



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

National Wildlife Refuge System

Branch of Air Quality

7333 W. Jefferson Ave., Suite 375

Lakewood, CO 80235-2017

IN REPLY REFER TO:

FWS/ANRS-NR-AQ

November 18, 2010

Ms. Laurel Kroack, Chief  
Bureau of Air  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276

Dear Ms. Kroack:

On October 7, 2010, the State of Illinois resubmitted a draft implementation plan describing your proposal to improve air quality regional haze impacts at mandatory Class I areas across your region. 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.

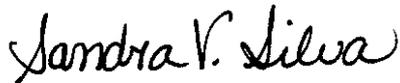
This letter acknowledges that the U.S. Department of the Interior, U.S. Fish and Wildlife Service (FWS), and National Park Service (NPS) have received and conducted a substantive review of your proposed Regional Haze Rule implementation plan in fulfillment of your requirements under the federal regulations 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. We look forward to your response, as per section 40 CFR 51.308(i)(3). For further information, please contact Tim Allen at (303) 914-3802.



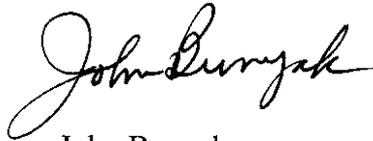
Again, we appreciate the opportunity to work closely with the State of Illinois and compliment you on your hard work and dedication to significant improvement in our nation's air quality values and visibility.

Sincerely,



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

Sincerely,



John Bunyak  
Acting Chief, Air Resources Division  
National Park Service

Enclosure

cc:

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## ENCLOSURE

### **Comments of the U.S. Fish and Wildlife Service and National Park Service Regarding the Illinois Draft Regional Haze State Implementation Plan**

**November 18, 2010**

On October 7, 2010, the State of Illinois resubmitted a draft Regional Haze Rule State implementation plan (SIP), pursuant to the requirements codified in federal rule at 40 CFR 51.308(i)(2), to the U.S. Department of the Interior, U.S. Fish and Wildlife Service (FWS).

The air quality program staff of the FWS, in cooperation with the National Park Service, has conducted a substantive review of the Illinois draft plan and provides comments listed below. In these comments, all references to the draft Illinois Regional Haze SIP (“Draft SIP”) refer to the October 7, 2010 document.

We look forward to your response as per section 40 CFR 51.308(i)(3), and would be willing to work with Illinois Environmental Protection Agency (IEPA) staff towards resolving the major issues discussed below. For further information, please contact Tim Allen, FWS Regional Haze lead, at (303) 914-3802.

#### **Overall Comment**

The FWS has significant concern that the information provided in the Draft SIP fails to describe or address content elements required by the Regional Haze Rule. Although clear efforts are identified by the State in reducing emissions that affect regional haze at mandatory Class I areas, IEPA fails to properly identify and document supporting information to conclusions drawn.

In general, the Draft SIP lacks sufficient information or discussion to support the conclusions being made. Although the State’s current “On-the-Books” and Multi-Pollutant Standards and Combined Pollutant Standards emission control scenarios may ultimately meet the needs of the haze rule, a comprehensive summary of the evaluation and implementation of those controls is lacking. The fact that affected Class I areas are not located within Illinois’ state boundaries is not a sufficient reason to exclude major discussion of Regional Haze Rule priorities. The rule establishes that air quality emissions from a large geographic extent cumulatively result in Class I visibility impairment, and requires states to fully evaluate and discuss their contributions to these impacts regardless of state boundaries.

To that end, FWS strongly suggests that IEPA add discussion within the main body of the draft SIP to include an expanded summary of IEPA and Mid-West Regional Planning Organization information prior to finalizing the SIP. Specifically, please provide information on how the State developed, evaluated, or consulted on the following:

**Baseline, Natural Condition, and Uniform Rate** – In the executive summary, three specific Class I areas are identified for which emissions from IL sources cause or contribute to visibility impairment. These Class I areas include Mammoth Cave NP, Mingo NWR, and Isle Royale NP. More information should be presented explaining how only these 3 Class I areas, and no others, were selected. For the selected Class I areas, the SIP should include discussion about the baseline and natural conditions estimates, and uniform rate of progress. This information is important because IL uses these data in making its control determinations. Although these values are established by neighboring States, the resulting baseline and natural conditions estimates affect IL and its subsequent work. If it is determined that IL significantly contributes to additional Class I areas, summary information should be included for them as well.

**Emission Inventories and Modeling** – IEPA participated in joint emission inventory and air quality modeling efforts with the Mid-West Regional Planning Organization (RPO). In order for the State to make use of the modeling results, it should present a summary of efforts, participation, and technical assumptions associated with RPO modeling products. Establishing validity of the modeling system is required for all non-guideline model applications. The discussion should include development and application of meteorology, modeling systems, performance evaluation, and all associated emission inventories. Uncertainties regarding each of the previous components, as well as methods (such as reasonable response factors) to reduce predictive error, should be discussed. These efforts are ultimately the basis for the State's conclusion that visibility goals are being met and that IL is fulfilling its share of reducing visibility impairment. In addition, IL is uniquely located near multiple RPOs. The State should consider a review of the competing efforts made by CENRAP, VISTAS, and MANE-VU, summarize those RPOs' emission inventory and modeling systems, and make comparisons on how contributions from IL were characterized.

**Reasonable Progress Goals and Long Term Strategy** – Although the Class I States set the reasonable progress goals for each of their Class I areas, IL should summarize these goals and discuss its air pollution sources' apportionment to baseline in meeting these goals for each of the affected Class I areas. From our experience, all RPO's performed some form of State level apportionment calculations for its Class I areas. IL should look beyond only Mid-West RPO in making these findings.

Consider summarizing how the IL specific emission control efforts affect the Class I areas' ability to meet the Reasonable Progress Goals. One way is to discuss sources and associated controls specific to an "area of influence" for each Class I area. With this method, a geographic area is identified as a likely contributor to a Class I area's primary impairment influence. By discussing how State emission control regulations apply in these areas and ultimately assist in improving visibility, a State can better justify that sufficient efforts were made to pursue "reasonable" controls.

Finally, IL should better identify how its State emission control strategies relate to the four factors outlined at 40 CFR 51.308 (d)(1)(i)(A). Simply identifying RPO modeled projections of visibility improvement at assorted Class I areas as meeting the uniform rate of progress is not enough in showing that IL indeed met its share of emission controls. A four factor analysis is

intended to show that emission sources, or categories of sources, have been evaluated and determined to be “reasonable”. The fact that a neighboring Class I State did not specifically ask for additional controls does not relieve the need for a comprehensive evaluation of Illinois’ air quality emission controls.

**BART** – The suggestion to add supporting discussion and information also apply to the BART process and BART determinations. We recommend that a full summary, with added detail, be included in describing the “better than BART” option IL has chosen. With the limited number of sources subject to BART, it also appears reasonable to summarize each BART source and describe the benefit from the BART alternative.

Because the better-than-BART alternative compares emission controls against presumptive control levels established for EGUs, additional summary should be included for what would constitute BART levels for the refineries. We suggest that the discussion include a five factor analysis, per 40 CFR 51.308 (e)(1)(ii)(A), for each of the refineries in support of the alternative.

[The attachment to these comments contains additional recommendations specific to the BART determinations presented with the Draft SIP package.]

**FIRE** – IEPA should summarize its smoke management plan. The summary should include additional information to address the following questions:

- Is the SMP voluntary or mandatory?
- Does the SMP consider Class I areas as sensitive receptors for burn decisions?
- Does the State implement best management practice requirements for burning? and,
- Is there an effort to track fire emissions from all styles of burning?

**Prevention of Significant Deterioration** – IEPA should also consider summarizing the implementation and review of PSD permits and its value toward progress with the Regional Haze Rule. Although new sources are generally considered cleaner sources, an improperly located new source or major modification can have a profound effect on a State’s ability to meet its progress goals.

## ATTACHMENT

### Comments/Issues Regarding the Illinois Draft Technical Support Document for Best Available Retrofit Technology Under the Regional Haze Rule

November 18, 2010

As a result of the Illinois Environmental Protection Agency (IEPA) implementation of Memorandums of Understanding, Consent Decrees, Multi-Pollutant Standards (MPS) and Combined Pollutant Standards (CPS), significant NO<sub>x</sub> and SO<sub>2</sub> emission controls on the various sources subject to Best Available Retrofit Technology (BART) have been achieved. IEPA has done a commendable job in the overall level of control required of its BART sources, as well as its non-BART sources. Nevertheless, the U. S. Fish and Wildlife Service and National Park Service would like to comment on several aspects of the Draft Technical Support Document for Best Available Retrofit Technology under the Regional Haze Rule that was provided for our review.

There seems to be a misinterpretation of Section III of the EPA BART Guidelines that provides for exempting a BART-eligible source from being subject-to-BART if the source's impact on visibility impairment from NO<sub>x</sub>, SO<sub>2</sub> and particulate matter (combined) at any Class I area is less than 0.5 deciviews.<sup>1</sup> Section 3.0 of the Technical Support Document states, “. . . the MRPO determined that the visibility impact of particulate matter emissions from just the BART-eligible sources in the MRPO states will be much less than 0.5 deciviews in any Class I area. Illinois EPA has therefore excluded emissions of particulate matter from the BART review process in Illinois.” Visibility impacts of particulate matter must be included with NO<sub>x</sub> and SO<sub>2</sub> in modeling for determining if a *source* is subject-to-BART by contributing to visibility impacts at any Class I area by 0.5 deciviews or greater. However, it is agreed that once a *source* is found to be subject-to-BART, controls on particulate matter emissions from an *emission unit* may be found to be so insignificant that the cost of control is excessive and addition of particulate matter emission controls is not required under BART. Section 3.0 of the Technical Support Document should clarify this concept and IEPA should confirm that no BART-eligible source was found to be not subject-to-BART, because particulate matter was excluded from the modeling analysis in determining the source's contribution to visibility impairment at any Class I area.

The Technical Support Document seems clear that IEPA is requiring Electric Generation Units (EGUs) to perform a BART determination, rather than participate in the Clean Air Interstate Rule (CAIR). This is certainly an acceptable position for the State to take, but possibly a sentence should be added to the Technical Support Document that confirms this to be the policy of IEPA.

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<sup>1</sup> See 40 CFR Part 51, Appendix Y. The U.S. Environmental Protection Agency finalized its BART Guidelines on June 15, 2005, and published the preamble and final rule text in the Federal Register on July 6, 2005. The rulemaking action added Appendix Y to Part 51, titled “Guidelines for BART Determinations Under the Regional Haze Rule.” See Section III.A.1.

A state choosing to use an alternative method to meet BART must demonstrate that this alternative measure will achieve greater reasonable progress than would be achieved through the installation and operation of BART.<sup>2</sup> Pertaining to Dominion Kincaid, Table 4.10 of the Technical Support Document shows only that the proposed alternative *matches* the aggregate total across analyzed Class I areas of 21 days with impacts greater than 0.5 deciviews as shown for presumptive BART, but does not exceed it. Thus, it would seem to demonstrate that the alternative method is equivalent to BART, but does not show *greater* reasonable progress than BART. Further, this demonstration must show that visibility does not decline in any Class I area.<sup>3</sup> Table 4.10 shows that at under the alternative method at Mingo there is an increase in the number of days with impacts greater than 0.5 deciviews from three to five and also at Hercules Glades there is an increase from one day to two days. Measures should be taken so that these increases under the alternative method become decreases. It is likely that this could be achieved by Dominion Kincaid if the emission control technology for SO<sub>2</sub>, likely a wet scrubber, were required under emission limitations to reach an efficiency of 0.15 lb/MMBtu, rather than the 0.18 lb/MMBtu as stated in section 4.1.2.2. As discussed in the following paragraph the emission limitation could even be around 0.07 lb/MMBtu, which is the true efficiency of the technology.

Case-by-case BART determinations for EGUs should involve permitted emission limitations based on the capability of the emission control technology being implemented, rather than simply reflecting presumptive BART. In the various agreements with the sources, IEPA seemed to negotiate emission limitations that met presumptive BART control levels, rather than the capability of the control technology (e.g., 0.06 - 0.07 lb/MMBtu for SCR; 0.05 lb/MMBtu for wet scrubbers). Although the premise of the alternative method of compliance focuses on meeting presumptive BART, the intent of the regional haze program is to maximize visibility improvement. This could best be achieved by setting emission limitations in permits to the level achievable by the control technology.

Proof that an alternative method results in greater reasonable progress for visibility improvement should involve presentation of modeling results as was done for Dominion Kincaid. Modeling results were not shown in the Technical Support Document intending to demonstrate that the alternative method(s) used for the other sources resulted in greater reasonable progress than BART. Aggregate lower emissions were shown for all EGUs, which would presumably result in greater visibility improvement at all Class I areas, but the conclusion is not definitive without modeling.

Some additional explanation seems to be necessary in the CITGO refinery analysis which attempts to show that NO<sub>x</sub> reductions under the Consent Decree exceed NO<sub>x</sub> reductions that would be required under BART. First, the presumptive levels of emission control apply only to electric generation units and not to refineries. Therefore, the "Presumptive BART" column in Table 4.13 should reflect NO<sub>x</sub> emission reductions attributable to actual BART controls, rather than presumptive levels of control. Second, Table 3.4 lists all the units that are subject to BART,

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<sup>2</sup> See 40 CFR 51.308(e)(2).

<sup>3</sup> See 40 CFR 51.308(e)(3)(i).

but Table 4.13 in the BART column shows no BART controls for many of the refinery heaters that are subject to BART. Many NO<sub>x</sub> control technologies exist for the various types of refinery heaters and fuel types. The extensive number of combinations of technologies, types of heaters and fuel types are too extensive to discuss here. For discussion purposes a reasonable alternative to choose might be Ultra Low NO<sub>x</sub> Burners (ULNB) which is generally a feasible and cost-effective NO<sub>x</sub> control technology for refinery heaters that can achieve a 75% reduction in NO<sub>x</sub>. A BART determination should be performed for each of the heater units that are subject to BART and units for which ULNB or other controls are feasible should show the NO<sub>x</sub> control achievable for those units. Third, Section 4.2.1 explains that selective catalytic reduction (SCR) on the Fluid Catalytic Cracking Unit (FCCU) can achieve a 95% NO<sub>x</sub> reduction, but Table 4.13 reflects only 85% control. If 95% NO<sub>x</sub> control for the FCCU (1,011 TPY) is assumed, along with 75% NO<sub>x</sub> control for the heaters that are subject to BART, the total NO<sub>x</sub> control achieved by BART levels of control is 1,456 tons per year. The column showing tons per year reductions under the Consent Decrees indicates that only 1,268.5 tons per year will be achieved. This is not adequate for the CITGO refinery to meet the requirements of BART. Please perform additional analysis and/or add more NO<sub>x</sub> controls on refinery heaters to allow the facility to meet BART by assuring that Consent Decree and BART requirements exceed what would be required by BART.

The discussion for the ExxonMobil refinery is similar to the discussion above for the CITGO refinery. The subject-to-BART refinery heaters (particularly points 18, 19, 21 and 25) show that no controls are required in the column for BART NO<sub>x</sub> reductions. Some level of control should be added to this column. For example, adding ULNB controls (at 75% reduction) would seem to be a feasible control for these units. The sum of these numbers under the BART column would make it larger than the tons per year reductions shown in the Consent Decree column. Again, please perform additional analysis or add more NO<sub>x</sub> controls to allow the facility to meet BART. Regarding the BART analysis for SO<sub>2</sub>, the Refinery Waste Gas Blowdown System and 2 Flares is shown to be subject-to-BART. It would seem that the 1,156 tons per year of SO<sub>2</sub> from this system, at some percentage control level, should be included in the BART column. If this occurred the required tons per year reductions in the BART column would exceed the tons per year of SO<sub>2</sub> reduced in the Consent Decree column and additional BART controls would need to be found. This could possibly be a flue gas recovery unit on the flares.

Section 4.1.1.3 of the Technical Support Document indicates that Midwest Generation will install scrubbers at the Joliet and Will County plants by 2019. Likewise, Section 4.1.2.2 indicates that Dominion Kincaid will provide BART SO<sub>2</sub> controls to 0.18 lbs/mmBtu by January 1, 2017. These dates far exceeds the date by which BART controls must be in place, which is within five years after the State's Regional Haze SIP is approved by EPA.<sup>4</sup> These dates should be set earlier in time.

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<sup>4</sup> See 40 CFR Part 51, Appendix Y. The U.S. Environmental Protection Agency finalized its BART Guidelines on June 15, 2005, and published the preamble and final rule text in the Federal Register on July 6, 2005. The rulemaking action added Appendix Y to Part 51, titled "Guidelines for BART Determinations Under the Regional Haze Rule." See Section V.