United States Department of the Interior

NATIONAL PARK SERVICE
Air Resources Division
P.O. Box 25287
Denver, CO 80225

IN REPLY REFER TO:

TAKE PRIDE IN AMERICA

January 30, 2009

N3615 (2350)

Mr. Andy Ginsburg
Administrator, Air Quality Division
Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204-1390

Dear ~~Mr. Ginsburg~~ Andy:

On November 12, 2008, we received Oregon's draft implementation plan to address regional haze for review. We appreciate the opportunity to work closely with the State through the initial evaluation, development, and, now, subsequent review of this plan. Cooperative efforts such as these ensure that, together, we will continue to make progress toward the Clean Air Act's goal of natural visibility conditions at all of our most pristine National Parks and wilderness areas for future generations.

This letter acknowledges that the U.S. Department of the Interior, U.S. Fish and Wildlife Service (FWS), and National Park Service (NPS) have received and conducted a substantive review of your revised proposed Regional Haze Rule implementation plan in fulfillment of your requirements under the federal regulations 40 CFR 51.308(i)(2). Please note, however, that only the U.S. Environmental Protection Agency (EPA) can make a final determination regarding the document's completeness and, therefore, ability to receive federal approval from EPA.

As outlined in a letter to each State dated August 1, 2006, our review focused on eight basic content areas. The content areas reflect priorities for the Federal Land Manager agencies, and we have enclosed comments associated with these priorities. Our major concern with the plan is the determination of best available retrofit technology (BART) for the Portland General Electric Boardman facility. We look forward to your response, as per section 40 CFR 51.308(i)(3). For further information regarding our comments, please contact Bruce Polkowsky (NPS Air Resources Division) at (303) 987-6944, or Tim Allen of the FWS Branch of Air Quality at (303) 914-3802.

We understand that the Oregon Department of Environmental Quality is soliciting comments to Portland General Electric's proposed rule amendments to change the BART determination for the Boardman facility. Since these changes are not currently part of the State's proposed rule, we are submitting comments on this issue under separate letter head.

Again, we appreciate the opportunity to work closely with the State of Oregon and compliment you on your hard work and dedication to significant improvement in our nation's air quality values and visibility.

Sincerely,

Christine L. Shaver
Chief, Air Resources Division
National Park Service

Sincerely,

Sandra V. Silva
Chief, Branch of Air Quality
U.S. Fish & Wildlife Service

Enclosure

cc:
Brian Finneran
Oregon Regional Haze Coordinator
Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204-1390

Department of the Interior Comments on the November 2008 draft of the Oregon Regional Haze Plan (Plan) for Implementing Section 308 (40CFR51.308) of the Regional Haze Rules

Overall Comments

The air quality staffs of the National Park Service and U.S Fish and Wildlife Service applaud the Oregon Department of Environmental Quality (ODEQ) on drafting a well written and comprehensive plan. It covers all of the policy areas of concern to us as outlined in our August 2006 letter to the States regarding development of regional haze plans.

In particular, we appreciate the comprehensive documentation of the visibility conditions and information base for each of the Class I areas in Oregon found in Chapters 3 and 4. This information provides a firm foundation for tracking visibility conditions going forward as envisioned by the regional haze rule. We agree that the three major pollutants of concern for improving visibility are sulfates, nitrates, and organic particulates.

We have serious concerns regarding the determination of the emissions limits representing best available retrofit technology for the Portland General Electric (PGE) Boardman facility. In addition, we have serious concerns with the alternative proposal submitted to ODEQ by PGE in December 2008. Since the ODEQ has not taken any formal action to adopt PGE's proposal into its plan, we are submitting comments on the proposal under separate letterhead.

Chapter Comments

Chapter One: Introduction

Section 1.6 lists the Class I areas in Oregon that are addressed by the Plan. The Plan should address any Class I areas outside of the State where human-caused pollutant emissions from Oregon are reasonably anticipated to cause or contribute to visibility impairment. Some of that information is included in discussion of BART source impacts later in the Plan. Information is also included in Section 12.3.1, so Chapter One language should be broadened.

Chapter Two: SIP Development and Consultation Process

No comments

Chapter Three: Introduction to Oregon Class I Areas

No comments

Chapter Four: Technical Information

Section 4.3 describes IMPROVE monitoring and the State's reliance on IMPROVE for future tracking. Most State Plans have indicated that they will rely on continuation of the IMPROVE network to serve as the basis for their monitoring strategy. We concur that IMPROVE is the most efficient way to continue adequate monitoring and appreciate the State's commitment to consultation and support to assure adequate and representative data collection and reporting by the IMRPOVE program.

Chapter Five: Basic Plan Elements

No comments

Chapter Six: Baseline and Natural Visibility Conditions

No comments

Chapter Seven: Pollutants Causing Visibility Impairment in Oregon Class I Areas

This chapter does an excellent job of presenting the major aerosol species contributing to visibility impairment and the distribution of those species over time. Such assessment is needed to develop policy options for addressing the episodic nature of impairment episodes which drive the regional haze rule index of averaging the twenty percent worst and twenty percent best days.

A technical note on the graphic on page 73: the Worst 20 percent daily range on the pie chart is given as 24.8 to 89.2 Mm-1. The monthly average chart below has an August 2002 monthly average data point close to 500 Mm-1. The daily data may have been flagged due to clogging or other reason, but it would seem the wild fires in August 2002 would have had an extreme daily value to drive the monthly average that high.

Chapter 8: Emissions Source Inventory

The emissions tables presented in Chapter 8 were taken from the WRAP TSS which we interpret to mean these projected emissions do not represent of BART or federally enforceable emissions limits taken to remove a source from being subject to BART. Neither do they represent emissions reductions resulting from reasonable progress measures under the long-term strategy, such as controls on the Boardman facility. It would be useful to have a summary table that represents all of the anticipated emissions changes between the base year inventory and 2018.

Chapter 9: Source Apportionment and Regional Haze Modeling

This chapter reports sulfate and nitrate contributions as modeled by the WRAP using the PSAT technique which assumed boundary conditions of the model that were crude regarding spatial scale. Since the origin of the sulfate at the model boundaries can not be

known and since the PSAT work did not directly address apportioning a fraction of sulfate to natural sources, we believe the "outside domain" contribution is highly uncertain for most of Oregon's Class I areas. If there is WEP information for nitrate and sulfate it should be summarized in the Plan as well.

Table 9.3-1 is very informative for summarizing the anticipated progress toward the 2018 goal. We applaud the review of progress by aerosol type on pages 127-132. Again, we assume that these projections do not represent additional progress from BART and the long-term strategy components.

Chapter 10: Best Available Retrofit Technology (BART) Evaluation

On pages 139 and 140 the Plan discusses a consideration of cumulative impact modeling when considering sources for BART analysis which was not adopted for this plan. We encourage the State to commit to work with us and other partners in developing a protocol for assessing cumulative impacts from anthropogenic sources as part of the long-term strategy. Since regional haze results mainly from the accumulation of small impacts in most areas of the West where overall visibility conditions are better than the more industrialized sections of the Midwest and Southeast, a common assessment protocol would support ongoing progress in future revisions to the Plan.

Page 148 describes the applicable federally enforceable permit limits applied in lieu of BART for four sources. For the Portland General Electric Beaver Power Plant and the Georgia Pacific facility, the details of daily emissions restrictions and the formulae for limiting emissions need to be disclosed in the SIP. These processes are not absolute emissions limits in the traditional sense and it is not clear how these processes will limit impacts that would have triggered BART review.

We are concerned that the ODEQ is considering revising its proposal to reduce fine particulate matter (PM10), sulfur dioxide (SO2), and nitrogen oxides (NOx) emitted by Portland General Electric's (PGE) Boardman Plant (Boardman). The plant is located within 300 km of 14 Class I areas, including Mount Rainier and North Cascades National Parks (which are Class I areas administered by the National Park Service--NPS). Modeling analyses have shown that the plant causes visibility impairment in all of these 14 Class I areas. This represents the greatest magnitude and extent of visibility impairment we have seen to date from any single source subject to BART. Our continued review of the ODEQ proposal now leads us to believe that, if any changes should be made, they should lower the proposed limits on SO2, NOx, and PM10 and expedite their application.

We have developed a comprehensive review of the proposed Boardman BART determination which we are sending under separate letter head to Mr. David Collier, Air Quality Planning Manager. We request that letter and its enclosures be considered part of the SIP regulatory record for consideration by the State. We summarize the information contained in that letter below.

Cost-Effectiveness Metrics

ODEQ has relied primarily upon PGE's cost estimates (instead of those lower estimates produced by ODEQ's consultant) in deriving the cost-per-ton ($/ton) of pollutant removed and the incremental cost for the control strategies it evaluated. While this $/ton approach is recommended by the EPA BART Guidelines, it is important that the costs be substantiated, the emission reductions be reasonably estimated, and the results placed into the proper perspective.

Cost analyses should follow the EPA BART Guidelines and make greater use of EPA's Office of Air Quality Planning & Standards (OAQPS) Control Cost Manual (Cost Manual) and vendor quotes and estimates. Instead, PGE has used a mix of various costing methods, as well as unsupported estimates. While we agree with PGE that inflation must be a factor, we have been advised by EPA OAQPS that this factor should be based upon the Chemical Engineering cost indices, which we have incorporated into our analyses. We also agree that the costs of major capital projects had been increasing rapidly (although that may have changed with the recent global recession), but inflation is an issue faced by all major industries and should not become an excuse for inaction.

We also believe that the cost-per-deciview of visibility improvement ($/dv) metric can be an appropriate tool to evaluate the costs and benefits of reducing emissions from a source that is relatively close to one or more Class I areas. And, we emphasize that BART is not necessarily the most cost-effective solution. Instead, it represents a broad consideration of technical, economic, energy, and environmental (including visibility improvement) factors.

Visibility Improvement Metrics

BART is unique in that it incorporates an environmental benefit component, visibility improvement, into the analysis. While we commend ODEQ for presenting data on the cumulative impacts and benefits of the control strategies it evaluated, ODEQ has not described how it used that information. BART is much more than a simple $/ton technological exercise, and greater emphasis should be placed upon addressing visibility improvement.

We suggest that ODEQ review its dispersion modeling results to asses the relative effectiveness of reducing SO2 versus NOx at the Boardman site. Our analysis of the ODEQ modeling results leads us to conclude that it is much more effective to reduce NOx there than SO2. (Of course, we support reductions in all pollutants.) As we will show, ODEQ has proposed SO2 scrubbing as BART, but rejected Selective Catalytic Reduction (SCR), even though addition of SCR would yield greater visibility improvements at a lower cost per deciview of improvement.

SO2 BART For Boardman

ODEQ has proposed that SO2 BART at Boardman is a 30-day rolling average limit of 0.12 lb/mmBtu based upon application of Semi-Dry Flue Gas Desulfurization (SDFGD). ODEQ has estimated that its SO2 BART proposal would cost $36.6 million per year, and reduce SO2 emissions by 11,988 tons per year (tpy). ODEQ placed great weight on the calculated $3,055/ton of this strategy. ODEQ further estimates that this reduction in SO2 emissions would result in a 1.04 dv improvement in visibility at Mt. Hood, and a cumulative improvement of 10.59 dv summed across all 14 Class I areas. (ODEQ's modeling analysis showed that, for every 1,000 tons of SO2 reduced, visibility at Mt. Hood would improve by 0.09 dv, and by 0.88 dv across all of the Class I areas.) The cost/dv for improvement at Mt. Hood alone is $35 million. The cost/dv averaged for all 14 Class I areas is $3.5 million.

NOx BART for Boardman

ODEQ has proposed that NOx BART at Boardman is a 30-day rolling average limit of 0.28 lb/mmBtu based upon a combination of Low-NOx Burners (LNB) and Modified Over-Fire Air (MOFA). ODEQ has estimated that its NOx BART proposal would cost $3.7 million per year, and reduce NOx emissions by 4,756 tpy. ODEQ placed great weight on the calculated $782/ton of this strategy. ODEQ further estimates that this reduction in NOx emissions would result in a 0.58 dv dv improvement in visibility at Mt. Hood, and a cumulative improvement of 4.62 dv summed across all 14 Class I areas. The cost/dv of improvement was $6 million at Mt. Hood and $0.8 million across all 14 Class I areas.

ODEQ has rejected addition of SCR to the combination of LNB and MOFA on the basis of cost. ODEQ has estimated that this NOx BART strategy would cost $26.8 million per year, and reduce NOx emissions by 8,647 tpy. ODEQ placed great weight on the calculated $3,096/ton of this strategy. ODEQ further estimates that this reduction in NOx emissions would result in a 1.84 dv improvement in visibility at Mt. Hood, and a cumulative improvement of 12.31 dv summed across all 14 Class I areas. (ODEQ's modeling analysis showed that, for every 1,000 tons of NOx reduced, visibility at Mt. Hood would improve by 0.21 dv, and by 1.42 dv across all of the Class I areas.) The cost/dv of improvement was $15 million at Mt. Hood and $2.2 million across all 14 Class I areas.

Although the cost of adding SCR to the combined NOx control system results in greater costs than the LNB+MOFA strategy proposed by ODEQ as BART, the resulting NOx BART strategy would yield greater visibility improvement at a lower annual cost and a lower cost per deciview of improvement than proposed by ODEQ for its SO2 BART strategy. Based upon ODEQ's own data (as shown its Table 24), a combination of LNB+MOFA+SCR is more cost-effective and produces greater visibility improvement than the strategy ODEQ has proposed for SO2, and should therefore be accepted as BART for NOx.

Chapter 11: Reasonable Progress Goal Demonstration

Table 11.3.2-1 represents the WRAP TSS apportionment of sulfate and nitrate using the PSAT modeling which, as mentioned earlier, had a very uncertain computation of contribution from outside of the modeling domain and does not address the distinction between natural and anthropogenic sources of sulfate in the boundary conditions. Use of this data without acknowledging these shortfalls could result in weakening the case for additional progress on sulfate and nitrate sources. In addition, the use of available WEP information would provide a range of impacts that is likely more representative than just the PSAT results. In addition, the table should include any Class I areas outside of Oregon that may have similar impacts to those listed here.

The assessments on page 166-171 indicate some very cost effective measures on a dollar per ton basis, yet the State chose not to implement them in the long-term strategy at this time. The Plan does commit the State to do a comprehensive review over the next 5 years including the sources noted at this time. Again, we urge the State to reconsider controls on the few sources with lower control costs now which could be implemented as part of the long-term strategy. We also encourage the State to work with us and the WRAP on a better assessment of source contributions to address the weaknesses of the PSAT modeling done to date.

Chapter 12: Long-Term Strategy

We applaud the comprehensive review provided in the Long-Term Strategy. The inclusion of the Phase I visibility program review is very helpful. We also appreciate the linkage of this Plan to the PSD / NSR rules since we view those programs as critical to maintaining the best visibility days.

We agree with the State that the further consideration of BART and non-BART sources as well as prescribe burning from all land types would improve the long-term strategy. Again, with respect to industrial sources of NOx and SO2, we encourage the State to implement controls indentified by the current four-factor analysis as cost-effective now. In addition, the State should address the effect of its proposed BART and Long-Term Strategy actions for PGE Boardman on the projected reasonable progress goals, those actions change the Western Regional Air Partnership modeling of reasonable progress goals contained in TSS.

With respect to evaluation of additional smoke management protection measures, we agree with the statement in the draft SIP *"in order to make further achievements in reasonable progress, the Department believes greater efforts are needed through smoke management."* From the data provided it is clear that wildland fire has a significant impact on visibility in Oregon's Class I areas.

We suggest that the evaluation method for Spring and Fall prescribe-fire effects described on page 203 should also consider any link between seasonal impacts from prescribe burning and reduction of extreme impacts from wildfire during the summer season.

We agree with the remainder of the evaluation methods the ODEQ has identified to better determine the impact of prescribed fire to visibility in selected Class I areas by 2013. However, we believe that additional controls should not be delayed until that time if the analysis is completed sooner. In fact, from the data provided it appears it may now be possible to attribute a portion of the visibility impairment in some of the Class I Areas to prescribed fire.

It is unclear if the above evaluation will include rangeland burning. Rangeland burning should be included in the analysis.

Under the section titled Additional Smoke Management Protection Assessment it is stated that any additional smoke management requirements developed as a result of the evaluation above *"would rely upon "basic" smoke management techniques, as opposed to adopting more advanced techniques."* Oregon currently has an "enhanced" smoke management program. It does not make sense to only add "basic" smoke management to an already "enhanced" program. The State should also take credit for all of the Western Regional Air Partnership fire program recommendations, such as best management practices, and tracking of all fire emissions, that are already part of the State's fire program. The above statement should be modified.

It is unclear in the draft if smoke from prescribed burning, including rangeland burning, has the potential to impact any Class I areas in other States. The draft should address this issue.