



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

Air Resources Division

P.O. Box 25287

Denver, CO 80225



November 15, 2010

N3615 (2350)

Mr. Paul Tourangeau
Director, Air Pollution Control Division
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

Dear Mr. Tourangeau:

In August and September 2010, the National Park Service and Fish and Wildlife Service received Colorado's draft determinations of Best Available Retrofit Technology (BART) and draft regional haze state implementation plan for review. We appreciate the opportunity to work closely with the Colorado Air Pollution Control Division on the development and review of your plans. We commented in December 2007 on an earlier version of the BART determinations and implementation plan. The current BART determinations and implementation plan are significantly improved over the earlier versions, and we commend the State for your efforts.

This letter and enclosures provide our comments made in consultation with the Fish and Wildlife Service concerning the BART determinations that will be considered at the public meeting on November 18 and 19, 2010. We will provide separate comments on the alternative to BART determinations and reasonable progress analyses that will be considered at the December 2010 public hearing. Only the U.S. Environmental Protection Agency (EPA) can make a final determination regarding the completeness and approvability of the documents.

We look forward to continuing to work with your staff to improve visibility in our Class I national parks and wilderness areas. For further information regarding our comments, please contact Pat Brewer at (303) 969-2153.

Sincerely,



John Bunyak
Acting Chief, Air Resources Division

Enclosure

cc:
Laurel Dygowski
U.S. EPA Region 8
80C-EISC
1595 Wynkoop Street
Denver, Colorado 80202-1129

National Park Service Comments
Colorado Draft Regional Haze State Implementation Plan
November 15, 2010

The National Park Service and the Fish and Wildlife Service appreciate the opportunity to work with Colorado Department of Public Health and Environment (CDPHE) to protect visibility in our Class I areas. CDPHE has revised the determinations of Best Available Retrofit Technology (BART) and the draft Regional Haze State Implementation Plan (SIP) that were first drafted in 2007. The revised documents were released for public review in September 2010 and are significantly improved. We commend Colorado's efforts.

The revised SIP addresses all the key elements that the Federal Land Managers consider in our review. The technical analyses of visibility monitoring data, emissions inventory, and regional air quality modeling are based on the work of the Western Regional Air Partnership (WRAP). These analyses have been updated from the 2007 draft SIP and are reported in Technical Support Documents for each Class I national park or wilderness area in Colorado.

Our current comments focus on Colorado's BART determinations that will be reviewed at the public hearing on Nov 18 and 19, 2010. We will comment on the alternative-to-BART determinations, reasonable progress analyses, and long term strategy prior to the December public hearing.

Colorado BART Modeling

We support Colorado's BART modeling protocol and Colorado's methods to apply the CALMET meteorological model and CALPUFF air pollutant dispersion model to evaluate the visibility impacts from Colorado sources subject to BART. The methods were developed in cooperation with the WRAP (2006) and are consistent with BART modeling analyses by other western states and the earlier BART modeling performed by CDPHE.

In particular, we support use of the 4 km grid scale for meteorological and dispersion modeling. The quality of the available meteorological observational data that is used as input to the meteorological model is not improved by reducing the size of the modeling grid. The finer grid scale modeling has not been demonstrated to be more accurate in projecting the complex meteorology that controls transport of pollutants from the source to the sensitive receptors.

We support the monthly-average, regionally-representative ammonia (NH₃) values selected by Colorado for use in the CALPUFF model to represent the reaction of nitrogen oxide (NO_x) emissions from the source with available ambient NH₃ gas to form ammonium nitrate particles. The National Park Service measures NH₃ gas as well as other several other gaseous, aerosol, and particulate forms of nitrogen at monitoring sites across the state. There is a clear spatial gradient in NH₃ values with lower values on the western slopes, higher values along the Front Range, and highest values in the agricultural areas of eastern Colorado. The NH₃ values used by Colorado are supported by NPS monitoring data. We commend Colorado for conducting NH₃ sensitivity analyses to inform their BART modeling decisions.

We agree with Colorado's determination of sources that are subject to BART.

To guide decisions on cost effective controls for NO_x emissions, CDPHE set a threshold cost (\$5000/ton) and threshold benefit (0.2 dv for selective non-catalytic reduction, SNCR, and 0.5 dv for selective catalytic reduction, SCR). We appreciate that CDPHE has established clear criteria for NO_x control decisions. We would prefer that Colorado consider cumulative benefits at all Class I areas and not just the maximum impact in evaluating benefits.

Overall we commend Colorado for comprehensive BART analyses. In general, we agree with the technologies evaluated as potential BART controls for the subject sources. Our comments on the BART determinations for each BART facility are briefly summarized below and detailed in separate enclosures.

Public Service Company of Colorado (Xcel) Hayden Station

- For SO₂ we believe that the existing Lime Spray Dryers should be able to achieve lower emission limits. If cumulative impacts to multiple Class I areas had been considered, greater visibility benefit would likely justify addition of scrubber module. We recommend requiring a 0.07 lb/mmBtu limit for each unit and allowing PSCo to determine methods to meet this limit.
- For PM we recommend lower emissions limits for the existing baghouses. Baghouses have been permitted for other sources at 0.015 lb/mmBtu. Stack tests for the existing baghouses demonstrate much better performance (0.004-0.006 lb/mmBtu) than current emissions limits.
- For NO_x, we commend Colorado for requiring Selective Catalytic Reduction (SCR) for both boilers. We provide evidence from EPA's Clean Air Markets Division database from Continuous Emissions Monitoring that boilers similar to these are achieving 0.06 lb/mmBtu on a 30-day rolling average basis. We recommend that SCR for Hayden be permitted at 0.06 lb/mmBtu on 30-day rolling average.
- We believe that costs of SCRs at Hayden have been overestimated. Applying EPA's Control Cost Manual we calculate costs for SCR in the range of \$1700-2000/ton rather than \$3400-4100/ton as reported by CDPHE using PSCo's estimates.

Colorado Energy Nations (CENC)

- We agree with the technologies reviewed to control sulfur dioxide (SO₂), particulate matter (PM), and nitrogen oxides (NO_x).
- CENC has overestimated included costs for installation and operation by including costs that are not allowed in EPA's Control Cost Manual.
- Following the Control Cost Manual, we recommend that Dry Sorbent Injection would be cost effective for SO₂ control.
- We agree that the existing baghouses are appropriate BART controls for PM but recommend that Colorado set lower emissions limits. Other baghouses have been permitted at 0.015 lb/mmBtu.
- Correctly calculated costs for NO_x controls using Low NO_x Burners plus Separated Over Fired Air plus Selective Non-Catalytic Reduction technologies (SNCR) are below the \$5000 threshold and support these controls as BART for both Boilers #4 and #5.

CEMEX Cement Plant

- We agree with the technologies considered for NO_x controls for the cement kiln.
- We support SNCR and encourage Colorado and CEMEX to give serious consideration to adding fuel substitution with tire derived fuel plus indirect firing with Low NO_x Burners to the SNCR.
- We agree with that the existing fabric filter baghouses represent BART for PM.

Colorado Springs Utilities Drake Plant

- For SO₂, we believe that the costs of Dry Sorbent Injection for Drake Unit 5 were overestimated. Calculating costs consistent with EPA's Control Cost Manual, we recommend that DSI is cost effective at \$1844/ton and 0.12 dv visibility improvement at Rocky Mountain National Park and should be selected as BART.
- We agree with consideration of the NeuStream system as an alternative to Lime Spray Dryers for Units 6 and 7.
- For PM₁₀ we recommend a lower emissions limit that is more consistent with the demonstrated performance of the existing bag house in stack tests (0.0111-0.0186 lb/mmBtu).
- For NO_x, SCNR and SCR costs have been overestimated. Based on CDPHE's criteria, we recommend BART for Unit 5 to be SNCR and BART for Units 6 and 7 to be SCR.

Public Service Company Comanche Station

- For SO₂, we would typically expect a modern Lime Spray Dryer to achieve 90% removal of uncontrolled emissions. Applied to Comanche, we recommend BART emission limits in the range of 0.05-0.06 lb/mmBtu.
- For PM we recommend that BART for the existing baghouses should be at least 0.015 lb/mmBtu and should reflect current stack test results that demonstrate the baghouses can achieve 0.005-0.007 lb/mmBtu.
- For NO_x, SCR applications similar to Comanche routinely achieve 0.05lb/mmBtu on an annual average basis and 0.06 lb/mmBtu for a 30-day rolling average.
- EPA and FLM recommend not using CUECost or PSCO's PVRR method but instead using the EPA Control Cost Manual.
- Costs of SNCR and SCR are overestimated. We provide detail supporting our estimates in the enclosed documents. We recommend that BART for Comanche #1 is at least SNCR and that CDPHE should re-evaluate SCR using the EPA Control Cost Manual methods.