

Appendix X

RH SIP USDA (FS) Comments

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Boling, Jean

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Hi Jean

Sorry for the delay – here is our comment letter

Have a good day

Trent

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Indiana Regional Haze Plan - Technical Comments

The plan is very comprehensive and well organized. It is logically sequenced and is extremely well explained. We specifically appreciated:

- the selection of 20 sources for consideration of a four-factor analysis,
- the comprehensive review of each source selected,
- the extensive technical documentation provided.

Air Quality Setting

Except for those sources in the northern edge of the state, emission sources within Indiana have effects primarily outside the Lake Michigan Air Directors Consortium (LADCO - midwest) region. For example, in the first round of regional haze planning Indiana was asked to pursue emission reductions at some of its electrical generating units (EGUs) by the Mid-Atlantic/Northeast Visibility Union (MANE-VU) due to impacts in New England. So far during this round of regional haze planning Indiana has again received requests to look at some of their EGUs from the VISTAS states due to impacts to the southeastern US and from Missouri.

We recognize the significant emission reductions of nitrogen oxides (NO_x) and sulfur dioxide (SO₂) made in Indiana in the last 15 years due to economic and regulatory drivers. These reductions directly led to measured visibility improvement (and numerous other air quality related benefits) over that time.

The Forest Service Class I areas most impacted by Indiana sources are Dolly Sods and Otter Creek Wildernesses in West Virginia. Historically visibility impairment at these sites was dominated by ammonium sulfate which comes from SO₂ emissions. Going forward it can be seen that other species, including ammonium nitrate (from NO_x emissions), will be important.

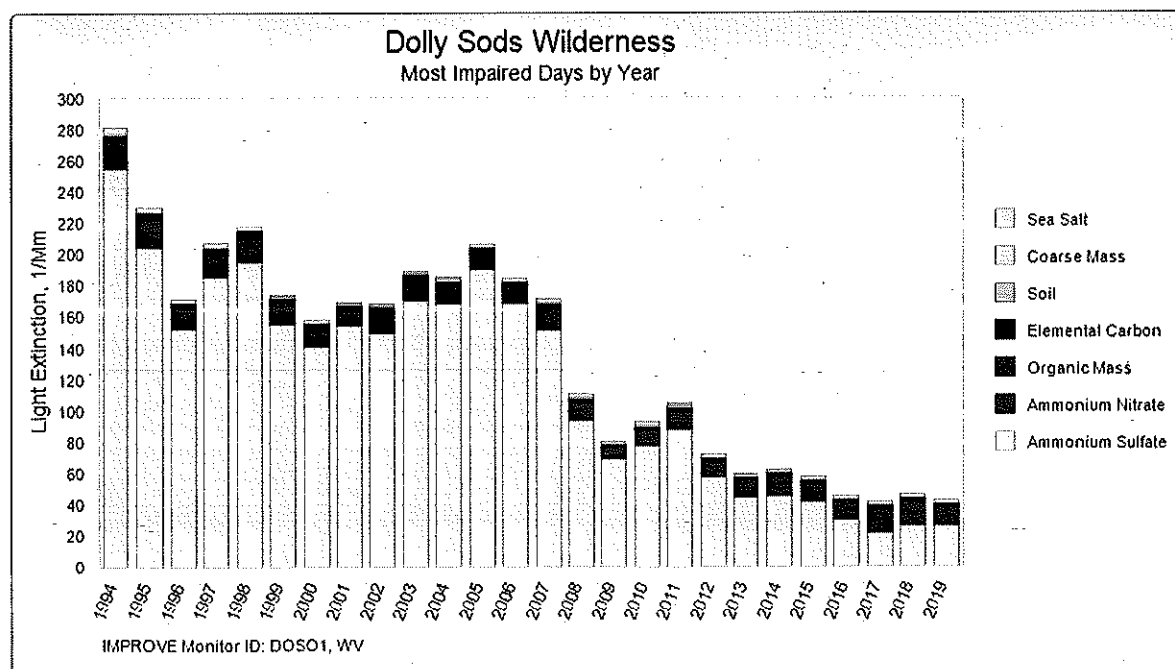


Figure 1 - Light Extinction Summary - Most Impaired Days

Of the 18 total sources on our list, they break down as follows:

- 13 coal-fired power plants
- 3 steel mills
- 1 coke battery waste heat recovery system
- 1 plastics plant

We don't feel we have the proper expertise to review the four-factor analyses for the steel mills and coke waste heat recovery system and will leave that to the other FLMs and EPA. The plastics plant replaced their coal-fired boiler with a natural gas-fired combustion turbine in late 2016 and is now a low emitting source.

Coal-Fired EGU Four-Factor Evaluation

The emissions in our table reflect 2016 emissions. Future operational plans for these 13 power plants are changing. What we currently know is outlined below. We also added indicators after a source indicating the following:

* = subject to the Round 1 MANE-VU ask;

V = subject to the Round 2 VISTAS ask;

M = subject to the Round 2 Missouri ask.

- All units at the source have already stopped operating and/or are shutting down by 2028:
 - Cayuga *
 - AB Brown
 - Merom
 - RM Schahfer
 - Wabush River *
 - Michigan City
 - Rockport *VM
- Some units at the source are shutting down by 2028 (4 of 11 total units)
 - Gibson (1 of 5 units) *VM
 - Petersburg (2 of 4 units) V
 - FB Culley (1 of 2 units)
- All units are running beyond 2028 (12 units)
 - Alcoa (we focused on the four coal-fired boilers, although only one is considered an EGU)
 - Clifty (6 units) *
 - Whitewater Valley (2 units)

In summary - 19 units at 6 plants are planning on continuing running beyond 2028.

The following units that are running beyond 2028 are well controlled for both SO₂ and NO_x:

- FB Culley unit 3.
- Alcoa, all four units - These units were placed into service in the early 1960s. Only the largest unit, a cell burner known as unit 4, is discussed in the draft SIP. It has wet flue gas desulfurization (WFGD) for SO₂ and low NO_x burners with selective catalytic reduction (LNB/SCR) for NO_x. Units 1-3 are dry bottom, wall-fired boilers with WFGD and low NO_x

believe the higher rates may possibly indicate a malfunction of the control system. It should be investigated why all the units can't perform as well for SO₂ as the best performing unit.

Justification for Four Factor Analysis for EGU Sector

We recognize that Indiana feels it does not need to perform four-factor analyses on its EGU sector. The draft plan states that:

“Indiana surmises that its EGU sector was evaluated in great detail for the first implementation period of the Regional Haze rule.”

Most of these sources would normally have been subject to a detailed source-by-source BART determination during the first round of regional haze planning but EPA determined that the transport rule substituted for BART, so no analyses were done. We don't see where a detailed evaluation occurred.

The discussion in the plan continues by outlining the impressive emission reductions seen over the last ten years and the expected future reductions. The related monitored improvement observed in visibility is also mentioned.

- “EPA's “Guidance on Regional Haze State Implementation Plans for the Second Implementation Period, dated August 2019 states the “key flexibility of the regional haze program is that a state is not required to evaluate all sources of emissions in each implementation period”. IDEM is intently evaluating other emission sectors for this second implementation period to determine their visibility impacts on Class I areas. IDEM will conduct a review of all its emission sources, with focus on the EGU sector, for its January 31, 2025 progress report: pursuant to 40 CFR 51.308 (g). IDEM will evaluate EGUs for the third implementation period of the RH rule, as necessary, to be submitted in 2028. As a result, IDEM is not requiring 4-factor analyses from its EGUs nor will it conduct a 4-factor analysis on this emission sector for this second implementation period.”

The comments contained in the previous section of this letter highlight our belief that a properly executed four-factor analysis would show that feasible, affordable SO₂ and/or NO_x controls could be applied at some units at some power plants in Indiana. We don't see any reason to wait. The alternative laid out in the draft plan would be for Indiana to complete a review of their EGUs within the next plan that is due in 2028. Note that the current planning cycle started in 2019 and the state plans are not due until this summer. Should any controls be selected in the next plan they would not be required to be installed until five years after EPA's approval of that plan (approximately 2034).

The Relevance of the Four Factors Versus Other Required Elements of Regional Haze Plans

Some of the four-factor analyses contained in the Appendices noted that current visibility conditions are below the Uniform Rate of Progress (URP) for many Class I areas. Projected conditions in 2028 may also be too. This is used as justification to avoid doing a four-factor analysis or disregard the results.

We believe this is a misunderstanding of the rule. Reasonable progress goals (RPGs) and the long-term strategy (LTS) are separate plan elements (see 40 CFR Section 51.308 (d)). RPGs are established through the application of the four factors at 40 CFR Section 51.308 (d)(1):

- costs of compliance,

the RPG for the most impaired days is not “meaningfully” different than current visibility conditions, is counterintuitive and at odds with the purpose of the visibility program. In this situation, the state should take a second look to see whether more effective controls or additional measures are available and reasonable. Whether the state takes this second look or not, it may not abandon the controls it has already determined are reasonable based on the four factors. Regional haze is visibility impairment that is caused by the emission of air pollutants from numerous sources located over a wide geographic area. At any given Class I area, hundreds or even thousands of individual sources may contribute to regional haze. Thus, it would not be appropriate for a state to reject a control measure (or measures) because its effect on the RPG is subjectively assessed as not “meaningful.”

If the State determines that additional progress [beyond the URP] is reasonable based on the statutory factors, the State should adopt that amount of progress as its goal for the first long term strategy.” This approach is consistent with and advances the ultimate goal of section 169A: Remedying existing and preventing future visibility impairment. Congress required the EPA to promulgate regulations requiring reasonable progress toward that goal, and it would be antithetical to allow states to avoid implementing reasonable measures until and unless that goal is achieved.

Also of note - from the same reference:

If a state’s analysis fails to ... include cost-effective controls at sources with significant visibility impacts, then the EPA has the authority to disapprove the state’s unreasoned analysis and promulgate a FIP.

...the CAA vests state air agencies with substantial discretion as to how to achieve Congress’s air quality goals and standards, but states exercise this authority with federal oversight.

Enforceability

Indiana noted that they reviewed many utility Integrated Resource Plans and also contacted many companies directly to estimate the future operational status for their EGUs. This is an admirable first step, but these assumptions now need to be made enforceable. We also extend this to assumptions regarding:

- operating scenarios for emission units that represent a reduced capacity, for example a reduced number of operating hours per year,
- pollution control equipment efficiency used to designate a unit as “effectively controlled.”

Relevance of the Visibility Impact of Individual Sources

Several four-factor analyses submitted by sources attempted to downplay their importance based on its visibility impact. EPA’s 2019 Regional Haze Guidance states that “because regional haze results from a multitude of sources over a broad geographic area, a measure may be necessary for reasonable progress even if that measure in isolation does not result in perceptible visibility improvement.” Widespread emissions controls, particularly for SO₂ and NO_x, are essential for making reasonable progress at Class I

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