United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

Ms. Teresa Marks
Director, Arkansas Department of Environmental Quality
5301 Northshort Drive
North Little Rock, Arkansas 72118-5317

Dear Director Marks:

On February 25, 2008, the State of Arkansas submitted a draft implementation plan describing its 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), has 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 Management agencies, and we have attached comments associated with these priorities. Note that we have highlighted comments in bold face that we feel warrant additional consultation prior to public release. We look forward to your response as per section 40 CFR 51.308(i)(3). For further information, please contact Mr. Tim Allen, U.S. Fish and Wildlife Service at (303) 914-3802.

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

Sincerely,

Lyle Laverty
Assistant Secretary for Fish
and Wildlife and Parks

Enclosure

U.S. Fish and Wildlife Service Comments Regarding
Arkansas Draft Regional Haze Rule State Implementation Plan

On February 25, 2008, the State of Arkansas submitted 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 FWS Branch of Air Quality staff, in consultation with the National Park Service's Air Resources Division, has conducted a substantive review of the Arkansas draft plan, and provides the comments listed below. Our concerns that are described below warrant additional consultation prior to public release of the Arkansas Regional Haze Plan.

We look forward to your response as per section 40 CFR 51.308(i)(3), and would be willing to work with Arkansas Department of Environmental Quality (ADEQ) 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 Fish & Wildlife Service is concerned that the information provided in the State of Arkansas' Draft Regional Haze SIP fails to describe or address content elements required by the Regional Haze Rule. Throughout the document, too little information is placed in the summary with little to no continuity. In this case, the lack of continuity results either in confusing reading that bounces from point to point, or in discussions with serious information gaps. In particular, the State relies on numerous appendixes in lieu sufficient summary description to adequately address the content areas identified by the Act or rule. In sum, the Draft SIP does not appear to provide a reader with an understanding of the causes of haze at the Class I areas of concern, how that will change over the ten-year planning interval, and the strategies that the State will employ to provide for reasonable progress toward the goal of natural visibility conditions by the year 2064.

Two specific content areas are appearing to lack sufficient analysis, description, or comparison to the mandatory factors identified by the Act and subsequent rules. These are the presentation of Best Available Retrofit Technology (BART) decisions made by Arkansas, as well as the treatment of Reasonable Progress and Long Term Strategy. Detailed discussions of these issues are explained in the technical comments that follow.

In addition, the information presented regarding BART evaluations for several facilities inappropriately seek to evaluate individual units on a per-pollutant basis to compare to the significance threshold. This application of the BART elimination provisions of EPA's BART Guidelines[1] results in instances where air pollution sources are not evaluated for additional pollution controls properly in accordance with the regulations.

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[1] See 40 CFR Part 51, Appendix Y. The U.S. Environmental Protection Agency finalized it's 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 II.A.3 and 4.

We are concerned that the apparent lack of sufficient summary and disregard for reasonable progress or analyses of the statutory factors may not allow this draft to be approved. As such, the FWS respectfully requests that the State of Arkansas reconsider the Draft SIP in its present form before release to the public. We ask that the State review the eight elements identified by the Fish & Wildlife Service letter (August 2006) and expand its discussion in the document regarding how ADEQ approached, evaluated, and drew conclusions on these important rule elements.

The remaining comments provided here are organized according to the priorities that we presented in our August 1, 2006, letter. Many of the following comments will also provide direction towards building the narrative of the Draft SIP to satisfy the documentation and content area deficiencies noted above.

Baseline, Natural Conditions, Uniform Rate

1. Sections 5.1 states that baseline visibility conditions for the Caney Creek Wilderness Area were established using three years of IMPROVE data, and notes that this "does not meet EPA completeness criteria for the five year averaging period." Section 6 indicates that the Caney Creek IMPROVE site was installed between 2000 and 2003, which is the reason for not having five years of monitoring data at the time baseline was set. Please note that the Regional Haze Rule requires three of five years for baseline calculations, and thus the Caney Creek monitoring site does have sufficient years of valid data to meet the completeness criteria.

2. Figures 10.2 and 10.4 present a "Uniform Rate of Progress for the Twenty Percent Best Days" at the two Arkansas Class I areas. Table 10.2 presents the information from those figures in tabular form. We do not understand the purpose of this information. The Regional Haze Rule requires that a State develop a Long Term Strategy based on an assessment of control measures that would make progress towards natural visibility conditions on the worst 20% days over the 60 year timeframe; however, the Rule prevents a State from setting a reasonable progress goal for the best days that is more impaired than the baseline condition. While the "Worst Day" concept is represented by the graphical glide-slope presentation used in figures 10.1 and 10.3, the graphs you provided in figures 10.2 and 10.4 for the "Best Days" (together with the data in table 10.2) are not representative of the best days provisions of the Regional Haze Rule. Rather, figures 10.6 and 10.8 showing the "Reasonable Progress Goals for the Twenty Percent Best Days," which appear in the following section, address the Regional Haze Rule Best-Days goal appropriately. If Figures 10.2, 10.4, and table 10.2 are the means be which Arkansas is setting it RP goals for the least-impaired days, that should be presented in a more direct manner. We agree that the best day goals should show any improvement from baseline expected from implementation of the Long-Term Strategy adopted by the State. (Please also see comment #17, below, which is related to this topic.)

Emission Inventories

3. Section 7.0 – Tables 7.1 and 7.2 list 2002 and 2018 emission estimates by basic source category, respectively. This very brief chapter provides reference to two appendices – the first is a lengthy technical report prepared by a contractor, and the second is a "Short Summary of the 2002 Emission Inventories Methodology Utilized by Arkansas." The chapter then indicates that the 2018 emissions inventory will be further discussed in the next chapter. Chapter 8 covers the modeling assessments conducted for this SIP development, with section 8.4.1 providing a one-paragraph description of the bases for the "2018 base case." Arkansas must declare its expected 2018 state-wide inventories after implementation of the components of its Long-Term Strategy and, as part of the commitment to ongoing review of the SIP, explain how deviations from those emissions will be addressed in future SIP revisions.

   Throughout all of these discussions, there is too much burden placed on the reader to review large reports in the appendices, with no discussion or conclusions provided by ADEQ except for the unsupported numerical data in the chapter 7 tables. For instance, we were unable to determine whether the "2018 Emissions Inventory Summary" presented in Table 7.2 represents the future base case without additional controls, the future projection utilizing Clean Air Interstate Rule (CAIR) and/or BART controls, or possibly some other future control scenario. This chapter should identify and describe the differences between the various emissions scenarios that ADEQ employed for its Regional Haze SIP analyses and decisions, including Base/Performance, Typical 2002, Base 2018, and any Alternate 2018, emissions inventories, and how it is utilizing each scenario.

4. There is inconsistent discussion of a variety of emission inventories starting with section 8.1 leading into section 8.4. Model performance should not use typical base or future emission inventory data. Section 8.3 provides non-related information emission development for other purposes in the middle of a performance discussion. No information is provided to describe the performance inventory. Section 8.4 also skips from one topic to another, with discussions of future inventory, typical inventory, and model performance intermingled.

5. Section 8.4.2 presents the results of model performance evaluations for the Arkansas Class I areas. The discussions for both Caney Creek and Upper Buffalo Class I areas suggest significant underestimation of impacts due to sulfur, in the range of 30%-50%. This data is simply stated, but its implications and ADEQ's conclusions based upon the information are not explained. Regional Planning Organization final projections are generally based of relative response factors (RRF) corrections, which allow that, while the model may be "off" in absolute terms, it still responds to increases or decreases in impact. No mention of RRFs or appropriate model response analyses is discussed.

6. As currently drafted, the SIP projects an overall increase in SO2 emissions between the baseline and 2018, despite inclusion of Best Available Retrofit Technology controls on a significant amount of current emissions. The SIP should commit the State to review and revise emissions projections from 2012 to 2018 as part of 5-year review required by the regional haze rule. This commitment will assure that the projected improvements represented by the reasonable progress goals set in Section 10 will be achieved. The

commitment to review must include a commitment to seek further controls or adjust the reasonable progress goals though a SIP revision should the emissions projections vary substantially from those projected at this time. Those revisions may result in additional improvement in visibility if the current projection of new power generation in Arkansas does not materialize, or if such generation does not yield the expected amount of new emissions.

Section 12 briefly provides a broad commitment to periodic review and revision of the SIP as a whole. The Emission Inventory sections should discuss the uncertainty and then point to the Section 12 commitment as ADEQ's plan of action on that front, and ensure that the statement provided in Section 12 adequately encompasses the scope described in this comment.

7. Section 8.5 presents a short discussion and a few figures about the "2018 Base G C1 Control Strategy" that CENRAP[2] generated. This scenario involved examining the pollution sources within the "areas of influence" of the nearby Class I areas, and assuming that controls would be applied up to a cost of $5,000/ton level for all such facilities that had a ratio of emissions-to-distance-from-Class-I-area of 5 or more (tons per year/kilometers). Resulting reductions to visibility impacts are described as significant, yet nowhere does the Draft SIP explain whether Arkansas or any other State identified in that scenario, has committed to or will benefit from such an inventory. Thus, we do not understand the context in which ADEQ is discussing the 2018 Base G C1 scenario.

Best Available Retrofit Technology (BART)[3]

8. **BART, although partially described, does not offer a sufficient summary of process, source identification, impacts, controls associated with exemption or subsequent determinations. In Arkansas's own statement, the Clean Air Interstate Rule (CAIR) does not constitute sufficient controls to be better than BART. This statement places an additional burden on Arkansas, as compared to a typical CAIR State, to develop and describe a BART process that clearly identifies, evaluates, and decides levels of control or exemption for eligible single sources. The State appears to have conducted much of the necessary steps. However, the SIP document does not adequately describe the analyses and how alternatives associated with controls were considered by the State.**

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[2] Central Regional Air Planning Association CENRAP is an organization of states, tribes, federal agencies and other interested parties that identifies regional haze and visibility issues and develops strategies to address them. CENRAP is one of the five Regional Planning Organizations RPOs across the U.S. and includes the states and tribal areas of Nebraska, Kansas, Oklahoma, Texas, Minnesota, Iowa, Missouri, Arkansas, and Louisiana.

[3] BART-eligible sources are those sources that have the potential to emit 250 tons or more of a visibility-impairing air pollutant, were put in place or under construction between August 7, 1962 and August 7, 1977, and whose operations fall within one or more of 26 specifically listed source categories. Under CAA section 169A(b)(2)(A), BART is required for any BART-eligible source which "emits any air pollutant that may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area."

9. **EPA's BART Guidelines[4] provide thresholds for evaluating whether the BART-eligible units at a facility cause or contribute to Regional Haze at a Class I area. These thresholds are to be applied to the visibility impacts projected from the sum of all visibility affecting pollutants from the total of all BART-eligible units at a facility. However, the BART documentation for Arkansas Electric Cooperative Corporations Bailey and McClellan Stations, and for the AEP Southwestern Electric Power Company-Flint Creek Power Plant, instead apply this threshold on a per-pollutant basis to individual units in order to either exempt from being subject to BART or to justify not conducting engineering analyses of potential BART controls. This is inappropriate. This is further discussed in the attachment to these comments.**

10. Specifically regarding the BART exemption process, we have the following comments:

    a. On page 46, at the end of section 9.2, Arkansas explains that, since its EGU sources are only required to participate in ozone-season NOx reductions under CAIR, that meeting CAIR requirements does not satisfy BART for these facilities. We concur with this decision. It would be helpful to the reader if this paragraph was relocated earlier in the chapter, prior to BART exemption discussions, to explain why so many EGU emission sources are included in the subsequent BART determination/exemption process in Arkansas.
    b. Section 9.2 does not provide sufficient summary of ADEQ's BART exemption process or results, including the reasons why remaining BART sources were not exempt.
    c. Section 9.2, says that the State will exempt BART-eligible through source-by-source evaluation (that is, in accordance with option 1 listed on page 42). Yet, the text that follows suggests that a cumulative visibility analysis was performed on the six remaining subject-to-BART sources. Readers are referred to Appendix 9.2C for description and methodology. Appendix 9.2C does not include expected information from consultants ENVIRON or Alpine, nor does it offer another cumulative analysis. It is not clear what purpose or application a cumulative analysis serves for the State.

11. Section 9.4 (together with Appendix 9.2C) of the Draft SIP present a discussion relating to post-control visibility improvement at ten Class 1 areas as a result of BART controls on several subject-to-BART facilities. It demonstrates significant improvement which is to be commended, but also shows that very significant visibility impairment still exists after BART controls are in place. This issue is to be addressed in the Reasonable Progress portion of the Draft SIP. However, some consideration might be given as to whether some of the BART control technology chosen by the sources specifically to satisfy the BART requirements might preclude possibly more effective technology that could have been deployed in an overall more cost-effective manner as part of the Reasonable Progress phase. The ADEQ might determine if a much higher level of control (beyond BART) by a BART source at this

[4] See 40 CFR Part 51, Appendix Y. The U.S. Environmental Protection Agency finalized it's 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."

time might allow the ADEQ to not require further controls from that particular source as part of it's Reasonable Progress determination.

The attachment to this comment document provides source-specific recommendations regarding control technology options that ADEQ should consider for its six "subject-to-BART sources.

12. Specifically regarding the Draft SIP's presentation of BART control determinations, we have the following comments:

    a. Section 9.3 is where the Draft SIP should provide a summary of the BART determinations for the Subject-to BART sources. However, the few paragraphs and tables presented are insufficient. The ADEQ should summarize, on a facility-by-facility basis, levels of controls considered, final control selected, and information on how the "five factors" were considered in making its decisions. Detailed information can be placed in Appendix, but company submitted BART information is not a substitute for State decision processes.
    b. The information presented in the tables 9.3a through 9.3d is difficult to follow. Earlier in this chapter, the BART-eligible units are identified by name, with Facility ID, AFIN, and Unit ID noted (table 9.1). Subsequently, the Subject-to-BART source subset is listed, again by name with Facility ID and Emission Unit descriptions, but no AFIN numbers (table 9.2). But, tables 9.3a thru 9.3d omit the source names, list the units apparently with the AFIN number (but in the column titled "Source and Unit"), and include what appears to be a reference to a State-issued operating permit number that presumably contains the emission limits provided in those tables. It would be very helpful for the tables throughout this chapter to be consistent in the syntax of referencing the specific BART units. We suggest that the tables do include the source names to help those unfamiliar with the syntax of the air pollution source ID listings and ADEQ's permit number assignments.
    c. Tables 9.3a thru 9.3d appear to have some errors, and/or information that may need further explanation:
        - Table 9.3a, sixth data row – we believe that this source AFIN number should be "30-00011," for the Entergy-Lake Catherine facility, instead of "30-00110." The latter does not appear on the BART-eligible list of Table 9.1. But, note that the unit listed for this entry in table 9.3a, "SN-03 *oil*" does not match any BART-eligible unit for the Entergy-Lake Catherine facility, per table 9-1; it does match the unit description for this facility in table 9-2.
        - We do not understand the information presented in these tables across the following columns: "Baseline Peak 24-hour Emissions (lb/hr)," "BART Level of Control %," and "Future Peak 24-hour Emission Rate (lb/hr)." For the first several entries in table 9.3a, the calculation of Future Peak 24-hour Emission Rate is consistent with applying the listed BART Level of Control to the Baseline Peak 24-hour Emissions values. But, the listings for three units with "0%" control are confusing. The footnote indicates that the BART Level of Control is "only listed if facility is adding controls or taking limits that will reduce emission per BART requirements. Facilities which are not adding controls or using controls which are already installed have a 0% BART control efficiency." Yet, one of these three

units shows that, after applying a 0% BART control level, its emission will still be reduced by nearly half. In addition, there are two entries that state the BART Level of Control will be "up to 95%," but that only calculate a Future Peak 24-hour Emission Rate representing approximately 80% control each. Similar confusing data is presented in tables 9.3b (for the four units with 69% NOX BART control), and for the entries of table 9.3c. The single footnote under table 9.3a does not adequately explain the data that ADEQ includes in these tables. The added discussion of the BART determinations that we recommend earlier in this comment (see paragraph a, above) will help a lot, but ADEQ should ensure that the meaning of the data in the tables is clear to the reader.

d. Section 9.4 introduces a statistically based test (TTEST in Excel) as a way for the State to evaluate BART control significance. This test or cumulative modeling is not a substitute for 5 factor analysis.

Area of Influence (AOI)

13. The Consultation Plan and associated information that is included as Appendix 10.2 to the Draft SIP contains a general AOI map for the combined Arkansas-Missouri Class I areas, and several assorted graphics for each Class I area of interest. However, the results of these studies, concepts, and graphics, are not presented in the Draft SIP text. They should be integral to the discussions of attribution of regional haze causing pollution, identification of reasonable progress goals, and development of long term strategies for this Regional Haze Plan.

    Figures 9.1 and 9.2 of the Draft SIP present geographic representations of Arkansas' BART-eligible and BART-subject sources with relation to the Arkansas and Missouri Class I areas. However, instead of overlaying AOI information, the diagrams use "300 km buffers" about those Class I areas.

    In contrast, CENRAP conducted extensive AOI analyses, and produced graphic representations for each of the Class I areas within and near to the CENRAP region. However, the Draft SIP does not provide any of these graphics for the local Class I areas of concern, nor does it discuss any of the work or results from those analyses.

    Overall, the Draft SIP fails to utilize appropriate AOI information generated by CENRAP and the other RPOs in its analyses of both contributions of other States' sources to Arkansas' Class I areas visibility impairment as well as contributions of Arkansas' sources emissions to out-of-State Class I areas.

14. *Arkansas Sources' Impacts on Out-of-State Class I Areas:* Section 1.2 identifies Class I areas affected by visibility impairing emissions originating from the State of Arkansas. Specifically, two such Class I areas are located within Arkansas (the Caney Creek and Upper Buffalo Wilderness Areas, both managed by the Forest Service), and two are located in Missouri (the Mingo Wilderness Area managed by FWS, and the Hercules Glades Class I area managed by the Forest Service). Although this section states that emissions from Arkansas are likely to cause or contribute to regional haze in the identified out-of-State areas, little to no consideration is afforded to the Missouri Class I areas and Arkansas sources' impacts to visibility impairment in them, for the remainder of the Draft SIP.

The documents provided with appendix 10.2 of the Draft SIP include an August 17, 2007, letter from ADEQ Air Division Chief Mike Bates to Oklahoma Department of Environmental Quality (ODEQ) Air Quality Division Director Eddie Terrill. This letter responds to ODEQ's initial consultation meeting regarding the Regional Haze planning for its Wichita Mountains Wilderness Area. In this letter, Arkansas disagrees with ODEQ's "assertion that sources in Arkansas contribute significantly to an inability to achieve reasonable progress [at Wichita Mountains]." It is unclear whether ODEQ has accepted Arkansas' opinion in this matter. As an additional note, while the discussion in Section 11.3 of Arkansas' Draft SIP (quoted below in comment #19) says that visibility projections for outside-of-Arkansas Class I areas will meet or exceed the uniform rate of progress, this letter to ODEQ indicates that the projections for Wichita Mountains "will not meet the glide path representing a return to natural conditions by 2064." In addition, one of the BART appendices identifies the Sipsey Wilderness Area (Forest Service managed) in Alabama as potentially being impacted by that company's two BART-eligible units' emissions (see appendix 9.3a, electronic file, "AECC BART Engineering Analysis. pdf," page 4).

The State should discuss in more detail how analysis of its sources' impact became limited to only the Arkansas and Missouri Class I areas, and why the areas outside Arkansas itself did not appear to be part of the consideration when ADEQ evaluated emission controls for its sources.

15. *Other States' Sources Impacts on Arkansas' Class I areas:* As an example, the data contained within both the Draft CENRAP TSD and ADEQ's Consultation Plan (appendices 8.1 and 10.2 to the Draft SIP, respectively), indicate that the areas of influence that affect the Arkansas and Missouri Class I areas extend across several surrounding States. In fact, the CENRAP "PSAT" source apportionment modeling results for the Upper Buffalo Class I area, show that sulfur emissions from elevated point sources in Illinois, Missouri, Indiana, Kentucky, and the collective States to the east beyond those, are each more significant than Arkansas' sulfate sources in contribution to the 2018 projected 20% worst visibility days. And, for the Caney Creek Wilderness Area, the impact of all pollutant emissions originating in Texas outweighs Arkansas' own impacts to visibility impairment in the 2018 worst 20% projections. The Draft SIP needs to discuss the attribution of haze-cause pollution and the results of ADEQ's consultations with neighboring States regarding achieving Reasonable Progress Goals at its local Class I areas.

16. The Draft SIP narrative does not include discussion of the causes of visibility impairment that affect the Class I areas of interest. At a minimum, it should present to the reader a summary description of the primary pollutant species that are the biggest contributors to haze, and the primary source categories that generate those pollutants, both for the base year and the projections for the year 2018. A portion of this information can be dug out from various graphics included in supporting documents found in the appendices, but the Draft SIP narrative itself is silent on the topic.

Reasonable Progress Goals and Long Term Strategy

17. **The Reasonable Progress discussion in the Draft SIP presents a major content deficiency. The SIP document does not identify any procedure to address single**

sources, or combinations of sources, that are predicted to continue significantly impacting visibility conditions in the future after implementing BART, CAIR, and any other on-the-books and on-the-way programs. Although the State concludes that additional controls are not necessary, Arkansas does not summarize or offer any level of clarity on what controls the CENRAP Regional Planning Organization (RPO) utilized within Arkansas in its analyses. Model evaluation at the two Class I areas located within Arkansas (Caney Creek and Upper Buffalo Wilderness Areas, both managed by the Forest Service) indicates significant under predictions of visibility impacts with regard to sulfates, and fails to address any significance of 2002 to 2018 projections of increased point source sulfur emission within Arkansas. Although the model is used in a relative sense, no additional discussion or clarification is provided to address how model performance or model response is adequately addressing issues that may arise from impacts from sulfates.

CENRAP (as well as the VISTAS RPO in the southeast United States) produced analyses to assist States in identifying geographic areas which may represent the source area most likely for a State to target additional controls for Reasonable Progress consideration. The State appears to have disregarded these supporting documents, and in spite of increasing sulfur emissions, did not discuss whether additional BART (beyond presumptive levels) for sources subject to BART, or other controls at non-BART pollution sources, may constitute a reasonable control. The SIP does not address the four statutory factors when making decisions to control or not control additional sources. Analysis of all control alternatives of potentially significant sources is necessary in order to fully evaluate reasonableness when looking at the factors. Although it is possible for the State to arrive at the same conclusions as presented in the draft SIP, there is no evidence that the State had sufficient information to conclude as to the reasonableness of its strategy to achieve the 2018 milestones.

18. In Section 10, titled "Reasonable Progress Goals" the State does not specifically declare reasonable progress goals, in deciview, for the year 2018. Table 10.3, on page 59, speaks to an amount of improvement for the most impaired days from baseline conditions. The reasonable progress goals should be clearly stated as the projected 2018 average of the 20 percent most impaired days and as the 20 percent least impaired days. These numbers are included in Figures 10.5 through 10.8 but are not declared in the text. Please revise the text in Section 10 to clarify ADEQ's choice of the 2018 reasonable progress goal and revise Table 10.3 to include a column indicating the goals for the least impaired days, as required by the regional haze rule.

19. Section 11.3 is very confusing, switches back and forth between impacts at Arkansas' Class I areas and impacts beyond the State's borders, and declares that otherwise unspecified emission reductions will achieve the RPG goals across seemingly both geographic divisions of Class I areas.

    The section opens with a paragraph indicating that the section will cover Arkansas' demonstration that its SIP includes "all measures necessary to obtain its fair share of emission reductions needed to meet [reasonable progress goals] in other Class 1 areas." The next paragraph identifies the categories of technical material that Arkansas relied upon to conduct a gross identification of other States with emissions that influence Arkansas Class I

areas, says that those identified States were included in the consultation process, and then asserts that "CENRAP-modeled visibility projections indicate that the emission reductions planned for these States are sufficient to achieve the [reasonable progress goals] for all Class I areas located in Arkansas and Missouri." Nowhere are the emissions reductions further described or quantified. The next paragraph indicates that, since CENRAP and ADEQ analyses show that visibility projections for the Class I areas outside Arkansas and Missouri "will all be able to demonstrate a better than uniform rate of progress through the implementation of existing and forthcoming State and federal emission reduction programs.... The emission reductions described elsewhere herein are sufficient to constitute a fair share of emission reductions needed to meet RPGs in affected Class I areas."

This is the bulk of Arkansas' evaluation of its Long Term Strategy to achieve Reasonable Progress towards visibility improvement both for its Class I areas and for those outside of the State to which Arkansas source emissions contribute. This discussion, both independently and in conjunction with the complete Draft SIP narrative, fails to provide the reader with an understanding of the causes of visibility impairment at either Arkansas' Class I areas or those in nearby States, the control strategies that were considered and levels of control that ADEQ decided to require for this SIP, or the anticipated results of those controls.

20. At the beginning of Section 10 of the Draft SIP, ADEQ outlines the four statutory factors that each State must consider in setting its Reasonable Progress Goals. These factors are intended to be applied holistically, across all contributing sources of visibility impairing pollutants, to inform the decision being made by the State. However, the remainder of the chapter never connects back to the four statutory factors, and in fact points to appendix 10.1, *"Analysis of Control Strategies and Determination of Reasonable Progress Goals,"* which argues that meeting the uniform rate of progress glide slope obviates any need for analyzing the four statutory factors for Reasonable Progress. Thus, the Draft SIP omits the required four-factor analysis for establishing the Reasonable Progress Goals.

21. In Section 11.4.1.6, the Draft SIP identifies "source retirement and replacement," saying that: "retirement and replacement will be managed in conformance with existing SIP requirements pertaining to Prevention of Significant Deterioration (PSD) and New Source Review (NSR). Source retirement and replacement will be tracked through on-going point source inventories." Please elaborate on how the PSD and NSR permitting programs will be utilized by ADEQ as part of its Long Term Strategy for meeting Reasonable Progress Goals.

Fire

22. The Arkansas Smoke Management Plan (SMP) and the summary discussion in section 11.4.1.8 of the Draft SIP properly identify Class I areas as being smoke-sensitive, and the SMP instructs prescribed burners to apply the appropriate smoke management techniques to minimize impacts. Overall, this is one of the best presentations of fire-emission-related Regional Haze considerations that we have seen to date.

23. We recommend that ADEQ ensure that its Regional Haze SIP refers to the Arkansas SMP in a way that does not require SIP updates each time the SMP is updated. Also, please indicate

whether Arkansas intends to "certify" its SMP as provided for by the 1998 EPA Interim Air Quality Policy on Wildland and Prescribed Fire.

Regional Consistency

24. Arkansas is situated geographically at the boundary between three multi-state Regional Planning Organizations (RPO): CENRAP running along the west of the Mississippi River from Minnesota south to Texas and Louisiana; VISTAS, comprised of the southeastern United States, and MWRPO, from the Ohio River Valley north through the Great Lakes region. As a member State of the CENRAP organization, Arkansas has utilized the technical products that were produced by the CENRAP efforts as the information upon which it has built its Regional Haze SIP. The VISTAS and MWRPO technical work also cover the Class I areas of concern to Arkansas, as several of their western member States may have emission sources that influence visibility at those Class I areas. The results indicated by each of the three regional planning organizations are different. While it is fully appropriate for Arkansas to rely upon the CENRAP work, ADEQ might consider highlighting the importance of the ongoing verification and contingency provisions in view of the varying results of the RPOs.

Verification & Contingencies

25. Section 13 of the Draft SIP discusses the options for action following the five-year review. However, the document does not provide any criteria that ADEQ will use in evaluating the five-year progress report to decide which of the listed actions would be indicated. Please include discussion of the anticipated criteria that ADEQ will use to both evaluate the progress at the five-year review and to select the course of action that will be taken based upon that review.

Coordination & Consultation

26. The Draft SIP references to its Appendix 10.2 for documentation of the consultation process that Arkansas and Missouri jointly conducted for the four Class I areas in their two States. However, the Draft SIP lacks discussion of Arkansas's decisions based upon the results of those meetings.

27. Chapter 4 of the Draft SIP explains past consultation with the Federal Land Management agencies, and commits to future consultation, saying: "ADEQ will continue to coordinate and consult with the FLMs during the development of future progress reports and plan revisions, as well as during the implementation of programs having the potential to contribute to visibility impairment in the mandatory Class I areas. The FLMs must be consulted in the following instances:
    - Development and review of implementation plan revisions
    - Review of 5-year progress reports
    - Development and implementation of other programs that may contribute to impairment of visibility in Class I areas."

    We appreciate ADEQ's acknowledgement of this ongoing consultation requirement, and look forward to working with you in the years to come.

ATTACHMENT

U.S. Fish and Wildlife Service Comments Regarding
Best Available Retrofit Technology (BART) Determinations
Arkansas Draft Regional Haze Rule State Implementation Plan

April 1, 2008

This document is an attachment to the Fish and Wildlife Service's (FWS) comments on the Draft Regional Haze State Implementation Plan prepared by Arkansas and received by the FWS on February 25, 2008. It provides source-specific recommendations regarding the Best Available Retrofit Technology (BART) determinations contained within that package.

Entergy Services, Inc. BART Determination for the Lake Catherine Plant

Table 9.2 of the Arkansas Department of Environmental Quality Regional Haze State Implementation Plan shows that the Lake Catherine Plant is a subject-to-BART source, but Tables 9.3 a-d do not include emission reductions from the 2002 Baselines for this source. Either the data for the Plant should be included or a reason for its exclusion should be noted.

The low 10% plant utilization rate causes any capital equipment alternative to magnify the cost per ton or incremental cost per ton, thus eliminating standard alternatives available to other BART determinations. For this reason it is important to impose strict emission limitations commensurate with 10% plant utilization in the plant's permit.

Section 3.1 of the BART determination proposes that boiler tuning, BOOS and IFGR is NO_x BART for gas firing. The addition of overfire air to the above three controls results in an annual cost effectiveness of $1,700 per ton for NO_x control and a $1.3 million cost per deciview. This is not an unreasonable cost for BART and should be considered. The value of this step would be to decrease the visibility impact from 0.56 deciviews to 0.34 deciviews.

The Arkansas Regional Haze SIP acknowledges that BART requirements are applicable requirements of the Clean Air Act and they will be included as title V permit conditions. It would be desirable that systems be installed to automatically monitor and trim oxygen and fuels for peak performance. Emission limits reflecting the above BART should be met on a continuous basis. For a discussion of this topic please refer to EPA's BART Guidelines.[1]

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[1] See 40 CFR Part 51, Appendix Y. The U.S. Environmental Protection Agency finalized it's 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.

The costs of alternatives were stated by Entergy, but there was no documentation or detailed break-out of the costs. The basis for equipment cost estimates also should be documented either with data supplied by an equipment vendor (i.e., budget estimates or bids) or by a referenced source (such as the EPA OAQPS Control Cost Manual), where possible.[2] A discussion of amortization of costs is presented, but the actual amortization factors are not given.

Entergy Services, Inc. BART Determination for the White Bluff Steam Electric Station

Entergy proposes to install SO_2 and NO_x control equipment that will meet the presumptive requirements of the EPA's BART Guidelines. The Arkansas Regional Haze SIP acknowledges that BART requirements are applicable requirements of the Clean Air Act and they will be included as Title V operating permit conditions. Emission limits such as BART must be met on a continuous basis. Although this provision does not necessarily require the use of continuous emissions monitoring (CEMs), it is important that sources employ techniques that ensure compliance on a continuous basis. The only such reference found in the BART determination was in Section 3.1 relating to boiler tuning, so further discussion of meeting emission limits on a continuous basis should be included. For a discussion of this topic please refer to EPA's BART Guidelines.[3]

Though presumptive BART is met for both NO_x and SO_2 using the proposed emission controls, Table 5-1 shows that the White Bluff Station will still "cause" visibility impairment at the Caney Creek Class I area. In considering its Long Term Strategy in the Regional Haze SIP for Caney Creek, the State should hold discussions at this time with the source to determine the possible need for additional future controls. Entergy might consider an altered mix of capital expenditures for emission control at this time given that information.

Domtar Industries Inc. BART Determination for the Ashdown Mill

The costs of the NO_x control alternatives of low NOx burners (LNB) and overfire air (OFA) for boilers #1 and #2 are presented in Table 4-3, and the conclusion is that the average cost per ton of NO_x control is cost-prohibitive. Costs in Table 4-3 are derived from total costs shown in Appendix B. The total costs from Appendix B and the Total Annualized Cost for LNB and OFA shown in Table 4-3 seem excessive. For example, the total capital costs are not generally consistent with those presented in Appendix E of the National Council for Air and Stream Improvement (NCASI) paper entitled, "NO_x Control in Forest Products Industry Boilers: A Review of Technologies, Costs, and Industry Experience."[4] Also, the amortization factors of 5% interest and 10 year life are not consistent with the 7% and 15 year life required by the OAQPS

[2] See EPA's BART Guidelines, Section IV.D.Step 4.
[3] See EPA's BART Guidelines, Section V.
[4] Report by the National Council For Air and Stream Improvement entitled, "NO_x Control in Forest Products Industry Boilers: A Review of Technologies, Costs, and Industry Experience", Special Report No. 03-04, August 2003, by Arun V. Someshwar, Ph.D. and Ashok K. Jain, NCASI Southern Regional Center, Gainsville, Florida, Appendix E.

Control Cost Manual.[5] The basis for equipment cost estimates should be documented either with data supplied by an equipment vendor (i.e., budget estimates or bids) or by a referenced source (such as the EPA OAQPS Control Cost Manual), where possible.[6] More realistic figures may make LNB and OFA cost-effective BART alternatives.

Table 4-7 shows that the Ashdown Mill will still "cause" visibility impairment at the Caney Creek Class I area after implementation of controls. In considering its Long Term Strategy in the Regional Haze SIP for Caney Creek, the State should hold discussions at this time with sources to determine the need for additional future controls. The sources might consider an altered mix of capital expenditures for emission control at this time given that information.

Arkansas Electric Cooperative Corporation BART Determination for Bailey and McClellan Stations

Pages 2 and 5 state that because pollutant-specific modeling for these facilities showed that NO_x did not cause or contribute to visibility impacts at any Class I areas and since the PM impact was less than NO_x, only SO2 BART controls would be considered. This is not correct.

BART exemption modeling uses emissions from facility-wide eligible units to evaluate significance against a State determined visibility threshold. In the case of Arkansas, that threshold was 0.5dv. Once a facility has been determined to be significant, each eligible unit is evaluated for reasonable controls. To determine what is reasonable, the State considers all possible control mechanisms by way of the five statutory factors. Each unit is not independently reevaluated for significance. Therefore, NO_x and PM should have been included in the BART determinations for the Bailey and McClellan Stations.

The SO_2 BART determination concluded that "a lower-sulfur fuel oil" should be considered as BART. Only a footnote to a table indicated that 1% low sulfur fuel oil was used for modeling the post-control scenario. First, the BART determination should have considered 1% sulfur fuel oil along with other ultra-low sulfur fuel oils in the analysis and then should have shown the economic viability of one fuel over the others. Serious consideration should be given to a lower-sulfur fuel. Second, a more definitive description of the chosen fuel should be stated and ADEQ should make it an enforceable permit condition.

Other BART determinations reviewed by the FWS contain more supporting documentation than the subject determination in terms of exemption modeling data (before and after controls), scrubber cost estimates, fuel alternatives and the Section 4.4 claim that ". . . high capital cost control of the scrubber alternative (emphasis added). . . may cause the retirement of these units." The EPA's BART Guidelines describe an analysis to be followed when viability of continued plant operations is an issue.[7]

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[5] U. S. Environmental Protection Agency, Office of Air Quality Planning and Standards, OAQPS Control Cost Manual, Fifth Edition, February 1996, EPA 453/B-96-001.
[6] See EPA's BART Guidelines, Section IV.D.Step 4.a.5.
[7] See EPA's BART Guidelines, Section IV.D.Step 4.k.

Finally, since the Bailey plant is currently operated at only 20% of capacity and since the use of 1% sulfur fuel oil results in a continuing "contribution" to visibility impairment at Mingo; ADEQ should place a permit condition on the facility to operate with emission limitations reflecting 20% of capacity. Of course, if technology with higher emissions control efficiency can be provided, then such a permit condition can be relaxed.

AEP Southwestern Electric Power Company (SWEPCO) BART Discussions for the Flint Creek Power Plant

A two-page letter from SWEPCO to the Arkansas Department of Environmental Quality, dated October 26, 2006, is the only information we have available regarding the subject Plant's effort to meet BART. The Regional Haze SIP and/or appendices should contain all of the BART-related data so that they are available to third-party reviewers.

With reference to Item 1, electrostatic precipitators may be BART for particulate matter (PM), but not for the reason cited. **For BART purposes it is inappropriate for a source to model for a single pollutant (e.g., PM) and if that single pollutant does not impact a Class I area by more than the threshold, to eliminate emission units which emit that pollutant from BART for that pollutant. As discussed in EPA's BART Guidelines, the total emissions (SO_2, NO_x and PM) from all emission units from the source should be summed.[8] If the potential to emit of any single visibility impairing pollutant exceeds 250 tons per year then that collection of emissions units is a BART-eligible source. Each emission unit is then subject to a BART review for each of the visibility impairing pollutants. Thus, a BART review should have occurred for the emission units that feed the electrostatic precipitators.** It is acknowledged that on a cost basis, it is likely that no other control equipment would be required other than possibly adjustments to the ESPs.

Item 2 of the letter is not clear as to whether control equipment is already functioning at the presumptive limits of 0.15 lbs/mmBTU for SO_2 and 0.23 lbs/mmBTU for NO_x or whether such equipment is proposed to be added to meet BART. The record should contain information that describes the control equipment that is already or will be installed, along with the data that demonstrates how it is deemed to meet BART. If BART is met by the *current* plant configuration then Item 3 referring to "post-control" CALPUFF modeling should not show visibility improvements.

Item 3 of the letter seems to imply (but does not state) that visibility impairment still exists at one or more Class 1 areas. In considering its Long Term Strategy in the Regional Haze SIP, the State should hold discussions at this time with sources to determine the need for additional future controls. The sources might consider an altered mix of capital expenditures for emission control at this time given that information.

[8] See EPA's BART Guidelines, Section II.A.3 and 4.