86 years at Mt. Rainier, and yet the SIP contains no BART actual reductions[8] and only minor reductions (at the Tesoro refinery) for Reasonable Progress. These dates make a mockery of the Regional Haze program and show blatant disregard for Regional Haze regulations.

To further illustrate the issue; if Minnesota's current rate of progress goals are to remain without revision, in 2018 the 20% worst visibility days at Voyageurs will still suffer an 18.9 deciview impact; by 2064 that impact would be reduced by only an additional 2.6 deciviews. If the state is permitted to maintain this course, by the year that natural visibility conditions are to be attained, impairment at Voyageurs will still exceed the visibility goal by over 4-times the threshold. While the Regional Haze program allows for adjustment of the glide path, it is not realistic or appropriate to expect a very shallow starting glide path to suddenly become steep in order to meet the 2064 goal. As noted by the National Park Service in its comments on the Minnesota Regional Haze SIP, additional measures are reasonably available that would allow Minnesota to more expeditiously achieve the visibility goal for Voyageurs. It is now the responsibility of EPA to ensure that those reasonable measures are implemented.

In addition to the above recommendations, we urge EPA to ensure full compliance with all other requirements for Regional Haze plans, and to ensure that such plans fulfill the letter and purpose of the Regional Haze program.

Information Request

Would you kindly describe to us how EPA intends to meet the January 15, 2011 deadline (see, 74 Fed. Reg. 2392, January 15, 2009) by providing the following information:

1. A list of all states that have submitted proposed Regional Haze SIPs to EPA.

2. A list of all states for which a proposed Regional Haze SIP approval/disapproval or a proposed FIP has been published in the federal register.

3. The date or dates by which a proposed Regional Haze SIP approval or FIP must be published in the federal register in order for a final FIP or SIP approval to be promulgated by January 15, 2011.

4. The date or dates on which EPA intends to submit to the federal register a proposed Regional Haze SIP or FIP for each state for which a proposed SIP approval or FIP has not already been published.

[8] The Flex-Fuel project at TransAlta's coal-fired power plant in Centralia, Washington is a fuel-switch driven by economic factors and the additional NOx controls at the LaFarge cement plant result for a separate EPA enforcement action.

In conclusion, our organizations represent hundreds of thousands of people throughout the nation that care deeply about protecting the air quality in our national parks and wilderness areas. The Regional Haze Rule and BART program provide a substantial and unique set of opportunities to reduce air pollution. We believe that the will of Congress to protect the air quality in these treasured landscapes and restore visibility in their airsheds must be honored. We strongly encourage the Environmental Protection Agency to consider the above recommendations and require substantial reductions in haze-causing pollutants and otherwise advance measures that will improve regional visibility.

Sincerely,

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