

**ENVIRONMENTAL PROTECTION  
AGENCY**
**40 CFR Part 52**
**[EPA-R06-OAR-2008-0727; FRL-9637-4]**
**Approval and Promulgation of  
Implementation Plans; Arkansas;  
Regional Haze State Implementation  
Plan; Interstate Transport State  
Implementation Plan To Address  
Pollution Affecting Visibility and  
Regional Haze**
**AGENCY:** Environmental Protection  
Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** The EPA is partially approving and partially disapproving a revision to the Arkansas State Implementation Plan (SIP) intended to address the regional haze (RH) requirements of the Clean Air Act (CAA or Act). In addition, EPA is partially approving and partially disapproving the portion of the Arkansas Interstate Transport SIP submittal that addresses the visibility requirement of section 110(a)(2)(D)(i)(II) for the 1997 8-hour ozone and 1997 fine particulate matter (PM<sub>2.5</sub>) national ambient air quality standards (NAAQS) that the Arkansas SIP contain adequate provisions to prohibit emissions from interfering with measures required in another state to protect visibility. EPA is approving certain core elements of the RH SIP including: identification of affected Class I areas; determination of baseline and natural visibility conditions; determination of Uniform Rate of Progress (URP); reasonable progress goal (RPG) consultation and long term strategy (LTS) consultation; coordination of RH and reasonably attributable visibility impairment (RAVI); regional haze monitoring strategy and other SIP requirements under 40 CFR 51.308(d)(4); commitment to submit periodic regional haze SIP revisions and periodic progress reports describing progress towards the RPGs; commitment to make a determination of the adequacy of the existing SIP at the time a progress report is submitted; and consultation and coordination with Federal land managers (FLMs). EPA is partially approving and partially disapproving portions of other core elements of the SIP including: identification of best available retrofit technology (BART) eligible sources and subject to BART sources; requirements for BART; Chapter 15 of the Air Pollution Control and Ecology Commission (APCEC) Regulation No. 19, also known as the State's RH Rule; and the LTS. EPA is disapproving

Arkansas's reasonable progress goals (RPGs) required under 40 CFR 51.308(d)(1). This action is being taken under section 110 and part C of the CAA.

**DATES:** This final rule is effective on April 11, 2012.

**ADDRESSES:** EPA has established a docket for this action under Docket ID No. EPA-R06-OAR-2008-0727. All documents in the docket are listed in the Federal e-Rulemaking portal index at <http://www.regulations.gov> and are available either electronically at <http://www.regulations.gov> or in hard copy at EPA Region 6, 1445 Ross Ave., Dallas, TX 75202-2733. To inspect the hard copy materials, please schedule an appointment during normal business hours with the contact listed in the **FOR FURTHER INFORMATION CONTACT** section. A reasonable fee may be charged for copies.

**FOR FURTHER INFORMATION CONTACT:** Ms. Dayana Medina, Air Planning Section (6PD-L), Environmental Protection Agency, Region 6, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202-2733, telephone 214-665-7241; fax number 214-665-7263; email address [medina.dayana@epa.gov](mailto:medina.dayana@epa.gov).

**SUPPLEMENTARY INFORMATION:** Throughout this document wherever "we," "us," "our," or "the Agency" is used, we mean the EPA.

**Overview**

The CAA requires that states develop and implement SIPs to reduce the pollution that causes visibility impairment over a wide geographic area, known as Regional Haze (RH). CAA sections 110(a) and 169A. Arkansas submitted a RH plan to us on September 23, 2008, and August 3, 2010, and submitted supplemental information on September 27, 2011. On October 17, 2011, we proposed to partially approve and partially disapprove certain elements of Arkansas's SIP.<sup>1</sup> Today, we are taking final action by partially approving and partially disapproving the elements of Arkansas's RH SIP addressed in our proposed rule.

In addition to the RH requirements, CAA section 110(a)(2)(D)(i)(II) requires that the Arkansas SIP ensure that emissions from sources within Arkansas do not interfere with the SIP of any other state under part C of the CAA to protect visibility. This requirement is commonly referred to as the visibility prong of "interstate transport," which is also called the "good neighbor"

provision of the CAA. Arkansas submitted a SIP to meet the requirements of interstate transport for the 1997 8-hour ozone and PM<sub>2.5</sub> NAAQS on April 2, 2008, and supplemented it on September 27, 2011. On October 17, 2011, we proposed to partially approve and partially disapprove this submission as it relied upon the State's RH Rule that we were proposing to partially approve and partially disapprove. *Id.* Because the Interstate Transport SIP is conditioned upon the BART determinations in the RH SIP, we are also taking final action by partially approving and partially disapproving elements of Arkansas's Interstate Transport SIP addressed in our proposed rule.

Arkansas submitted Chapter 15 of APCEC Regulation No. 19, its State RH Rule that addresses Arkansas's RH program, to address the requirements in both its RH SIP and its Interstate Transport SIP. In both the RH SIP and the Interstate Transport SIP, Arkansas adopted BART emission limits for certain sources to meet the requirements of both SIPs as stated in the State RH Rule. Based upon public comment, we are disapproving the portion of the BART compliance provision found in the State's RH Rule, Chapter 15 of APCEC Regulation No. 19, at Reg. 19.1504 (B), which requires each source subject to BART to install and operate BART no later than six years after the effective date of Arkansas's RH Rule for both the RH SIP and the Interstate Transport SIP. Because of this disapproval, compliance with Arkansas's BART emission limitations is within five years of approval of Arkansas RH SIP by EPA.

For a RH SIP, the process of establishing BART emission limitations can be logically broken down into three steps. First, states identify those sources which meet the definition of "BART eligible source" set forth in 40 CFR 51.301. Second, states determine whether such sources "emit any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area" (a source which fits this description is "subject to BART"). Third, for each source subject to BART, states then identify the appropriate type and the level of control for reducing emissions by conducting a five-step analysis: *Step 1: Identify All Available Retrofit Control Technologies*, *Step 2: Eliminate Technically Infeasible Options*, *Step 3: Evaluate Control Effectiveness of Remaining Control Technologies*, *Step 4: Evaluate Impacts and Document the Results*, and *Step 5: Evaluate Visibility Impacts*.

<sup>1</sup> 76 FR 64186.

We agree with Arkansas's identification of sources that are BART eligible, with the exception of the 6A Boiler at the Georgia-Pacific Crossett Mill, which we find to be BART eligible. We also agree with Arkansas's identification of subject to BART sources, with the exception of the 6A and 9A Boilers at the Georgia-Pacific Crossett Mill, which we find to be subject to BART. In addition, we are approving a number of BART determinations from Arkansas's RH SIP. We are not able to approve the following BART determinations made by Arkansas: the sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>x</sub>), and particulate matter (PM) BART determinations for the Arkansas Electric Cooperative Corporation (AECC) Bailey Plant Unit 1 and the AECC McClellan Plant Unit 1; the SO<sub>2</sub> and NO<sub>x</sub> BART determinations for the American Electric Power (AEP) Flint Creek Plant Boiler No. 1; the NO<sub>x</sub> BART determination for the natural gas firing scenario and the SO<sub>2</sub>, NO<sub>x</sub>, and PM BART determinations for the fuel oil firing scenario for the Entergy Lake Catherine Plant Unit 4; the SO<sub>2</sub> and NO<sub>x</sub> BART determinations for both the bituminous and sub-bituminous coal firing scenarios for the Entergy White Bluff Plant Units 1 and 2; the BART determination for the Entergy White Bluff Plant Auxiliary Boiler; the SO<sub>2</sub> and NO<sub>x</sub> BART determinations for the Domtar Ashdown Mill Power Boiler No. 1; and the SO<sub>2</sub>, NO<sub>x</sub> and PM BART determinations for the Domtar Ashdown Mill Power Boiler No. 2. In reviewing the State's BART determinations for these pollutants and units, we found that the State did not satisfy all the regulatory and statutory requirements in making these BART determinations. We have therefore determined it is appropriate to finalize our proposed disapproval of the State's BART determinations for these units, because we conclude that the flaws and omissions in the State's BART analyses were significant, and that the State therefore lacked adequate record support and a reasoned basis for its analyses, as required by the RH Rule (RHR). As we previously noted, Arkansas submitted Chapter 15 of APCEC Regulation No. 19, also known as the State's RH Rule, as a SIP revision to address both RH and the visibility transport requirements. With respect to RH, we are partially approving and partially disapproving Chapter 15 of APCEC Regulation No. 19, such that our disapproval is of those portions of the State's RH Rule that correspond to portions of the Arkansas RH SIP we are disapproving. In particular, we note that

based upon public comment, we also are disapproving the portion of the BART compliance provision found in Chapter 15 of APCEC Regulation No. 19, at Reg. 19.1504(B), which requires each source subject to BART to install and operate BART requirements no later than six years after the effective date of the State's regulation. We are approving the portion of the BART compliance provision that requires each Arkansas subject to BART source to install and operate BART as expeditiously as practicable, but in no event later than five years after EPA approval of the Arkansas RH SIP, for those sources' BART determinations we are approving. We find that this is consistent with the requirements under 40 CFR 51.308(e)(iv). Arkansas's inclusion of the compliance provision that would require Arkansas subject to BART sources to install and operate BART no later than six years after the effective date of the State's regulation (if such date takes place before five years from EPA approval of the Arkansas RH SIP) is not a required element of the RH SIPs to be developed and submitted by states pursuant to section 169 of the CAA. We are also partially approving and partially disapproving the State's submitted LTS because it relies on portions of the RH SIP we are disapproving, including some of Arkansas's BART emission limits. We are disapproving the State's RPGs under 40 CFR 51.308(d)(1) because Arkansas did not consider the four factors that states are required to consider in establishing RPGs under the CAA and 40 CFR 51.308(d)(1)(A).

We are approving the remaining sections of the RH SIP submission. This includes certain core elements of the SIP, including Arkansas's (1) Identification of affected Class I areas; (2) determination of baseline and natural visibility conditions; (3) determination of the URP; (4) RPG consultation and LTS consultation; (5) coordination of regional haze and reasonably attributable visibility impairment; (6) monitoring strategy and other implementation requirements; (7) commitment to submit periodic RH SIP revisions and periodic progress reports describing progress towards the RPGs; (8) commitment to make a determination of the adequacy of the existing SIP at the time a progress report is submitted; (9) coordination with states and FLMs; and (10) the following BART determinations from Arkansas's RH SIP:

- The PM BART determination for the AEP Flint Creek Plant Boiler No. 1.
- The SO<sub>2</sub> and PM BART determinations for the natural gas firing

scenario for the Entergy Lake Catherine Plant Unit 4.

- The PM BART determinations for both the bituminous and sub-bituminous coal firing scenarios for the Entergy White Bluff Plant Units 1 and 2.
- The PM BART determination for the Domtar Ashdown Mill Power Boiler No. 1.

Arkansas stated in its April 2, 2008 submittal that it is relying on Chapter 15 of APCEC Regulation No. 19, also known as the State's RH Rule, to satisfy the requirements of section 110(a)(2)(D)(i)(II) that emissions from Arkansas sources not interfere with measures required in the SIP of any other state under part C of the CAA to protect visibility. The Arkansas Department of Environmental Quality (ADEQ) also stated in its April 2, 2008, submittal that it is not possible to assess whether there is any interference with the measures in the applicable SIP for another state designed to protect visibility for the 8-hour ozone and PM<sub>2.5</sub> NAAQS until ADEQ submits and EPA approves Arkansas's RH SIP. We proposed to partially approve and partially disapprove this submission as it relied upon the State's RH Rule that we were proposing to partially approve and partially disapprove. In developing their RH SIP and RPGs, Arkansas and potentially impacted States collaborated through the Central Regional Air Planning (CENRAP) association. Each state developed its RH Plans and RPGs based on the CENRAP modeling. The CENRAP modeling was based in part on the emissions reductions each state intended to achieve by 2018. Some of the emissions reductions included in the CENRAP's modeling and thus relied upon by other states, were from BART controls on Arkansas subject to BART sources. Compliance with these BART requirements will ensure that Arkansas obtains its share of the emission reductions relied upon by other states to meet the RPGs for their Class I areas. As already previously discussed in this final rulemaking, Arkansas submitted Chapter 15 of APCEC Regulation No. 19, also known as the State's RH Rule, as a SIP revision to address both RH and the visibility transport requirements. With respect to the visibility interstate transport SIP, we are partially approving and partially disapproving the submitted Chapter 15 of APCEC Regulation No. 19, such that our disapproval is of those portions that correspond to the submitted BART determinations we are disapproving. In response to public comment, we note that we also are disapproving the portion of the BART compliance

provision found in the APCEC Regulation No. 19, at Reg. 19.1504(B), which requires each source subject to BART to install and operate BART no later than six years after the effective date of the State's regulation. Since compliance of Arkansas's subject to BART sources with BART requirements now is solely dependent upon our approval of the RH SIP, and since we are disapproving the portion of the RH SIP which includes some of Arkansas's BART determinations, a portion of the emission reductions committed to by Arkansas and relied upon by other states will not be realized.

Consequently, Arkansas's emissions will interfere with other states' SIPs to protect visibility. Therefore, we are partially approving and partially disapproving the portion of the Arkansas Interstate Transport SIP submittal that addresses the visibility requirement of section 110(a)(2)(D)(i)(II) that emissions from Arkansas sources not interfere with measures required in the SIP of any other state under part C of the CAA to protect visibility.

Under the CAA,<sup>2</sup> we must, within 24 months following a final disapproval, either approve a SIP or promulgate a Federal Implementation Plan (FIP). We will of course consider, and would prefer, approving a SIP if the state submits a revised plan that we can approve before the expiration of the mandatory FIP clock for the portions of the SIP we are disapproving in this rulemaking action.

We originally provided a 30 day public comment period for this action, which we extended after receiving several requests for an extension on the comment period. We held a 66 day public comment period for this action. Many public commenters disagreed with several aspects of our proposal, expressing the belief that we should approve either more portions of the Arkansas RH SIP or the SIP in its entirety. We also received public comments agreeing with several aspects of our proposal, expressing the belief that we should disapprove either more portions of the Arkansas RH SIP or the SIP in its entirety. All public comments and our responses are discussed in more detail in section III of this final rulemaking action.

This action is being taken under section 110 and part C of the CAA.

## Table of Contents

- I. Summary of Our Proposal
  - A. Regional Haze
  - B. Interstate Transport of Pollutants and Visibility Protection

- II. Final Decision
  - A. Regional Haze
  - B. Interstate Transport of Pollutants and Visibility Protection
- III. Public Comments Received and Our Responses
  - A. Comments on Presumptive Emission Limits
  - B. Comments on Reasonable Progress Goals and Long Term Strategy
  - C. Comments on BART
    - 1. Evaluation of the Most Stringent Level of Control in the BART Analysis
    - 2. Evaluation of Post-Combustion Controls in the BART Analysis
    - 3. Comments on the State's PM BART Emission Limits We Proposed to Approve
    - 4. Comments on the Capacity Factor Used in the State's BART Analyses for Entergy Lake Catherine and White Bluff
    - 5. Comments on the State's Cost Evaluations
    - 6. Comments on the August 2008 Revised BART Analysis for White Bluff
    - 7. Other Comments Related to BART
  - D. Comments on the Arkansas Pollution Control and Ecology Commission Variance for Subject to BART Sources
  - E. Comments on BART and the Forthcoming MACT Requirements
  - F. Comments on Modeling
  - G. Comments on Legal Issues
    - 1. Comments on Regional Haze
    - 2. Comments on Interstate Transport and Visibility
  - H. Other Comments
  - I. Comments Requesting an Extension to the Public Comment Period
- IV. Statutory and Executive Order Reviews

## I. Summary of Our Proposal

On October 17, 2011, we published the proposal on which we are now taking final action.<sup>3</sup> We proposed to partially approve and partially disapprove Arkansas's RH SIP revision submitted on September 23, 2008, August 3, 2010, and supplemented on September 27, 2011. We also proposed to partially approve and partially disapprove a portion of a SIP revision we received from the State of Arkansas on April 2, 2008, as supplemented on September 27, 2011, for the purpose of addressing the "good neighbor" provisions of the CAA section 110(a)(2)(D)(i)(II) with respect to visibility for the 1997 8-hour ozone NAAQS and the PM<sub>2.5</sub> NAAQS.

### A. Regional Haze

We proposed to approve the State's identification of BART-eligible sources, with the exception of the 6A Boiler at the Georgia-Pacific Crossett Mill, which we find to be BART-eligible. We proposed to approve the State's identification of subject to BART sources, with the exception of the 6A and 9A Boilers at the Georgia-Pacific

Crossett Mill, which we find to be subject to BART. We also proposed to approve certain core elements of the SIP, including Arkansas's (1) identification of affected Class I areas; (2) determination of baseline and natural visibility conditions; (3) determination of the URP; (4) RPG consultation and LTS consultation; (5) coordination of regional haze and reasonably attributable visibility impairment; (6) monitoring strategy and other implementation requirements; (7) commitment to submit periodic RH SIP revisions and periodic progress reports describing progress towards the RPGs; (8) commitment to make a determination of the adequacy of the existing SIP at the time a progress report is submitted; (9) coordination with states and FLMS; and (10) the following BART determinations from Arkansas's RH SIP: the PM BART determination for the AEP Flint Creek Plant Boiler No. 1; the SO<sub>2</sub> and PM BART determinations for the natural gas firing scenario for the Entergy Lake Catherine Plant Unit 4; the PM BART determinations for both the bituminous and sub-bituminous coal firing scenarios for the Entergy White Bluff Plant Units 1 and 2; and PM BART determination for the Domtar Ashdown Mill Power Boiler No. 1.

We proposed to disapprove Arkansas's SO<sub>2</sub>, NO<sub>x</sub>, and PM BART determinations for the AECC Bailey Plant Unit 1 and the AECC McClellan Plant Unit 1; the SO<sub>2</sub> and NO<sub>x</sub> BART determinations for the AEP Flint Creek Plant Boiler No. 1; the NO<sub>x</sub> BART determination for the natural gas firing scenario and the SO<sub>2</sub>, NO<sub>x</sub>, and PM BART determinations for the fuel oil firing scenario for the Entergy Lake Catherine Plant Unit 4; the SO<sub>2</sub> and NO<sub>x</sub> BART determinations for both the bituminous and sub-bituminous coal firing scenarios for the Entergy White Bluff Plant Units 1 and 2; the BART determination for the Entergy White Bluff Plant Auxiliary Boiler; the SO<sub>2</sub> and NO<sub>x</sub> BART determinations for the Domtar Ashdown Mill Power Boiler No. 1; and the SO<sub>2</sub>, NO<sub>x</sub> and PM BART determinations for the Domtar Ashdown Mill Power Boiler No. 2 because they do not comply with our regulations under 40 CFR 51.308(e). We also proposed to partially approve and partially disapprove the Arkansas RH Rule, Chapter 15 of APCEC Regulation No. 19, such that our proposed disapproval was of those portions of the State's RH Rule that correspond to portions of the Arkansas RH SIP we were proposing to disapprove. We also proposed to partially approve and partially disapprove the LTS under 40 CFR

<sup>2</sup> CAA section 110(c)(1).

<sup>3</sup> 76 FR 64186.

51.308(d)(3) because Arkansas has not shown that the strategy is adequate to achieve the RPGs set by Arkansas and by other nearby states.

We proposed to disapprove the State's RPGs under 40 CFR 51.308(d)(1) because Arkansas did not consider the four factors states are required to consider in establishing RPGs under the CAA and 40 CFR 51.308(d)(1)(A).

#### *B. Interstate Transport of Pollutants and Visibility Protection*

We proposed to partially approve and partially disapprove a portion of a SIP revision we received from the State of Arkansas on April 2, 2008, as supplemented on September 27, 2011, for the purpose of addressing the "good neighbor" provisions of the CAA section 110(a)(2)(D)(i) with respect to visibility for the 1997 8-hour ozone NAAQS and the PM<sub>2.5</sub> NAAQS. This SIP revision addressed the requirement of section 110(a)(2)(D)(i)(II) that emissions from Arkansas sources do not interfere with measures required in the SIP of any other state under part C of the CAA to protect visibility. ADEQ participated in the CENRAP visibility modeling development that assumed certain SO<sub>2</sub>, NO<sub>x</sub>, and PM reductions from Arkansas's BART sources. Compliance with these BART requirements will ensure that Arkansas obtains its share of the emission reductions relied upon by other states to meet the RPGs for their Class I areas. Since compliance of Arkansas's subject to BART sources with BART requirements is dependent upon our approval of the RH SIP, and since we proposed to disapprove the portion of the RH SIP which includes some of Arkansas's BART determinations, a portion of the emission reductions committed to by Arkansas and relied upon by other states will not be realized and, as a consequence, Arkansas's emissions will interfere with other states' SIPs to protect visibility.

## **II. Final Decision**

### *A. Regional Haze*

With one exception, we are finalizing our action as proposed. As discussed below, based upon public comment, we are adjusting our action on the Arkansas RH Rule. We are partially approving and partially disapproving the Arkansas RH SIP revision submitted on September 23, 2008, August 3, 2010, and supplemented on September 27, 2011. We are approving Arkansas's identification of sources that are BART eligible, with the exception of the 6A Boiler at the Georgia-Pacific Crossett Mill, which we find to be BART-

eligible. We are also approving Arkansas's identification of subject to BART sources, with the exception of the 6A and 9A Boilers at the Georgia-Pacific Crossett Mill, which we find to be subject to BART.

We are disapproving Arkansas's SO<sub>2</sub>, NO<sub>x</sub>, and PM BART determinations for the AECC Bailey Plant Unit 1 and the AECC McClellan Plant Unit 1; the SO<sub>2</sub> and NO<sub>x</sub> BART determinations for the AEP Flint Creek Plant Boiler No. 1; the NO<sub>x</sub> BART determination for the natural gas firing scenario and the SO<sub>2</sub>, NO<sub>x</sub>, and PM BART determinations for the fuel oil firing scenario for the Entergy Lake Catherine Plant Unit 4; the SO<sub>2</sub> and NO<sub>x</sub> BART determinations for both the bituminous and sub-bituminous coal firing scenarios for the Entergy White Bluff Plant Units 1 and 2; the BART determination for the Entergy White Bluff Plant Auxiliary Boiler; the SO<sub>2</sub> and NO<sub>x</sub> BART determinations for the Domtar Ashdown Mill Power Boiler No. 1; and the SO<sub>2</sub>, NO<sub>x</sub> and PM BART determinations for the Domtar Ashdown Mill Power Boiler No. 2. With respect to RH, we are partially approving and partially disapproving the Arkansas RH Rule, Chapter 15 of APCEC Regulation No. 19, such that our disapproval is of those portions of the State's RH Rule that correspond to portions of the Arkansas RH SIP we are disapproving and our approval is of the remaining portions. We do note that in response to comments received, we are making one change to the portions of the Arkansas RH Rule we are approving from what we proposed to approve in our October 17, 2011, proposed rulemaking. Specifically, in our proposed rulemaking, we proposed to approve Reg. 19.1504(B), which requires Arkansas's subject to BART sources to "install and operate BART as expeditiously as practicable, but in no event later than 6 years after the effective date of [the State RH Rule] or 5 years after EPA approval of the Arkansas Regional Haze State Implementation Plan, whichever comes first." As discussed in more detail in our response to comments, because the State revised its rule to delete the provision that would require Arkansas's subject to BART sources to comply with BART within 6 years of the effective date of the State RH Rule, we are disapproving this portion of the BART compliance provision found in Chapter 15 of APCEC Regulation No. 19. We are partially approving and partially disapproving the portion of the BART compliance provision that requires each Arkansas subject to BART source to

install and operate BART as expeditiously as practicable, but in no event later than five years after EPA approval of the Arkansas RH SIP. The disapproval is of those portions of the State's RH Rule that correspond to portions of the Arkansas RH SIP we are disapproving. We find that this is consistent with the requirements under 40 CFR 51.308(e)(iv). We are partially approving and partially disapproving the LTS under 40 CFR 51.308(d)(3). We are disapproving the State's RPGs under 40 CFR 51.308(d)(1).

We are approving the remaining sections of the RH SIP submission. This includes certain core elements of the SIP, including Arkansas's (1) identification of affected Class I areas; (2) determination of baseline and natural visibility conditions; (3) determination of the URP; (4) RPG consultation and LTS consultation; (5) coordination of regional haze and reasonably attributable visibility impairment; (6) monitoring strategy and other implementation requirements; (7) commitment to submit periodic RH SIP revisions and periodic progress reports describing progress towards the RPGs; (8) commitment to make a determination of the adequacy of the existing SIP at the time a progress report is submitted; (9) coordination with states and FLMs; and (10) the following BART determinations from Arkansas's RH SIP:

- The PM BART determination for the AEP Flint Creek Plant Boiler No. 1.
- The SO<sub>2</sub> and PM BART determinations for the natural gas firing scenario for the Entergy Lake Catherine Plant Unit 4.
- The PM BART determinations for both the bituminous and sub-bituminous coal firing scenarios for the Entergy White Bluff Plant Units 1 and 2.
- The PM BART determination for the Domtar Ashdown Mill Power Boiler No. 1.

### *B. Interstate Transport of Pollutants and Visibility Protection*

We are partially approving and partially disapproving a portion of a SIP revision we received from the State of Arkansas on April 2, 2008, as supplemented on September 27, 2011, for the purpose of addressing the "good neighbor" provisions of the CAA section 110(a)(2)(D)(i) with respect to visibility for the 1997 8-hour ozone NAAQS and the PM<sub>2.5</sub> NAAQS. Because Arkansas relied on Chapter 15 of APCEC Regulation No. 19, to satisfy the requirements of section 110(a)(2)(D)(i)(II) that emissions from Arkansas sources not interfere with

measures required in the SIP of any other state under part C of the CAA to protect visibility, we are partially approving and partially disapproving the submitted Chapter 15 of APCEC Regulation No. 19, such that our disapproval is of those portions that correspond to the submitted BART determinations we are disapproving. In response to public comment, we note that we also are disapproving the portion of the BART compliance provision found in the APCEC Regulation No. 19, at Reg. 19.1504(B), which requires each source subject to BART to install and operate BART no later than six years after the effective date of the State's regulation. Since compliance of Arkansas's subject to BART sources with BART requirements now is solely dependent upon our approval of the RH SIP, and since we are disapproving the portion of the RH SIP which includes some of Arkansas's BART determinations, a portion of the emission reductions committed to by Arkansas and relied upon by other states will not be realized and, as a consequence, Arkansas's emissions will interfere with other states' SIPs to protect visibility. Therefore, we are partially approving and partially disapproving the portion of the Arkansas Interstate Transport SIP submittal that addresses the visibility requirement of section 110(a)(2)(D)(i)(II) that emissions from Arkansas sources not interfere with measures required in the SIP of any other state under part C of the CAA to protect visibility.

### III. Public Comments Received and Our Responses

During the public notice and comment period, we received 13 comment letters both supporting and opposing our proposal. We received comments from the ADEQ, the Utah Department of Environmental Quality (UDEQ), the National Park Service, the Sierra Club, Entergy Arkansas Inc., the American Electric Power/Southwestern Electric Power Company (AEP-SWEPCO), the Arkansas Electric Cooperative Corporation, Domtar Industries Inc., Nucor Steel-Arkansas, the Competitive Enterprise Institute, the Utility Air Regulatory Group, PacifiCorp Energy, and the Energy and Environmental Alliance of Arkansas. The comments we received opposing our proposal contended that we had either overstepped our bounds in proposing a partial disapproval or that we had not gone far enough in our action and should fully disapprove Arkansas's RH SIP. Many of the comments received are similar in nature and are grouped together accordingly.

Thus, many of the comments you will read are representative of more than one comment letter. The comments are summarized and addressed below. The full text received from these commenters is included in the docket associated with this action.

#### A. Comments on Presumptive Emission Limits

*Comment:* The SO<sub>2</sub> and NO<sub>x</sub> BART determinations for the AEP Flint Creek Boiler No. 1 and Entergy White Bluff Plant Units 1 and 2 meet the presumptive BART limits established in 40 CFR part 51, appendix Y (BART Guidelines). In the Arkansas RH proposal, EPA did not justify its decision that the presumptive BART limits are unacceptable. EPA is insisting on a five factor analysis even when a source can meet the presumptive limits. EPA's current interpretation of the presumptive BART limits makes the presumptive BART limits meaningless, contrary to the requirements of the CAA and the clear intent of the BART Rule. The CAA singles out electric generating units (EGUs) located at 750 megawatt (MW) power plants for specific BART controls (42 U.S.C. 7491(b)(2)), and EPA adopted the presumptive BART limits to establish the specific control levels required for these EGUs. Since EPA went through extensive analysis to establish presumptive BART limits, the only rational explanation is that EPA intended for those limits to be meaningful. EPA is rationalizing its decision on the Arkansas RH SIP as if the presumptive BART limits were no longer a binding regulation, and there is concern that EPA is attempting to establish new, more stringent presumptive BART limits through case-by-case disapprovals of state BART determinations. Unless and until EPA goes through notice and comment rulemaking to remove the presumptive emission limits and establish other requirements consistent with the CAA, the presumptive BART limits in the promulgated BART Rule continue to establish the requirement that states must meet in their regional haze SIPs for large coal-fired EGUs and EPA must approve a state's BART determination if it meets the presumptive regulatory limits.

*Response:* Our application of the presumptive BART limits in our proposed rulemaking on the Arkansas RH SIP gives proper treatment of presumptive BART limits and is consistent with the requirements of the CAA and the intent of the BART Rule.

We note that the states generally have broad authority to decide appropriate BART controls. However, the CAA gives

EPA a more active role in establishing BART emission limits for large power plants.<sup>4</sup> The CAA states the following regarding emission limits for fossil-fuel fired generating power plants having a total generating capacity in excess of 750 MW:

“In the case of a fossil-fuel fired generating power plant having a total generating capacity in excess of 750 megawatts, the emissions limitations required under this paragraph shall be determined pursuant to guidelines, promulgated by the Administrator under paragraph (1).”<sup>5</sup>

EPA disagrees that the CAA mandates specific control levels (*i.e.* presumptive emission limits) for power plants with a total generating capacity of 750 MW or greater. Rather, the CAA directed EPA to develop guidelines for States to establish BART emission limits, and required that power plants having a total generating capacity in excess of 750 MW follow the guidelines when establishing BART emission limits. In response, in 2005 EPA promulgated the BART Guidelines, which provide a detailed description of how a State must approach the BART determination process for certain large EGUs, and required that the determination of fossil-fuel fired power plants having a total generating capacity greater than 750 MW must be made pursuant to the BART Guidelines.<sup>6</sup> As such, the plain reading of the CAA language makes it clear the intent was to make the BART Guidelines mandatory for EGUs larger than 750 MW, as opposed to presumptive limits. Therefore, EPA's proposed rulemaking on the Arkansas RH SIP is not contrary to the requirements of the CAA.

The EPA went through extensive analysis to establish presumptive BART emission limits, and intended these limits to be meaningful. As stated in our proposed rulemaking on the Arkansas RH SIP, the purpose of the presumptive limits in the BART Guidelines was to identify controls that the Agency considered to be generally cost-effective across all affected units. Because EPA's extensive analysis found that these controls are generally cost-effective across all affected units and were anticipated to result in a substantial degree of visibility improvement, EPA concluded that such units should at least meet the presumptive limits. However, EPA's BART Rule does not state that the presumptive limits will represent the “best available retrofit

<sup>4</sup> 69 FR 39129 and CAA section 169(a)(4).

<sup>5</sup> 42 U.S.C. 7491(b).

<sup>6</sup> 40 CFR 51.308(e)(1)(ii)(B) and Appendix Y to Part 51.

controls” for all EGUs at these larger power plants. Instead, EPA’s BART Rule and the BART Guidelines make clear that in developing the presumptive emission limits, EPA made many design and technological assumptions, and that the presumptive limits may not be BART in every case. As such, the presumption in the BART Rule is not that the presumptive limits will be BART in every case. Rather, the presumption in the BART Rule is more accurately interpreted to be that the controls reflected by the presumptive limits are cost-effective and will result in considerable visibility improvement. EPA’s intent was for these generally cost-effective controls to be used in the State’s BART analysis considering the five factors specified in CAA section 169A(g)(2), and considering the level of control that is currently achievable at the time that the BART analysis is being conducted.

We note the RHR states:

“States, as a general matter, must require owners and operators of greater than 750 MW power plants to meet these BART emission limits. We are establishing these requirements based on the consideration of certain factors discussed below. Although we believe that these requirements are extremely likely to be appropriate for all greater than 750 MW power plants subject to BART, a State may establish different requirements if the State can demonstrate that an alternative determination is justified based on a consideration of the five statutory factors.”<sup>7</sup>

The RHR also states:

“If, upon examination of an individual EGU, a State determines that a different emission limit is appropriate based upon its analysis of the five factors, then the State may apply a more or less stringent limit.”<sup>8</sup>

Therefore, the presumptive emission limits in the BART Guidelines are rebuttable.<sup>9</sup> The presumptive emission limits apply to power plants with a total generating capacity of 750 MW or greater insofar as these sources are required to adopt emission limits at least as stringent as the presumptive limits, unless after considering the five statutory factors, the State determines that the presumptive emission limits are not appropriate. Moreover, the RHR and BART Guidelines do not exempt states from a five factor BART analysis, and that BART analysis may result in a determination of BART emission limits that are more or less stringent than the presumptive emission limits for subject to BART sources. The RHR states:

“For each source subject to BART, 40 CFR 51.308(e)(1)(ii)(A) requires that States

identify the level of control representing BART after considering the factors set out in CAA section 169A(g), as follows: States must identify the best system of continuous emission control technology for each source subject to BART taking into account the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use at the source, the remaining useful life of the source, and the degree of visibility improvement that may be expected from available control technology.”<sup>10</sup>

As previously stated, the presumptive emission limits apply to power plants with a total generating capacity of 750 MW or greater insofar as these sources are required to adopt emission limits at least as stringent as the presumptive limits, unless after considering the five statutory factors, the State determines that a more or less stringent emission limit is appropriate. Further, EPA is not attempting to establish new, more stringent presumptive BART limits. As a matter of fact, EPA’s proposed rulemaking did not propose to establish particular BART emission limits on any of Arkansas’s subject to BART sources. Instead, EPA’s proposed rulemaking proposed to disapprove the State’s BART limits where the State adopted the NO<sub>x</sub> and SO<sub>2</sub> presumptive emission limits without conducting a proper five factor BART analysis, as required by the RHR and the CAA, to determine if an emission limit more or less stringent than the presumptive limits is BART.

EPA disagrees that our approach is not consistent with the RHR and that we must undergo notice and comment rulemaking to follow our application of the presumptive BART limits for large coal-fired EGUs. EPA reiterates that the RHR and the BART Guidelines make clear that the presumptive limits are rebuttable and may not necessarily be the appropriate level of control for all EGUs.<sup>11</sup> Therefore, EPA is not required to approve every BART determination that meets the presumptive emission limits, especially when there is no analysis that supports the state’s decision in adopting the presumptive limit instead of a more or less stringent emission limit.

*Comment:* The BART Rule shows that an alternative analysis is required only when a source cannot meet the presumptive limits (40 CFR part 51, appendix Y, section IV.E.5). As such, only when EGUs cannot meet presumptive NO<sub>x</sub> limits using current combustion control technology should other technologies be considered. The plain reading of the BART Rule is

contrary to EPA’s proposal to disapprove the NO<sub>x</sub> presumptive emission limits adopted for BART by Arkansas.

*Response:* Regarding NO<sub>x</sub> presumptive emission limits, the BART Rule provides that:

“For coal-fired EGUs greater than 200 MW located at greater than 750 MW power plants and operating without post-combustion controls (*i.e.* Selective Catalytic Reduction or Selective Non-Catalytic Reduction), we have provided presumptive NO<sub>x</sub> limits, differentiated by boiler design and type of coal burned. You may determine that an alternative control level is appropriate based on a careful consideration of the statutory factors. For coal-fired EGUs greater than 200 MW located at power plants 750 MW or less in size and operating without post-combustion controls, you should likewise presume that these same levels are cost-effective, unless you determine that an alternative control level is justified based on consideration of the statutory factors.”<sup>12</sup>

The BART Rule does not contain language stating that an alternative analysis is required only when a source cannot meet the presumptive limits. The BART Guidelines provides the following:

“Most EGUs can meet these presumptive NO<sub>x</sub> limits through the use of current combustion control technology, *i.e.* the careful control of combustion air and low-NO<sub>x</sub> burners. For units that cannot meet these limits using such technologies, you should consider whether advanced combustion control technologies such as rotating opposed fire air should be used to meet these limits.”<sup>13</sup>

The intent of this language is to communicate that EPA believes that the large majority of units can at least meet the presumptive limits at relatively low costs (*i.e.* without post-combustion controls). Because of this, EPA found it appropriate to require EGUs greater than 200 MW located at greater than 750 MW power plants and without post-combustion controls to at least meet the presumptive limit, unless based on an evaluation of the statutory factors the State found a more or less stringent emission limit is appropriate.<sup>14</sup> The language in the BART Guidelines should not be misinterpreted to mean that sources capable of meeting the presumptive limits may forego a BART analysis or that they need not consider post-combustion controls if they can

<sup>7</sup> 70 FR 39131.

<sup>8</sup> 70 FR 39132.

<sup>9</sup> 71 FR 60619.

<sup>10</sup> 70 FR 39158.

<sup>11</sup> 71 FR 60619.

<sup>12</sup> 70 FR 39171.

<sup>13</sup> Appendix Y to Part 51, section IV.E.5.

<sup>14</sup> 70 FR 39132.

meet the NO<sub>x</sub> presumptive limits with combustion controls. States have a duty to evaluate the five statutory factors,<sup>15</sup> and should consider the level of control that is currently achievable at the time the BART analysis is conducted.<sup>16</sup>

*Comment:* The preamble discussion of the BART Rule shows that the presumptive BART limits were intended to establish a presumptively acceptable BART determination for large EGUs. The preamble to the proposed May 5, 2004, and final July 5, 2005, BART Rule demonstrate the clear intent that the presumptive limits in the BART Rule are BART. In its proposed disapproval of the Arkansas RH SIP, EPA ignores this. Nothing in the BART Rule or the preamble to the rule requires that a source achieve a more stringent emission rate if the emission controls allow the source to meet the presumptive emission limits. Section 169A(g) of the CAA requires a balancing of the five statutory factors when a State is determining BART. The preamble to the BART Rule describes the presumptive limits as reasonable, cost-effective, extremely likely to be appropriate and likely to result in a significant degree of visibility improvement. The term “presumptive minimum” or a discussion of controls more stringent than the presumptive limits is not found in the BART Rule.

*Response:* The EPA disagrees that the presumptive BART limits in the BART Rule were intended to establish BART in every case, as nothing on the record states that the presumptive limits represent the “best available retrofit controls” for all EGUs at these large power plants. On the contrary, EPA’s BART Rule and the BART Guidelines make clear that in developing the presumptive emission limits, EPA made many design and technological assumptions, and that the presumptive limits may not be BART in every case. As such, the presumption in the BART Rule is not that the presumptive limits will be BART in every case. Rather, the presumption in the BART Rule is more accurately interpreted to be that the controls reflected by the presumptive limits are cost-effective and will result in considerable visibility improvement.

EPA’s proposed rulemaking on the Arkansas RH SIP did not propose to require Arkansas’s subject to BART sources to achieve an emission rate more stringent than the presumptive emission limits. Rather, EPA’s proposed rulemaking proposed to disapprove the BART emission limits for subject to

BART sources where the State adopted presumptive emission limits without conducting a proper BART five factor analysis. Only after the State conducts a proper evaluation of the five statutory factors, as required by 40 CFR 51.308(e)(1)(ii)(A) and section 169A(g) of the CAA, or EPA conducts one in the context of a FIP, will it be demonstrated whether any of Arkansas’s subject to BART sources must achieve an emission rate more (or less) stringent than the presumptive limits.

EPA agrees that section 169A(g) of the CAA requires a balancing of the five statutory factors when a State is determining BART.<sup>17</sup> EPA is also in agreement that the preamble to the BART Rule describes the presumptive limits as reasonable, cost-effective, extremely likely to be appropriate and likely to result in a significant degree of visibility improvement. However, EPA reiterates that the BART Rule does not state that the presumptive limits will represent the “best available retrofit controls” for all EGUs at these larger power plants. EPA agrees that the term “presumptive minimum” or a discussion of controls more stringent than the presumptive limits are not explicitly found in the BART Rule, but the BART Rule does require that affected sources achieve at least the level of control represented by the presumptive limits, unless a proper evaluation of the five statutory factors demonstrates that a different level of control is BART for the affected sources.

*Comment:* The CAA gives states discretion to make BART determinations, and while a state may choose to establish a limit that is more stringent than the presumptive limit, there is nothing in the BART Rule that would require a state to do so. There are a number of examples in the BART regulations and in the preambles to the proposed and final BART Rule, showing that a state has discretion to choose to demonstrate an alternative control level. The preamble to the BART Rule recognizes that in some limited cases, where the source cannot meet the presumptive limit, a state could demonstrate an alternative level of control. The plain meaning of the BART Rule and the preamble discussion of the presumptive limits supports a reading of the BART Rule that discretion rests with a state, not EPA, as to whether the presumptive limits are reasonable.

*Response:* The EPA agrees with the comment that the CAA gives states discretion to make BART determinations, and that there are examples in the BART regulations and

in the preambles to the proposed and final BART Rule showing that a state has discretion to choose an alternative control level after considering the five statutory factors. However, section 169A(g) of the CAA requires States to consider these statutory factors in determining BART for affected sources.<sup>18</sup> If a proper evaluation of the five statutory factors demonstrates that an emission limit more or less stringent than the presumptive limit is BART for the subject to BART source in question, then the State must require the source to comply with such emission limit. EPA agrees that states have considerable discretion in making BART determinations, but if the State has not conducted a proper evaluation of the five statutory factors, as required by 40 CFR 51.308(e)(1)(ii)(A) and section 169A(g) of the CAA, the State cannot determine that the presumptive limits are the “best available retrofit controls” for Arkansas’s affected sources.

*Comment:* The EPA proposes to reject Arkansas’s BART determinations that rely on the presumptive BART limits codified in EPA’s own BART Guidelines, arguing that states are required to perform a case-by-case BART analysis in every instance and that they can never rely on the presumptive limits (76 FR 64201). The BART rules state that the presumptive limits should be adopted unless the state BART-determining authority determines that an alternative control level is justified based on a consideration of the statutory factors (70 FR 39171). Given the assessment EPA undertook to determine the presumptive BART limits and that EPA has determined in a formally codified rule that they are likely to be suitable as BART limits in nearly every circumstance to which they apply—except to the extent states make a determination otherwise in a particular case—states properly have discretion to adopt the presumptive limits. The determination as to whether the presumptive limits should or should not apply is one that is well within the discretion of the state. There is little reason for EPA to have established the presumptive BART limits if states cannot rely on them. If EPA requires a case-by-case analysis for every facility to repeatedly test the assumptions underlying the presumptive limits, this would result in a senseless approach that would vitiate the establishment of the presumptive limits. This would be contrary to EPA’s own nationally applicable regulations developed as a product of notice-and-comment

<sup>15</sup> See 40 CFR 51.308(e)(1)(ii)(A) and 42 U.S.C. 7491(g)(2).

<sup>16</sup> 70 FR 39171.

<sup>17</sup> 42 U.S.C. 7491(g)(2).

<sup>18</sup> 42 U.S.C. 7491(g)(2).

rulemaking. If a specific assessment is required in every case, there is no reason to have a presumptive limit in the first place. Regulations, like statutes, should not be interpreted in a manner that is more stringent than the plain language requires. Where there is no clear and compelling evidence that presumptive limits cannot be BART for a given source, EPA should accept state BART determinations that rely on the presumptive limits.

*Response:* The EPA agrees that the State has considerable discretion in making BART determinations, but if the State has not conducted a proper evaluation of the five statutory factors, as required by 40 CFR 51.308(e)(1)(ii)(A) and section 169A(g) of the CAA, the State cannot determine that the presumptive limits are the “best available retrofit controls” for Arkansas’s affected sources. With regard to the comment that there is little reason for EPA to have established presumptive emission limits if states cannot rely on them, EPA notes that the purpose of the presumptive limits in the BART Guidelines was to identify controls that the Agency considered to be generally cost-effective across all affected units. Because EPA’s extensive analysis found that these controls are generally cost-effective across all affected units and were anticipated to result in a substantial degree of visibility improvement, EPA concluded that such units should at least meet the presumptive limits. Presumptive limits, thus, rather than being senseless, provide a starting point for a source specific analysis.

We agree that regulations, like statutes, should not be interpreted in a manner that is more stringent than the plain language. However, we do not agree that our application of the presumptive limit is more stringent than what is required under the CAA and the RHR. Rather, our application of the presumptive limit is in keeping with the plain language of the CAA and the RHR. Under the RHR, presumptive limits were promulgated to provide a path for states to follow when analyzing BART for particular EGUs. The BART Rule has presumptive limits that act as a starting point for the establishment of BART emission limits unless the state’s analysis indicates that an emission limit more or less stringent than the presumptive limit is required. Please see our response to other comments for our discussion of the requirements of the CAA visibility program and the RHR.

EPA disagrees that we should accept state BART determinations that rely on the presumptive limits in every case as long as there is no clear and compelling

evidence that presumptive emission limits cannot be BART for a given source. There is no language indicating this in the CAA, the RHR, or the BART Guidelines. On the contrary, EPA’s BART Rule and the BART Guidelines make clear that in developing the presumptive emission limits, EPA made many design and technological assumptions, and that the presumptive limits may not be BART in every case. EPA’s intent was for the presumptive limits to be used in the State’s BART analysis considering the five factors specified in CAA section 169A(g)(2), and considering the level of control that is currently achievable at the time that the BART analysis is being conducted.

*Comment:* The intent of the RHR was to gain reasonable progress in visibility improvements in Class I areas, with the ultimate goal being to achieve background levels of visibility by the year 2064. The BART Guidelines developed presumptive BART emission limits that are cost-effective and capable of meeting reasonable progress. ADEQ followed EPA’s BART Guidelines in establishing presumptive limits as BART for the AEP Flint Creek Boiler No. 1 and Entergy White Bluff Units 1 and 2. In its proposed rule, EPA ignores its own guidance to utilize presumptive limits and proposes to go beyond the cost-effective presumptive limits at Arkansas’s EGUs in the near term and to essentially perform a BACT analysis for these units, as per EPA’s PSD regulations. Going beyond the presumptive limits denies the cost-effectiveness afforded by the presumptive limits and places an unnecessary burden on Arkansas electricity ratepayers. EPA’s approach is beyond what is required to comply with the RHR, as requiring standards more stringent than EPA’s own presumptive limits is unnecessary in order to demonstrate reasonable progress. Implementing the presumptive limits as BART meets the intent of the RHR and EPA should accept ADEQ’s proposed BART requirements for units subject to presumptive limits.

*Response:* With regard to the comment that the BART Guidelines developed presumptive emission limits that are cost-effective and capable of meeting reasonable progress, EPA notes that the RHR states the following concerning SO<sub>2</sub> and NO<sub>x</sub> presumptive limits: “Based on our analysis of emissions from power plants, we believe that applying these highly cost-effective controls at the large power plants covered by the guidelines would result in significant improvements in visibility and help to ensure reasonable

progress toward the national visibility goal.”<sup>19</sup>

The comment appears to suggest that a state’s adoption of the presumptive limits will result in achieving reasonable progress. The EPA notes that the RHR stated that applying the highly cost-effective controls reflected by the presumptive limits would result in significant visibility improvement that would help to ensure reasonable progress, not that it would necessarily ensure reasonable progress.

Furthermore, for a state to achieve reasonable progress during the first implementation period, it must also look at point sources beyond those that are subject to BART as well as at non-point sources and determine, based on consideration of the four statutory factors under 40 CFR 51.308(d)(1)(i), whether it is reasonable to require these sources to install additional pollution controls. Therefore, even if a state satisfies the BART requirements, satisfaction of the reasonable progress requirements cannot be met by complying with BART requirements alone. In addition, the EPA notes that the BART Guidelines make clear that the presumptive limits may not be appropriate for all affected units.<sup>20,21,22</sup>

The EPA is not ignoring its own guidance to utilize presumptive limits, as the BART Rule does not suggest the presumptive limits should be viewed as establishing a safe harbor from more stringent regulation under the BART provisions. The EPA’s proposed rulemaking did not propose particular emission limits more stringent than the presumptive limits for Arkansas EGUs. Instead, the EPA’s proposed rulemaking stated that Arkansas must conduct a proper evaluation of the five statutory factors, as required by 40 CFR 51.308(e)(1)(ii)(A) and section 169A(g) of the CAA, before determining whether the presumptive emission limits are the “best available retrofit controls” for affected units. Therefore, the EPA does not believe that requiring the State to conduct a proper evaluation of the five statutory factors places an unnecessary burden on Arkansas electricity ratepayers.

The EPA disagrees with the comment that EPA is requiring Arkansas to perform a PSD BACT analysis for affected EGUs. The EPA notes the comment is not specific in terms of explaining what aspect of our proposed rulemaking led to the belief that EPA is requiring a PSD BACT analysis for

<sup>19</sup> 70 FR 39131.

<sup>20</sup> 70 FR 39131.

<sup>21</sup> 70 FR 39132.

<sup>22</sup> 71 FR 60619.



affected EGUs. However, the proposed BART Rule did note that the process for a BART analysis is very similar to the BACT review as described in the New Source Review Workshop Manual (Draft, October 1990).<sup>23</sup> The proposed BART Rule also explained that although very similar in process, BART reviews differ in many respects from the BACT review. The proposed BART Rule explained these differences as follows:

“First, because all BART reviews apply to existing sources, the available controls and the impacts of those controls may differ from source to source. Second, the CAA requires you to take slightly different factors into account in determining BART and BACT \* \* \* Because of the differences in terminology, the BACT review process tends to encompass a broader range of factors \* \* \* Finally, for the BART analysis, there is no *minimum level of control* required, while any BACT emission limitation must be at least as stringent as any NSPS that applies to the source.”<sup>24</sup>

Because of the similarities in the two processes, it is understandable that there may be some misunderstanding regarding our proposed rulemaking to mean that EPA is requiring subject to BART sources to conduct a PSD BACT analysis. Our statement that subject to BART sources must consider the “most stringent option (*i.e.* maximum level of control each technology is capable of achieving) as well as a reasonable set of options for analysis,”<sup>25</sup> may have been misinterpreted to mean that we are requiring a PSD BACT analysis. We are not requiring a PSD BACT analysis. As explained in our proposed rulemaking, the BART Guidelines provide that in identifying all options, you must identify the most stringent option (*i.e.* maximum level of control each technology is capable of achieving) as well as a reasonable set of options for analysis.<sup>26</sup> The RHR also provides that in establishing source specific BART emission limits, the State should identify and consider in the BART analysis the maximum level of emission reduction that has been achieved in other recent retrofits at existing sources in the source category.<sup>27</sup> Furthermore, the BART Guidelines state that “[t]echnologies required as BACT or LAER are available for BART purposes.”<sup>28</sup> The guidelines instruct:

“You are expected to identify potentially applicable retrofit control technologies that represent the full range of demonstrated alternatives. Examples of general information sources are to consider include: The EPA’s Clean Air Technology center, which includes the RACT/BACT/LAER Clearinghouse (RBLC) \* \* \*<sup>29</sup> Our rulemaking is consistent with the RHR and the BART Rule, and does not require Arkansas’s subject to BART sources to conduct a PSD BACT analysis.

The EPA disagrees with the comment that EPA’s approach in our proposed rulemaking for the Arkansas RH SIP is beyond what is required to comply with the RHR and that requiring standards more stringent than EPA’s own presumptive limits is unnecessary in order to demonstrate reasonable progress. As already explained elsewhere in our response to other comments, EPA’s rulemaking on the Arkansas RH SIP is not requiring Arkansas affected sources to meet standards more stringent than the presumptive emission limits. Arkansas must conduct a proper evaluation of the five statutory factors, as required by 40 CFR 51.308(e)(1)(ii)(A) and section 169A(g) of the CAA, before determining whether the presumptive emission limits are the “best available retrofit controls” for affected units. Furthermore, 40 CFR 51.308(e)(1)(ii)(A) and section 169A(g) of the CAA require that states consider the five statutory factors when making BART determinations, and the State cannot determine whether or not emission limits more stringent than the presumptive emission limits are necessary to demonstrate reasonable progress when a proper evaluation of the five statutory factors has not been conducted.

*Comment:* Appendix Y is very clear that when it comes to presumptive BART NO<sub>x</sub> emissions limits for qualifying EGUs, Arkansas must require these EGUs to meet the presumptive BART emissions limits in Appendix Y. Not only does Arkansas have broad discretion to apply presumptive NO<sub>x</sub> limits, but Appendix Y actually requires this. Arkansas followed this approach in its RH SIP. In its proposed rule, EPA now claims that the presumptive limits are something completely different than the straightforward directive contained in the Code of Federal Regulations, claiming that they are the starting point in a BART determination and that sources must “at least” meet these emission limits. Using the word “at

least” implies that presumptive limits constitute a minimally acceptable degree of control that would constitute BART. Nothing in the CAA, RHR, or Appendix Y ever states or implies this. EPA also stated in its proposal for the Arkansas RH SIP that “nothing on the record would support the conclusion that the presumptive limits represent ‘best available retrofit controls’ for all EGUs at these large power plants” (76 FR 64201). EPA is attempting to avoid the broad statements it previously made regarding the applicability of the “presumptive BART” NO<sub>x</sub> emissions limits. EPA’s statements in previous rulemakings demonstrate that in almost all cases, the presumptive BART limits should apply, and the only instance when they should not apply is to atypical instances when a source is able to show through a five factor test that it is not able to meet the presumptive emission rates, even if the expected control technology were installed. EPA’s proposal for the Arkansas RH SIP also incorrectly claims that in Appendix Y, EPA simply concluded that it could not reach a generalized conclusion as to the appropriateness of more stringent controls for categories of EGUs (76 FR 64201). EPA’s failure to recognize the proper role of presumptive BART NO<sub>x</sub> emissions limits is arbitrary and capricious because EPA acted in excess of statutory jurisdiction, authority, or limitations (*North Carolina v. EPA*, 531 F.3d 896, 906, DC Circuit 2008).

*Response:* The EPA disagrees that Appendix Y (*i.e.* the BART Guidelines) makes the presumptive emission limits mandatory for all qualifying EGUs. The comment that states have broad discretion to apply presumptive NO<sub>x</sub> limits contradicts the comment that the BART Guidelines require states to adopt the presumptive limits. The BART Guidelines make clear that the presumptive emission limits are rebuttable.<sup>30</sup> Referring to the NO<sub>x</sub> presumptive emission limits, the BART Rule states that the presumptive emission limits may not be appropriate for all sources, as they are “presumptions only.”<sup>31</sup> The presumptive emission limits apply to power plants with a total generating capacity of 750 MW or greater insofar as these sources are required to adopt emission limits at least as stringent as the presumptive limits, unless after considering the five statutory factors, the State determines that the presumptive emission limits are not appropriate. Moreover, the CAA, the RHR, and the BART Guidelines do not

<sup>23</sup> 69 FR 25218.

<sup>24</sup> 69 FR 25218.

<sup>25</sup> See our proposed rulemaking for the Arkansas RH SIP (76 FR 64186).

<sup>26</sup> See Appendix Y to Part 51.

<sup>27</sup> 64 FR 35740.

<sup>28</sup> 70 FR 39,164.

<sup>29</sup> 70 FR 39,164.

<sup>30</sup> 71 FR 60619.

<sup>31</sup> 70 FR 39134.

exempt the State from a five factor BART analysis or even provide the State with discretion to determine whether or not to conduct an analysis of the five statutory factors when the State has adopted the presumptive emission limits.

We are not claiming that the presumptive emission limits are anything else than what is contained in the RHR and the BART Guidelines. With regard to the comment that nothing in the CAA, RHR, or Appendix Y ever states or implies that the presumptive limits are the starting point in a BART determination, EPA notes that there is no mention of the presumptive emission limits in the CAA. Further, in response to comments on the proposed BART Guidelines that the presumptive SO<sub>2</sub> EGU limits should be more stringent, EPA justified its decision not to establish more stringent SO<sub>2</sub> presumptive limits, by explaining in the preamble to the final BART Rule that “[i]f, upon examination of an individual EGU, a State determines that a different emission limit is appropriate based upon its analysis of the five factors, then the State may apply a more or less stringent limit.”<sup>32</sup> Similar statements are made elsewhere in the BART Rule. Clearly, the RHR and the BART Rule do not suggest the presumptive limits should be viewed as establishing a safe harbor from more stringent regulation under the BART provisions. EPA stands by the statement made in its proposed rulemaking on the Arkansas RH SIP that “nothing on the record would support the conclusion that the presumptive limits represent ‘best available retrofit controls’ for all EGUs at these power plants.”<sup>33</sup> EPA does not find this statement to be inconsistent with the RHR and BART Guidelines. As already explained above, EPA is clear in the BART Rule and the BART Guidelines that the presumptive limits may not be appropriate for every EGU.<sup>34</sup>

EPA disagrees with the comment that the only instance when the presumptive emission limits should not apply is to atypical instances when a source is able to show through a five factor test that it is not able to meet the presumptive emission rates. The comment suggests that for power plants with a total generating power capacity greater than 750 MW, the RHR and the BART Rule provide that an evaluation of the five statutory factors for these units is merely a vehicle for justifying adoption of a BART emission limit less stringent

than the presumptive limit. This is clearly not the intent of the RH regulations and section 169A(g) of the CAA.<sup>35</sup> As explained above, in response to comments on the proposed BART Guidelines that the presumptive SO<sub>2</sub> EGU limits should be more stringent, EPA justified its decision not to establish more stringent presumptive emission limits by explaining that after considering the five statutory factors, States may find that a more or less stringent emission limit is BART.<sup>36</sup> Similar statements are made elsewhere in the BART Rule. The BART Rule states the following:

“We recognize that while some scrubber units currently achieve reductions greater than 95 percent, not all units can do so. The individual units that currently achieve greater than 95 percent control efficiencies do not necessarily represent the wide range of unit types across the universe of BART-eligible sources \* \* \* In addition, we note that the presumption does not limit the States’ ability to consider whether a different level of control is appropriate in a particular case.”<sup>37</sup>

Further, in the BART Rule, EPA justified its decision not to establish presumptive NO<sub>x</sub> limits based on the use of selective catalytic reduction (SCR) for units other than cyclone units, stating the following:

“For other units, we are not establishing presumptive limits based on the installation of SCR. Although States may in specific cases find that the use of SCR is appropriate, we have not determined that SCR is generally cost-effective for BART across unit types.”<sup>38</sup>

Therefore, EPA stands by its statement in the proposed rulemaking on the Arkansas RH SIP that in the BART Guidelines, EPA simply concluded that it could not reach a generalized conclusion as to the appropriateness of more stringent controls for categories of EGUs.

The EPA’s application of presumptive BART NO<sub>x</sub> emissions limits to Arkansas’s RH BART determinations is not arbitrary and capricious, because EPA is acting in accordance with the CAA and the RHR. The EPA’s disapproval of Arkansas’s BART determinations that adopted the presumptive BART SO<sub>2</sub> and NO<sub>x</sub> emission limits without conducting a proper five factor BART analysis is a proper exercise of EPA’s authority under the Act. Congress crafted the CAA

to provide for states to take the lead in developing implementation plans consistent with the laws and regulations, but balanced that decision by requiring EPA to review the plans to determine whether a SIP meets the requirements of the CAA. The EPA’s review of SIPs is not limited to support and cooperation in implementation of a state SIP nor is it to simply approve state decisions. When reviewing state SIPs, EPA must consider not only whether the state considered the appropriate factors in making decisions but acted reasonably in doing so. In undertaking such a review, EPA does not usurp the state’s authority but ensures that such authority is reasonably exercised. EPA has reviewed Arkansas’s BART determinations for NO<sub>x</sub> that adopted the presumptive limits without conducting a proper five factor BART analysis, and we find that Arkansas did not follow the requirements of the RHR; that is the basis for our disapproval of those BART determinations. For a more detailed explanation of state and EPA authority in the development and approval of RH SIPs as well as of how EPA’s action does not encroach on state authority and is consistent with the CAA and the RHR, please see our response to comments under section III.F, titled “*Comments on Legal Issues*,” of this final rulemaking.

*Comment:* The EPA’s treatment of presumptive limits in its proposed partial disapproval of AR RH SIP is inconsistent with EPA’s BART Guidelines. EPA departed from the BART Guidelines and made the use of presumptive limits meaningless when it disapproved BART determinations for Entergy’s Lake Catherine Unit 4 and White Bluff Units 1 and 2 that adopt the presumptive limits. When EPA departs from the BART Guidelines, it is going beyond the scope of the CAA’s visibility protection program. For certain categories of EGUs, EPA’s BART Guidelines provide presumptive limits that the states rely upon in making BART determinations. The presumptive limit framework outlined in the BART Guidelines is intended to function like presumptive evidence in litigation where the evidence is received and treated as sufficient until it is discredited. Presumptive limits should represent BART until and unless they are rebutted. This is not how EPA approached presumptive limits in reviewing the Arkansas RH SIP. The BART Guidelines provide that if a state wishes to do a case-by-case BART then there are presumptive levels of controls for SO<sub>2</sub> and NO<sub>x</sub> that can be adopted for certain EGUs that the state finds are

<sup>35</sup> See 40 CFR 51.308(e)(1)(ii)(A) and 42 U.S.C. 7491(g)(2).

<sup>36</sup> 70 FR 39132.

<sup>37</sup> 70 FR 39132.

<sup>38</sup> 70 FR 39136.

<sup>32</sup> 70 FR 39132.

<sup>33</sup> 76 FR 64201.

<sup>34</sup> 70 FR 39131, 39132, and 39134.

subject to BART. This is what Arkansas did and should be approved by EPA.

*Response:* The EPA disagrees that the EPA's treatment of the presumptive limits in its proposed rulemaking on the Arkansas RH SIP is inconsistent with EPA's BART Guidelines and made use of the presumptive limits meaningless. EPA notes that Entergy Lake Catherine Unit 4 is currently permitted to burn natural gas and fuel oil. EPA's BART Guidelines do not establish presumptive emission limits for units that burn natural gas and/or fuel oil, therefore the ADEQ did not adopt any presumptive limits for Entergy Lake Catherine Unit 4. With regard to Entergy White Bluff Units 1 and 2, as stated in our proposed rulemaking on the Arkansas RH SIP, the purpose of the presumptive limits in the BART Guidelines was to identify controls that the Agency considered to be generally cost-effective across all affected units. Because EPA's extensive analysis found that these controls are generally cost-effective across all affected units and were anticipated to result in a substantial degree of visibility improvement, EPA concluded that such units should at least meet the presumptive limits, unless a more or less stringent limit is found to be BART after the state considers the five statutory factors. EPA's intent was for these generally cost-effective controls to be used in the State's BART analysis considering the five factors specified in CAA section 169A(g)(2), and considering the level of control that is currently achievable at the time that the BART analysis is being conducted. Further, 40 CFR 51.308(e)(1)(ii)(A) requires that States identify the level of control representing BART after considering the five statutory factors set out in CAA section 169A(g).<sup>39</sup>

We disagree that the presumptive limits should represent BART until and unless they are rebutted. We reiterate that nothing on the record states that the presumptive limits represent the "best available retrofit controls" for all EGUs at these large power plants. On the contrary, EPA's BART Rule and the BART Guidelines make clear that in developing the presumptive emission limits, EPA made many design and technological assumptions, and that the presumptive limits may not be BART in every case.

While the BART Guidelines provide that there are presumptive levels of controls for SO<sub>2</sub> and NO<sub>x</sub> that can be adopted for certain EGUs that the state finds are subject to BART, this is true only after the state has considered the five statutory factors to determine

whether a more or less stringent emission limit is BART. In the BART Guidelines, EPA noted that the presumptive limits represented current control capabilities at the time the BART Rule was promulgated, and that we expected that scrubber technology would continue to improve and control costs continue to decline.<sup>40</sup> Therefore, in their evaluation of the five statutory factors, states must consider the level of control that is currently achievable at the time the BART analysis is being conducted.

The presumptive limit framework could be compared to the presumptive evidence in litigation. However, the comment mischaracterizes the role of presumptive evidence in litigation as simply to be received and treated as sufficient until it is discredited. Presumptive evidence is circumstantial evidence that creates belief by showing surrounding circumstances which logically lead to a conclusion of fact. At trial, many forms of evidence are submitted including circumstantial evidence. All forms of evidence that are admitted in court are reviewed and considered before a decision is made. While presumptive evidence may meet the sufficiency requirement for admission in court, this does not mean that it is looked at alone without review of the other admitted evidence. Presumptive evidence does not trump other forms of evidence. It is just a type of evidence that is reviewed in reaching a court decision. Like presumptive evidence, presumptive limits are one line of analysis for reaching a decision. Like presumptive evidence in the court room, presumptive limits are not the only limit that is looked at when performing the five factor BART analysis. Presumptive limits do not preempt states from conducting the BART analysis nor do they preclude the evaluation of other emission limits to help the state reach its BART determination.

*Comment:* The EPA should approve the Arkansas RH SIP in its entirety and specifically with regards to Arkansas adoption of presumptive limits in its BART determinations. Modeling conducted by Arkansas and CENRAP demonstrates that Arkansas's adoption of the presumptive limits is satisfactory to make reasonable progress toward the national goal by 2018 and ultimately to achieve the national goal prior to 2064.

*Response:* Presumptive emission limits apply to power plants with a total generating capacity of 750 MW or greater insofar as these sources are required to adopt emission limits at

least as stringent as the presumptive limits, unless after considering the five statutory factors, the State determines that the presumptive emission limits are not appropriate. The RHR and the BART Guidelines make clear that the presumptive limits will not necessarily be the appropriate level of control for all EGUs. Therefore, EPA is not required to approve a state's submitted presumptive emission limits in every instance for every EGU as BART. For the reasons presented in our proposed rulemaking, and as further explained in our response to comments, EPA stands by its partial approval and partial disapproval of the BART determinations in the Arkansas RH SIP.

States are required to satisfy all BART requirements in this first implementation period regardless of whether modeling demonstrates that the state will make reasonable progress by 2018 and meet the national goal by 2064. As described in our proposed rulemaking on the Arkansas RH SIP, we find that in adopting the SO<sub>2</sub> and NO<sub>x</sub> presumptive limits for the AEP Flint Creek Boiler No. 1 and Entergy White Bluff Units 1 and 2 without conducting a proper evaluation of the five statutory factors, as required by 40 CFR 51.308(e)(1)(ii)(A) and section 169A(g) of the CAA, Arkansas did not satisfy all the BART requirements for these subject to BART sources. Furthermore, EPA notes that the CENRAP modeled the projected visibility conditions anticipated at each Class I area in 2018. The CENRAP modeling is based on emissions reductions expected to result from Federal, state, and local control programs that are either currently in effect or with mandated future-year emission reduction schedules that predate 2018. The CENRAP modeling itself did not show that already mandated controls are expected to attain natural visibility conditions by 2064. Rather, the rate of visibility improvement anticipated by the CENRAP modeling in 2018, if sustained, will result in a return to natural visibility prior to 2064. The comment that Arkansas is expected to ultimately achieve the national goal prior to 2064 assumes that the same level of reductions of visibility-impairing pollutants that is expected to occur during the first implementation period ending in 2018 will increasingly occur during each implementation period until the final implementation period ending in 2064. However, there is no guarantee that this will occur. The Arkansas RH SIP addresses implementation of the RHR only up to the end of the first implementation

<sup>39</sup> 70 FR 39158.

<sup>40</sup> 70 FR 39144.

period ending in 2018. Therefore, EPA disagrees that we should approve Arkansas's adoption of the presumptive limits on the basis that modeling demonstrates that the State's adoption of the presumptive limits is satisfactory to make reasonable progress toward the national goal by 2018 and ultimately to achieve the national goal prior to 2064.

*Comment:* Under the BART Guidelines, presumptive limits were established as a default requirement where the presumption would apply unless the state has persuasive evidence that an alternative determination is justified. According to EPA, the presumptive limits reflect highly cost-effective controls that are extremely likely to be appropriate for all power plants subject to BART but may be deviated from if a state determines that a different emission limit is appropriate based upon its analysis of the five factors. 76 FR 39131–32.

*Response:* As reflected in our previous responses to similar comments, the proper interpretation of the BART Rule and BART Guidelines is that presumptive limits are the “rebuttable” starting point rather than the “default requirement” in making BART determinations. Referring to the NO<sub>x</sub> presumptive emission limits, the BART Rule states that the presumptive emission limits may not be appropriate for all sources, as they are “presumptions only.”<sup>41</sup> EPA notes that presumptive emission limits apply to power plants with a total generating capacity of 750 MW or greater insofar as these sources are required to adopt emission limits at least as stringent as the presumptive limits, unless after considering the five statutory factors, the State determines that the presumptive emission limits are not appropriate for BART.

EPA agrees that the BART Rule and the BART Guidelines provide that presumptive limits reflect controls that the Agency considered to be generally cost-effective across all affected units. Because EPA's extensive analysis found that these controls are generally cost-effective across all affected units and were anticipated to result in a substantial degree of visibility improvement, they may likely be appropriate for all Arkansas power plants subject to BART, but Arkansas must establish different BART emission limits if an evaluation of the five statutory factors reveals that such emission limit is appropriate. However, as discussed in our proposed rulemaking, Arkansas did not conduct a proper evaluation of the five statutory

factors for its sources. Therefore, it is not possible to know whether the presumptive emission limits or an alternative emission limit is BART for the affected sources.

*Comment:* The approach in EPA's proposed rule to presumptive limits as a starting point is inconsistent with the BART Guidelines. The Guidelines do not state that presumptive limits are a starting point for a BART determination, but instead establish a presumption in favor of the presumptive limits. Presumptive limits serve no purpose if their adoption does not presume compliance with the applicable regulations. The EPA's inconsistent application of its own guidelines fosters regulatory uncertainty among the EGU industry.

*Response:* The EPA disagrees that our approach to presumptive limits as a starting point in EPA's proposed rule is inconsistent with the BART Guidelines and that the presumptive limits serve no purpose if their adoption does not presume compliance with the regulations. As stated in our proposed rulemaking on the Arkansas RH SIP, the purpose of the presumptive limits in the BART Guidelines was to identify controls that the Agency considered to be generally cost-effective across all affected units. Because EPA's extensive analysis found that these controls are generally cost-effective across all affected units and were anticipated to result in a substantial degree of visibility improvement, EPA concluded that such units should at least meet the presumptive limits. EPA's intent was for these generally cost-effective controls to be used in the State's BART analysis considering the five factors specified in CAA section 169A(g)(2), and considering the level of control that is currently achievable at the time that the BART analysis is being conducted. The BART Rule makes clear that the presumptive emission limits in the BART Guidelines are rebuttable.<sup>42</sup> Referring to the NO<sub>x</sub> presumptive emission limits, the BART Rule states that the presumptive emission limits may not be appropriate for all sources, as they are “presumptions only.”<sup>43</sup> Further, in response to comments on the proposed BART Guidelines that the presumptive SO<sub>2</sub> EGU limits should be more stringent, EPA explained in the preamble to the final BART Rule that “[i]f, upon examination of an individual EGU, a State determines that a different emission limit is appropriate based upon its analysis of the five factors, then the State may apply a more or less

stringent limit.”<sup>44</sup> Similar statements are made elsewhere in the BART Rule. It is important that, in analyzing the technology, states take into account the most stringent emission control level that the technology is capable of achieving. States should be sure to consider the level of control that is currently achievable at the time that the BART analysis is being conducted. Thus, the BART Guidelines require that potential emission limits that are more stringent than the presumptive limits must be examined as part of the BART determination.

*Comment:* The EPA's proposed disapproval of Arkansas's adoption of presumptive limits for some of its BART determinations is inconsistent with EPA's acceptance of presumptive limits in other states' BART determinations such as Kansas, North Dakota, and Oklahoma. The EPA has not identified a rationale or reason for this inconsistency. The lack of consistency in its analyses for states' RH SIPs is a cause of concern. Applying different standards and/or rendering different decisions on similar SIPs when there is no basis for differentiation is by definition arbitrary and capricious, and therefore invalid. Instead of arbitrarily applying different standards, EPA should use its own guidelines to implement the RH program on a consistent, cost-effective basis. For Kansas, the EPA approved the Kansas RH SIP including the adoption of SO<sub>2</sub> and NO<sub>x</sub> presumptive limits for non-oil or gas-fired units similar in design and capacity to Arkansas's units. The Kansas RH SIP also included language, which EPA approved, that presumptive limits are cost effective in most cases, and if a facility proposed controls at or beyond the presumptive limits, it need not take into account the remaining statutory factors as BART will be met. In addition, the SIP also stated that allowing facilities to use presumptive limits to meet BART is within its authority under the RH program. This contradicts the EPA's proposed disapproval of the Arkansas RH SIP where EPA states that presumptive limits are the starting point in a BART determination for these units. For North Dakota, EPA proposed to approve the BART determinations that SO<sub>2</sub> and NO<sub>x</sub> presumptive limits is BART for facilities that are similar in use of fuel and capacity to Arkansas's units. For Oklahoma, the EPA has proposed to approve those portions of Oklahoma's SIP which adopt the presumptive emissions limits for NO<sub>x</sub> set forth in the Guidelines as BART for the subject

<sup>41</sup> 70 FR 39134.

<sup>42</sup> 71 FR 60619.

<sup>43</sup> 70 FR 39134.

<sup>44</sup> 70 FR 39132.

units. This contradicts EPA's approach for this proposed rule since EPA is proposing to disapprove the NO<sub>x</sub> BART presumptive limit for Arkansas's units even though the units are similar in design and capacity to the subject units in Oklahoma and Arkansas considered the same BART factors as Oklahoma. EPA's simultaneous proposed approval of other states' SIPs which use presumptive limits in a manner similar to Arkansas and proposed disapproval of those portions of Arkansas's SIP demonstrates that EPA is acting inconsistently and has exceeded its limited authority in implementation of the visibility protection program.

*Response:* The EPA disagrees that there is an inconsistency between our approach to presumptive limits in our proposed rulemaking on the Arkansas RH SIP and that in our proposed rulemaking on the North Dakota RH SIP and final rulemakings on the Kansas and Oklahoma RH SIPs. Our action on the Arkansas RH SIP is not arbitrary and capricious.

In the Arkansas RH SIP, the State adopted the NO<sub>x</sub> and SO<sub>2</sub> presumptive emission limits for BART without conducting any form of BART analysis for AEP Flint Creek Boiler No. 1. For Entergy White Bluff Units 1 and 2, the State conducted a five factor BART analysis for SO<sub>2</sub> and NO<sub>x</sub>, which we find does not appropriately consider all five statutory factors at 40 CFR 51.308(e)(1)(ii)(B); as such, EPA proposed to disapprove the State's determination that the presumptive SO<sub>2</sub> and NO<sub>x</sub> emission limits are BART for these two units.<sup>45</sup> As explained in more detail in our proposed rulemaking, the factors that EPA is finding were not appropriately considered in the NO<sub>x</sub> and SO<sub>2</sub> BART analyses for White Bluff Units 1 and 2 are the available control technology and the cost and visibility impact of controls beyond the presumptive limits. For NO<sub>x</sub> BART, Arkansas evaluated only combustion controls to achieve the NO<sub>x</sub> presumptive emission limit. For SO<sub>2</sub> BART, Arkansas evaluated both combustion and post-combustion controls, but evaluated the cost and visibility impact of operating post-combustion controls (*i.e.* wet and dry scrubbers) to achieve the SO<sub>2</sub> presumptive emission limit only. As explained in our proposed rulemaking, Arkansas did not evaluate NO<sub>x</sub> and SO<sub>2</sub> controls to achieve emission limits beyond the presumptive limits, and we believe it is very likely that a proper five factor analysis would demonstrate that controls that achieve NO<sub>x</sub> and SO<sub>2</sub>

emission limits more stringent than presumptive limits are cost-effective for White Bluff Units 1 and 2. Therefore, we are disapproving the SO<sub>2</sub> and NO<sub>x</sub> presumptive emission limits for Flint Creek Boiler No. 1 and White Bluff Units 1 and 2 not because the State adopted the presumptive emission limits, but rather because the State did not conduct a proper evaluation of the five statutory factors when making these BART determinations.

In contrast, in our evaluation of the Oklahoma RH SIP, EPA found that Oklahoma conducted proper BART analyses before determining that NO<sub>x</sub> presumptive limits are BART for some sources. In our final rulemaking action on the Oklahoma RH SIP, EPA approved the State's NO<sub>x</sub> BART determinations for Units 1 and 2 at OG&E Sooner; Units 4 and 5 at OG&E Muskogee; and Units 3 and 4 at AEP/PSO Northeastern. For each of these sources, the State made its NO<sub>x</sub> BART determination based on an evaluation of a number of controls, including post-combustion controls operated to achieve an emission limit beyond the NO<sub>x</sub> presumptive limit. Based on an evaluation of the five statutory factors, Oklahoma determined that the NO<sub>x</sub> presumptive limit is BART for these sources. In our action on the Oklahoma RH SIP, we approved the NO<sub>x</sub> presumptive limits as BART for these sources because Oklahoma's NO<sub>x</sub> BART analyses were appropriate and met the requirements of the RHR and CAA.

In our proposed approval of the Kansas RH SIP, we noted that each of Kansas's subject to BART sources are EGUs greater than 200 MW in capacity and located at power plants with a total capacity greater than 750 MW, which are units for which EPA established presumptive BART emission limits.<sup>46</sup> Consistent with our proposed rulemaking on the Arkansas RH SIP, in our proposed rulemaking for Kansas, we stated that such units must as a general matter at least meet the presumptive emission limits as described in the BART Guidelines, unless an evaluation of the five statutory factors demonstrated that an alternative level of control was appropriate.<sup>47</sup> The State of Kansas performed an evaluation of the five statutory factors for each source subject to BART, evaluating the costs and visibility impact of both combustion and post-combustion controls.<sup>48</sup> In fact, the Kansas BART evaluation for some units resulted in the adoption of BART emission limits more

stringent than the NO<sub>x</sub> and SO<sub>2</sub> presumptive limits.<sup>49</sup> Based on an evaluation of the five factors, the State of Kansas determined, and EPA proposed to approve the NO<sub>x</sub> and SO<sub>2</sub> presumptive limits for some units. During the public comment period for our proposed approval of the Kansas RH SIP, we received comments stating that the Kansas RH SIP was incomplete and insufficient because the State did not evaluate the cost and visibility improvement resulting from the most stringent emission limit capable of being achieved by the various SO<sub>2</sub> and NO<sub>x</sub> controls considered for these units. Subsequently, the State provided EPA information on the cost and visibility impact of operating the various NO<sub>x</sub> and SO<sub>2</sub> control technologies considered by the State at an emission rate more stringent than the presumptive limits. The information provided by the State demonstrated that operation of these controls to achieve an emission limit more stringent than the presumptive limit would result in high costs and very low visibility improvement, and thereby not be cost-effective. Based upon its evaluation of the State's five factor supplemented analysis, EPA agreed with Kansas that it is reasonable to determine that the cost of further control beyond presumptive limits is not warranted and finalized its proposed approval of the Kansas RH SIP without changes.<sup>50</sup> In particular, for the Westar Jeffrey Units 1 and 2, EPA agreed with the State of Kansas that given the very low visibility improvement modeled for the additional SO<sub>2</sub> control (*i.e.* operating a scrubber at a control efficiency that would achieve an emission rate of 0.05 lb/MMBtu instead of the presumptive emission rate of 0.15 lb/MMBtu), it is not reasonable to establish an SO<sub>2</sub> emission limit more stringent than the presumptive limit. Arkansas has not provided EPA with information demonstrating that operation of SO<sub>2</sub> and NO<sub>x</sub> controls to achieve an emission limit more stringent than the presumptive limits is not cost-effective for Flint Creek Boiler No. 1 and White Bluff Units 1 and 2. Since controls capable of achieving a more stringent emission limit than the NO<sub>x</sub> and SO<sub>2</sub> presumptive limits have been found to be technically feasible and cost-effective at similar sources, the State must evaluate these controls in its BART analysis. Therefore, EPA's final approval of the NO<sub>x</sub> and SO<sub>2</sub> presumptive limits for some EGUs in Kansas is not inconsistent with our proposed disapproval of the NO<sub>x</sub> and

<sup>46</sup> 76 FR 52616.

<sup>47</sup> 76 FR 52616.

<sup>48</sup> 76 FR 52617.

<sup>49</sup> 76 FR 80754.

<sup>50</sup> 76 FR 80754.

<sup>45</sup> 76 FR 64206.

SO<sub>2</sub> presumptive limits for White Bluff Units 1 and 2 and Flint Creek Boiler No. 1. With regard to the comment that the Kansas RH SIP included language that that if a subject facility proposes controls at or beyond the presumptive limits then BART will be met and that allowing facilities to use presumptive limits to meet BART is within the State's authority under the RH program, EPA notes that although the Kansas RH SIP did include such language, EPA did not approve or propose to approve the BART determinations by Kansas based on such reasoning. EPA notes that Kansas supplemented its BART evaluation by providing additional information on the costs and visibility impacts associated with various NO<sub>x</sub> and SO<sub>2</sub> control technologies. This additional information constituted an important part of the basis for EPA's approval of the Kansas RH SIP. As a general matter, in evaluating a SIP submittal, EPA considers the state's rationale for its determinations but reaches a decision as to whether a SIP meets the relevant statutory and regulatory requirements based on consideration of other factors as well. EPA's approval of a SIP does not mean that EPA has determined that every statement or analysis provided by the state was appropriate or reasonable or that EPA agrees with the state's interpretation of the relevant legal requirements. Furthermore, the preamble to our proposed rulemaking on the Kansas RH SIP states that as presumptive units, each of Kansas' five subject to BART units "must as a general matter at least meet the presumptive emission limits as described in the BART Guidelines."<sup>51</sup> This is consistent with statements made in the preamble to our proposed rulemaking on the Arkansas RH SIP. EPA believes that our approach to presumptive limits in our final action on the Kansas RH SIP is consistent with that in our action on the Arkansas RH SIP.

While the SO<sub>2</sub> controls evaluated by North Dakota for the Great River Energy Coal Creek Station Units 1 and 2 are not expected to achieve an emission limit more stringent than the SO<sub>2</sub> presumptive emission limit, EPA disagrees that our approach to presumptive limits in our proposed action on North Dakota's BART determinations for the Coal Creek Station Units 1 and 2 is inconsistent with that in our proposed action on Arkansas's BART determinations for Flint Creek Boiler 1 and White Bluff Units 1 and 2. First of all, the SO<sub>2</sub>

presumptive limits do not apply to North Dakota's Coal Creek Station Units 1 and 2, as the presumptive limits do not apply to coal-fired units with existing SO<sub>2</sub> post-combustion controls.<sup>52</sup> The Coal Creek Station Units 1 and 2 have existing wet scrubbers, and as such, the cost effectiveness (on a dollar/tons reduced basis) of additional controls and/or upgrades to the existing scrubbers may not be as cost-effective as the installation and operation of a new scrubber would be at a unit with no existing post-combustion controls (as is the case with Arkansas's Flint Creek Boiler No. 1 and White Bluff Units 1 and 2). In addition, we note that the Coal Creek Station Units 1 and 2 burn pulverized lignite coal, while Flint Creek Boiler No. 1 burns low sulfur western coal (*i.e.* sub-bituminous coal) and White Bluff Units 1 and 2 burn sub-bituminous and bituminous coal. Lignite coal generally has higher sulfur content than sub-bituminous and bituminous coal, and therefore, its combustion produces a greater amount of SO<sub>2</sub> emissions. As such, the operation of a given control technology, in this case a wet scrubber, at a lignite firing unit (such as North Dakota's Coal Creek Station Units 1 and 2) may not necessarily achieve an emission limit as stringent as that capable of being achieved at a unit burning sub-bituminous and/or bituminous coal (such as Arkansas's Flint Creek Boiler No. 1 and White Bluff Units 1 and 2). In light of the above, we believe that our approach to presumptive limits in our proposed action on the North Dakota RH SIP is not inconsistent with that in our proposed action on the Arkansas RH SIP.

As articulated in our proposed rulemaking on the North Dakota RH SIP, the Great River Energy Stanton Unit 1 is located at a 188 MW power plant. Therefore, presumptive NO<sub>x</sub> and SO<sub>2</sub> emission limits do not apply to Stanton Unit 1. As shown in Tables 7 and 8 of our proposed rulemaking on the North Dakota RH SIP, in its five factor analyses for SO<sub>2</sub> for this unit (for both the lignite and the Powder River Basin coal firing scenarios), North Dakota considered a number of post-combustion control options, several of which were expected to achieve an emission limit more stringent than the SO<sub>2</sub> presumptive limit, including one of which would

<sup>52</sup> The BART Guidelines provide that States must require 750 MW power plants to meet specific control levels for SO<sub>2</sub> of either 95% control or 0.15 lb/MMBtu, for each EGU greater than 200 MW that is currently uncontrolled unless you determine that an alternative control level is justified based on a careful consideration of the statutory factors (Appendix Y to Part 51, section IV.E.4.).

achieve 95% control efficiency.<sup>53</sup> Based on its consideration of the five statutory factors, North Dakota determined that an SO<sub>2</sub> emission limit of 0.24 lb/MMBtu for lignite burning and an emission limit of 0.16 lb/MMBtu for Powder River Basin coal burning is BART for SO<sub>2</sub>. For NO<sub>x</sub> for Stanton Unit 1, North Dakota evaluated both combustion and post-combustion controls for both the lignite and Powder River Basin Coal burning scenarios. In its evaluation of controls, North Dakota considered the operation of selective non-catalytic reduction (SNCR) to achieve a control efficiency of 90% for lignite burning and 88% for Powder River Basin coal burning, which corresponds to an emission limit beyond the NO<sub>x</sub> presumptive limit. Based on its consideration of the five statutory factors, North Dakota determined that a NO<sub>x</sub> emission limit of 0.29 lb/MMBtu for lignite burning and 0.23 lb/MMBtu for Powder River Basin coal burning is BART for NO<sub>x</sub>. In our proposal, we did not identify any flaws with North Dakota's BART analyses for NO<sub>x</sub> and SO<sub>2</sub> for this unit, and proposed to approve North Dakota's BART determinations. EPA's approach to presumptive limits in our proposed action on North Dakota's BART determinations for the Great River Energy Stanton Unit 1 is not inconsistent with that in our proposed action on the Arkansas BART determinations for White Bluff Unit 1 and 2 and Flint Creek Boiler No. 1 because North Dakota considered controls beyond the NO<sub>x</sub> and SO<sub>2</sub> presumptive emission limits. This was not done by Arkansas in the NO<sub>x</sub> and SO<sub>2</sub> BART analyses for White Bluff Units 1 and 2 and Flint Creek Boiler No. 1. Furthermore, presumptive NO<sub>x</sub> and SO<sub>2</sub> emission limits do not apply to Stanton Unit 1.

North Dakota's Minnkota Power Cooperative Milton R. Young Station Unit 1 has no existing SO<sub>2</sub> post-combustion controls, while Unit 2 has an existing wet scrubber for control of SO<sub>2</sub>. As such, the SO<sub>2</sub> presumptive limits don't apply to Unit 2. As shown in Table 12 of our proposed rulemaking on the North Dakota RH SIP, for Milton R. Young Station Unit 1, North Dakota considered post combustion controls that were expected to achieve 95% control efficiency, which corresponds to an emission limit more stringent than the SO<sub>2</sub> presumptive limit.<sup>54</sup> As shown in Table 13 of our proposed rulemaking on the North Dakota RH SIP, for Milton R. Young Station Unit 2 North Dakota considered upgrades to the existing wet scrubber that were expected to achieve

<sup>53</sup> 76 FR 58570, at 58586 and 58587.

<sup>54</sup> 76 FR 58570, at 58589.

<sup>51</sup> 76 FR 52604, at 52616.

95% control efficiency, which corresponds to an emission limit beyond the SO<sub>2</sub> presumptive limit.<sup>55</sup> In our proposed rulemaking on the North Dakota RH SIP, we did not identify any flaws with North Dakota's SO<sub>2</sub> BART analysis for these units. In light of the fact that SO<sub>2</sub> presumptive limits don't apply to Milton R. Young Station Unit 2 and that North Dakota evaluated controls to achieve 95% control efficiency for both Units 1 and 2, which corresponds to an emission limit more stringent than the SO<sub>2</sub> presumptive limit, we believe that EPA's approach to presumptive limits in our proposed action on North Dakota's BART determinations for Minnkota Power Cooperative Milton R. Young Station Unit 1 and 2 is not in conflict with that in our proposed action on Arkansas's BART determinations for White Bluff Units 1 and 2 and Flint Creek Boiler No. 1.

While the SO<sub>2</sub> controls evaluated by North Dakota for the Basin Electric Power Cooperative Leland Olds Station Units 1 and 2, which are located at a 656 MW coal fired power plant, are not expected to achieve an emission limit more stringent than the SO<sub>2</sub> presumptive emission limit, EPA disagrees that our approach to presumptive limits in our proposed action on North Dakota's BART determinations for the Leland Olds Station Unit 1 and 2 is inconsistent with that in our proposed action on Arkansas's BART determinations for Flint Creek Boiler No. 1 and White Bluff Units 1 and 2. As with the Great River Energy Stanton Unit 1, the SO<sub>2</sub> and NO<sub>x</sub> presumptive limits do not apply to North Dakota's Leland Olds Station Units 1 and 2, as the presumptive limits do not apply to coal fired power plants with a total generating capacity less than 750 MW.<sup>56</sup> As shown in Table 17 of our proposed rulemaking on the North Dakota RH SIP, for Leland Olds Station Unit 1 North Dakota considered both NO<sub>x</sub> combustion and post-combustion controls capable of achieving 80% control efficiency, which corresponds to an emission limit much more stringent than the NO<sub>x</sub> presumptive limit.<sup>57</sup> In our proposed rulemaking on the North Dakota RH SIP, we did not identify any flaws with

North Dakota's BART analysis for NO<sub>x</sub> for Unit 1 and proposed to approve North Dakota's determination that BART for NO<sub>x</sub> is 0.19 lb/MMBtu for Leland Olds Station Unit 1. EPA's approach to presumptive limits in our proposed action on North Dakota's BART determination for NO<sub>x</sub> for the Leland Olds Station Unit 1 is not inconsistent with that in our proposed action on Arkansas's BART determinations for Flint Creek Boiler No. 1 and White Bluff Units 1 and 2 because in its evaluation of controls for NO<sub>x</sub> for Unit 1 (for which we did not propose to find any flaws), North Dakota considered controls beyond the NO<sub>x</sub> presumptive emission limits. This was not done by Arkansas in the NO<sub>x</sub> and SO<sub>2</sub> BART analyses for White Bluff Units 1 and 2 and Flint Creek Boiler No. 1. Furthermore, the NO<sub>x</sub> and SO<sub>2</sub> presumptive limits do not apply at the Leland Olds Station Units 1 and 2.

In summary, EPA disagrees that there is an inconsistency between our approach to presumptive limits in our proposed rulemaking on the Arkansas RH SIP and that in our proposed rulemaking on the North Dakota RH SIP and final rulemakings on the Kansas and Oklahoma RH SIPs.

*Comment:* The process used by the State of Arkansas in adopting the presumptive emission limits set forth in EPA's BART Guidelines as BART for Entergy White Bluff was improper. The record reflects that neither ADEQ nor the APCEC conducted its analysis of the statutory factors required to establish BART, but merely adopted EPA's presumptive limits as proposed by the owners and operators of the Entergy White Bluff Units 1 and 2. The record does not reflect that any analysis was done by ADEQ to determine if the estimated operating cost and the projected cost per deciview (dv) improvement for wet scrubbing control technology for the White Bluff plant were realistic, whether those costs were consistent with the cost assumptions underlying EPA's development of presumptive limits in the BART Guidelines, or whether other options were available to address RH concerns or whether existing control technology at White Bluff was sufficient. Moreover, after Arkansas's RH SIP was adopted by the APCEC, Entergy submitted a revised 2008 BART analysis to ADEQ that reflected a more than 300% increase in the costs of compliance for the White Bluff facility. After this, Entergy filed with the Arkansas Public Service Commission a claim that the RHR compliance costs for White Bluff would exceed \$1 billion. Nothing in the record indicates that Arkansas considered

these increased costs in establishing BART emission limits for Entergy White Bluff in the Arkansas RH SIP. In addition, EPA was not aware or did not consider Entergy's 2008 revised BART analysis for White Bluff.

*Response:* The EPA agrees that the Arkansas BART determination for Entergy White Bluff Units 1 and 2 was flawed. As described in our proposed rulemaking, the State failed to adequately consider controls and BART emission limits beyond the presumptive limits and the State did not determine that the general assumptions underlying the EPA's analysis of presumptive limits in its 2005 BART Rule were not applicable to White Bluff. As to the revised 2008 BART analysis for White Bluff, which the source submitted to ADEQ, EPA notes that the Arkansas RH SIP submittal that EPA received from the State on September 23, 2008, contains a BART analysis for White Bluff dated December 2006.<sup>58</sup> The Arkansas RH SIP submittal does not contain the revised 2008 BART analysis for White Bluff, nor was the revised 2008 BART analysis for White Bluff ever submitted to EPA by the State as an official RH SIP revision. Given this, EPA has not taken the revised analysis into account in evaluating the Arkansas RH SIP.

*Comment:* The process used by the State of Arkansas in adopting the presumptive emission limits set forth in EPA's Guidelines as BART for Flint Creek Boiler No. 1 was improper. For the Flint Creek facility, there is no BART analysis or other information that indicates the actual costs of various control technologies or other options for addressing RH concerns, and there is nothing in the record that reflects that ADEQ considered the actual costs of controls at the Flint Creek plant in its determination of BART for this facility. This is due to Arkansas's improper adoption and reliance on EPA's presumptive limits.

*Response:* The EPA agrees that the process used by Arkansas in adopting the NO<sub>x</sub> and SO<sub>2</sub> presumptive emission limits set forth in EPA's Guidelines for BART for Flint Creek Boiler No. 1 was improper. The State did not consider the costs of controls or any of the other statutory factors, as required under the RHR and the Act, when making its BART determinations for this source. For this reason we are finalizing our proposed disapproval of the States' NO<sub>x</sub>

<sup>55</sup> 76 FR 58570, at 58590.

<sup>56</sup> The BART Guidelines provide that States must require 750 MW power plants to meet specific control levels for SO<sub>2</sub> of either 95% control or 0.15 lb/MMBtu, for each EGU greater than 200 MW that is currently uncontrolled unless you determine that an alternative control level is justified based on a careful consideration of the statutory factors (Appendix Y to Part 51, section IV.E.4.).

<sup>57</sup> 76 FR 58570, at 58593.

<sup>58</sup> See "BART Analysis for the White Bluff Steam Electric Station," dated December 2006 and prepared by Robert Paine, found in Appendix 9.3A of the Arkansas RH SIP.

and SO<sub>2</sub> BART determinations for Flint Creek Boiler No. 1.

*Comment:* The EPA approval of the PM BART determination for Flint Creek Boiler No. 1 in which BART analysis was not conducted because visibility impacts are minimal contradicts EPA's later rejection of presumptive limits for failure to conduct a full BART analysis for NO<sub>x</sub> and SO<sub>2</sub> at the same facility.

*Response:* Our proposed approval of the PM BART determination for the AEP Flint Creek Boiler No. 1 does not contradict our proposed disapproval of the NO<sub>x</sub> and SO<sub>2</sub> presumptive limits for the same source. In our review of the Arkansas RH SIP, we evaluated the determination by ADEQ that no additional PM controls are required at the Flint Creek Boiler No. 1. ADEQ's determination was based on the pre-control modeling performed by ADEQ and a review of AEP SWEPCO's statement that the PM visibility modeling did not "trip the BART impact threshold." We reviewed the pre-control modeling performed by ADEQ using the 24-hr actual maximum emissions from the baseline period. The modeling results in Appendix 9.2B of the Arkansas RH SIP and presented in Table 7-6 of Appendix A of the Technical Support Document (TSD),<sup>59</sup> indicate that PM contributes less than 0.5% of the total visibility impacts from Flint Creek Boiler No. 1 at all nearby Class I areas with the exception of Upper Buffalo. PM contributions to visibility impacts at Upper Buffalo from Flint Creek are less than 2% of the total visibility impairment at this Class I area. On the most impacted day at Upper Buffalo, modeling the 24-hr actual maximum emissions demonstrates that PM contributes only 0.07 dv of the total 3.781 dv modeled visibility impact from the source. As stated in the proposal, we found that the visibility impact from PM emissions alone is so minimal such that the installation of any additional PM controls on the unit (including any upgrades to the existing controls) could only have minimal visibility benefit and therefore would not be justified. This is in keeping with the BART Rule, which states the following:

"Consistent with the CAA and the implementing regulations, States can adopt a more streamlined approach to making BART determinations where appropriate. Although BART determinations are based on the totality of circumstances in a given situation, such as the distance of the source from a Class I area, the type and amount of pollutant at issue, and the availability and cost of controls, it is clear that in some situations, one or more factors will clearly suggest an

outcome. Thus, for example, a State need not undertake an exhaustive analysis of a source's impact on visibility resulting from relatively minor emissions of a pollutant where it is clear that controls would be costly and any improvements in visibility resulting from reductions in emissions of that pollutant would be negligible. In a scenario, for example, where a source emits thousands of tons of SO<sub>2</sub> but less than one hundred tons of NO<sub>x</sub>, the State could easily conclude that requiring expensive controls to reduce NO<sub>x</sub> would not be appropriate. In another situation, however, inexpensive NO<sub>x</sub> controls might be available and a State might reasonably conclude that NO<sub>x</sub> controls were justified as a means to improve visibility despite the fact that the source emits less than one hundred tons of the pollutant."<sup>60</sup>

Clearly, the most effective controls to address visibility impairment from the source are those that would reduce emissions of visibility impairing pollutants other than direct emissions of PM. Therefore, we are finalizing our proposed disapproval of the NO<sub>x</sub> and SO<sub>2</sub> BART determinations for Flint Creek Boiler No. 1, as ADEQ did not properly identify and evaluate NO<sub>x</sub> and SO<sub>2</sub> controls to address visibility impairment from the source. As explained elsewhere in our response to comments, this is consistent with the BART Guidelines and with our action on other state's RH SIPs.

*Comment:* The EPA's 2004 proposed RHR provided extensive technical justification to establish that the presumptive limits represent cost effective technologies equivalent to BART. In addition, the 2004 proposed RHR provides that the adoption of the presumptive limits by the state is acceptable unless the states choose to conduct a BART analysis to support different limits. Arkansas relied on the 2004 proposed RHR to adopt presumptive limits, along with consultation with BART-eligible sources to determine whether any site-specific factors vary significantly from those examined by EPA. Since no factors have been identified by the affected sources, Arkansas adopted EPA's presumptive limit without any further analysis. That is all that is required under the RHR.

*Response:* The EPA agrees that we went through extensive analysis to provide presumptive BART emission limits. As stated in our proposed rulemaking on the Arkansas RH SIP, the purpose of the presumptive limits in the BART Guidelines was to identify controls that the Agency considered to be generally cost-effective across all affected units. Because EPA's extensive analysis found that these controls are generally cost-effective across all

affected units and were anticipated to result in a substantial degree of visibility improvement, EPA concluded that such units should at least meet the presumptive limits. However, the RHR and the BART Guidelines make clear that the presumptive limits are rebuttable.<sup>61</sup> As discussed elsewhere in our response to comments, the RHR and the BART Guidelines make clear that the presumptive limits will not necessarily be the appropriate level of control for all EGUs. Therefore, EPA cannot approve any BART determination that relies upon the presumptive emission limit unless the five factor BART analysis shows the presumptive emission limit meets BART. EPA disagrees that the 2004 proposed RHR provides that the adoption of the presumptive limits by the state is acceptable unless the state chooses to conduct a BART analysis to support different limits. The RHR (in some instances referred to in the comment as the BART Rule) and the BART Guidelines do not provide that a state may choose to conduct a BART analysis to support different limits. The RHR states the following concerning presumptive limits:

"If, upon examination of an individual EGU, a State determines that a different emission limit is appropriate based upon its analysis of the five factors, then the State may apply a more or less stringent limit."<sup>62</sup>

There is similar language elsewhere in the RHR and the BART Guidelines. The RHR and the BART Guidelines do not contain language giving the State discretion to determine whether or not to conduct a five factor BART analysis when the presumptive emission limits have been adopted.

The EPA disagrees that reliance on the 2004 proposed RHR to adopt presumptive limits along with consultation with subject to BART sources to determine whether any site-specific factors vary significantly from those examined by EPA is all Arkansas is required to do to satisfy the BART requirements under the RHR. The RHR states that for each source subject to BART, states are required to identify BART after considering the five statutory factors in CAA section 169A(g), as follows:

"States must identify the best system of continuous emission control technology for each source subject to BART taking into account the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use at the

<sup>59</sup> These documents can be found in the docket for our rulemaking.

<sup>60</sup> 70 FR 39116.

<sup>61</sup> 71 FR 60619.

<sup>62</sup> 70 FR 39132.



source, the remaining useful life of the source, and the degree of visibility improvement that may be expected from available control technology.”<sup>63</sup>

Therefore, adoption of the NO<sub>x</sub> and SO<sub>2</sub> presumptive limits alone does not satisfy the requirements of the RHR and the CAA.

*Comment:* The EPA’s 2004 proposed RHR supports the position that the presumptive limits identified in the RHR are adequate to meet the visibility requirements for the first implementation period of the RHR. Thus, Arkansas’s use of presumptive limits should be approved because, like the RHR confirms, use of presumptive limits by Arkansas ensures that there is sufficient visibility improvement to satisfy the URP goals. The EPA’s suggestion that a more detailed or extensive investigation is required is not supported by the RHR or guidance. It is the state’s prerogative to make this determination and to choose what sources of information and degree of investigation is adequate. Having confirmed EPA’s expectations, the state’s submission should be approved.

*Response:* Neither the 2004 proposed nor the final RHR provide that adoption of the presumptive emission limits identified in the RHR are all that is necessary to meet the visibility requirements for the first implementation period of the RHR. The EPA disagrees that the RHR confirms that use of presumptive limits by states ensures that there is sufficient visibility improvement to satisfy the URP goals. It appears that the comment may have been referring to the “national visibility goal,” or “reasonable progress goals,” (which are interim visibility goals towards meeting the national visibility goal), instead of the “URP goals.” The RHR states the following regarding the SO<sub>2</sub> and NO<sub>x</sub> presumptive limits:

“Based on our analysis of emissions from power plants, we believe that applying these highly cost-effective controls at the large power plants covered by the guidelines would result in significant improvements in visibility and help to ensure reasonable progress toward the national visibility goal.”<sup>64</sup>

A full reading of the RHR and the BART Rule, demonstrates that the proper interpretation of this statement is that because EPA found these controls to be generally highly cost-effective and would result in significant visibility improvement, EPA concluded that requiring affected sources to achieve at least this level of control would *help* ensure reasonable progress toward the

national visibility goal. The RHR did not confirm that by adopting the presumptive emission limits states *would ensure* sufficient visibility improvement to satisfy their reasonable progress goals, since for the first implementation period this can only be confirmed by EPA’s full approval of the state’s RH SIP. Furthermore, for a state to achieve reasonable progress during the first implementation period, it must look at sources beyond those that are subject to BART as well as at non-point sources and determine, based on consideration of the four statutory factors at 40 CFR 51.308(d)(1)(i), whether it is reasonable to require these sources to install additional pollution controls. Therefore, even if states satisfy the BART requirements, satisfaction of the reasonable progress requirements can’t be met by complying with BART requirements alone.

With regard to the comment that the RHR and BART Guidelines do not support EPA’s position that a more detailed or extensive investigation is required, EPA notes that in response to comments on the proposed BART Guidelines that the presumptive SO<sub>2</sub> EGU limits should be more stringent, EPA justified its decision not to establish more stringent presumptive emission limits in the preamble to the final BART Rule by explaining that “[i]f, upon examination of an individual EGU, a State determines that a different emission limit is appropriate based upon its analysis of the five factors, then the State may apply a more or less stringent limit.”<sup>65</sup> Similar statements are made elsewhere in the BART Rule. Clearly, the RHR and the BART Rule do not suggest the presumptive limits should be viewed as establishing a safe harbor from more stringent regulation under the BART provisions. While states do have discretion in how to go about making BART determinations, states have a duty to evaluate the five statutory factors,<sup>66</sup> and should consider the level of control that is currently achievable at the time the BART analysis is conducted.<sup>67</sup>

*Comment:* The EPA was incorrect in disapproving ADEQ’s SO<sub>2</sub> and NO<sub>x</sub> BART determinations that adopted the presumptive limit for subject to BART power plants greater than 750 MW. ADEQ used the presumptive limits provided by EPA in the BART Rule and worked with the affected facilities to make BART determinations.

*Response:* The EPA disagrees. States have a duty to evaluate the five statutory factors,<sup>68</sup> and should consider the level of control that is currently achievable at the time the BART analysis is conducted.<sup>69</sup> As already explained in our response to similar comments in this final rulemaking, adoption of the presumptive emission limits for subject to BART EGUs greater than 750 MW, without a proper evaluation of the five statutory factors, is not sufficient to meet the BART requirements in the RHR and the BART Rule.

*Comment:* The EPA incorrectly states that such BART-eligible sources should at least meet the presumptive limits. BART-eligible sources are just that—eligible. As such, these sources are not required to meet any limit until modeling indicates that the unit either causes or contributes to visibility impairment. The use of the phrase “BART-eligible” in this context appears to be a mistaken reference to “subject-to-BART” sources.

*Response:* The EPA agrees that we meant to say that “subject to BART sources” rather than “BART eligible sources” should at least meet the presumptive limits. This misstatement is minor and did not affect our evaluation of Arkansas’s RH SIP.

#### *B. Comments on Reasonable Progress Goals and Long Term Strategy*

*Comment:* The EPA’s proposed rule would disapprove Arkansas’s RPGs because in EPA’s view the State did not provide an analysis that considered the four statutory factors under 40 CFR 51.308(d)(1)(i)(A) to evaluate the potential of controlling certain sources or source categories for addressing visibility impacts from man-made sources. Whether or not this is true, it does not appear that the state has fallen short of its obligations under the RHR and applicable EPA guidance. States generally must consider the reasonable progress factors and the URP in establishing RPGs. Arkansas clearly considered the URP and has demonstrated that the measures included in the SIP exceed those necessary to meet the URP for both of its Class I areas. As for the reasonable progress factors, the BART Guidelines note their substantial similarity to the BART factors (70 FR 39143), and EPA guidance makes clear that states need not reassess the reasonable progress factors for sources subject to BART for which the state has already completed a BART analysis. As such, EPA has not

<sup>63</sup> 70 FR 39132.

<sup>64</sup> See 40 CFR 51.308(e)(1)(ii)(A) and 42 U.S.C. 7491(g)(2).

<sup>67</sup> 70 FR 39171.

<sup>68</sup> See 40 CFR 51.308(e)(1)(ii)(A) and 42 U.S.C. 7491(g)(2).

<sup>69</sup> 70 FR 39171.

<sup>63</sup> 70 FR 39158.

<sup>64</sup> 70 FR 39131.

identified a flaw in the state's reasonable progress analysis warranting disapproval of Arkansas's selected RPGs. EPA must respect the states' considerable discretion in determining RPGs and cannot substitute its judgment for that of the state simply because EPA would have performed a different type of assessment if it had the authority to establish RPGs. The EPA does not have the authority to require the adoption of RPGs other than those found by the states to be reasonable and must defer to the state's reasonable progress determinations.

*Response:* The EPA disagrees that the Arkansas RH SIP has not fallen short of its obligations under the RHR and applicable EPA guidance. With respect to the RPG requirements, the State has fallen short of its obligations precisely because it did not provide an analysis that considered the four statutory factors, as required under 40 CFR 51.308(d)(1)(i)(A). The RHR states the following with regard to RPG requirements:

"Today's final rule requires the States to determine the rate of progress for remedying existing impairment that is reasonable, taking into consideration the statutory factors, and informed by input from all stakeholders."<sup>70</sup>

The EPA's 2007 guidance for setting RPGs (referred to hereafter as EPA's RPG Guidance) states the following with regard to the statutory factors under 40 CFR 51.308(d)(1)(i)(A):

"The regional haze rule requires you to clearly support your RPG determination in your SIP submission based on the statutory factors."<sup>71</sup>

Therefore, it is clear that the Arkansas RH SIP has fallen short of its obligations with regard to RPG requirements under the RHR and applicable EPA guidance.

The EPA agrees that states generally must consider the reasonable progress factors (*i.e.* the four statutory factors) under 40 CFR 51.308(d)(1)(i)(A) and the URP in establishing RPGs. The EPA also agrees that EPA guidance states that it is not necessary for states to reassess the reasonable progress factors for sources subject to BART for which the state has already completed a full five factor BART analysis.<sup>72</sup> However, the requirement in the RHR and EPA's RPG guidance for states to consider the four statutory factors applies to all point sources (and non-point sources if appropriate), and as such, is not limited

only to sources that are subject to BART. In establishing RPGs, states must still consider the four statutory factors for sources that are not subject to BART. EPA's guidance for establishing RPGs states the following:

"The discussion of the statutory factors in this guidance is largely aimed at helping States apply these factors in considering measures for point sources. States may find that the factors can be applied to sources other than point sources; the meaning of the factors, however, should not be unduly strained in order to fit non-point sources."<sup>73</sup>

As such, what warrants EPA's disapproval of Arkansas's RPGs is that in establishing its RPGs, the State did not evaluate the four statutory factors for sources that are not subject to BART, as required under 40 CFR 51.308(d)(1)(i)(A). Arkansas's lack of RPG analysis is especially troublesome in light of several sources not subject to BART which contribute to the impairment of visibility above 0.5 dv, as explained in more detail in our proposed rulemaking. To satisfy the RHR requirements, the State must do more than just consider the URP in establishing RPGs. As explained in our proposed rulemaking on the Arkansas RH SIP, the RHR provides that EPA will consider both the State's consideration of the four factors in 40 CFR 51.308(d)(1)(i)(A) and its analysis of the URP in determining whether the State's goal for visibility improvement provides for reasonable progress.<sup>74</sup> Therefore, the State must still consider the four statutory factors under 40 CFR 51.308(d)(1)(i)(A), even if the CENRAP's modeling demonstrated that the measures included in the SIP exceed those necessary to meet the URP for the first implementation period for both of Arkansas's Class I areas. The RHR and EPA's guidance for establishing RPGs do not provide that a State may forego an analysis of the four statutory factors if modeling demonstrates that it is expected to meet the URP in 2018 for both of its Class I areas. EPA agrees with the commenter that states have considerable discretion in determining RPGs. Nevertheless, there are several requirements that states must meet in establishing their RPGs, and where EPA determines that these requirements have not been satisfied, EPA has the authority to disapprove the State's RPGs and indeed must disapprove it as not meeting the Federal requirements.

In our disapproval of the State's RPGs, EPA is not substituting its judgment for

that of the State. Our disapproval is not based on a disagreement with the State with regard to the value of the State's RPGs, rather our disapproval is based on the fact that the State did not evaluate the four statutory factors in establishing its RPGs, especially given that known sources of visibility impairment were not analyzed. We note that, at this point, it is not possible to know whether different RPGs are appropriate for Arkansas's Class I areas. Until the State conducts a proper evaluation of the four statutory factors, in accordance with the CAA § 169A(g)(1), 40 CFR 51.308(d)(1)(i)(A), and EPA's RPG Guidance, or EPA conducts such evaluation in the context of a FIP, we will not know whether different RPGs are appropriate for Arkansas's Class I areas.

*Comment:* The EPA properly approved Arkansas's URP, but improperly applied the URP when analyzing Arkansas's BART determinations and RPGs. EPA acknowledges that the measures Arkansas adopted in the RH SIP would meet the URP, but EPA still partially disapproved the Arkansas RH SIP in part because ADEQ did not undertake any "further analysis" after determining its RPGs would meet or exceed the URP. EPA's claim that Arkansas is required to undertake any further analysis lacks a legal basis, as states are not required to go beyond the URP analysis in establishing RPGs. Neither the CAA nor the RHR allow for the "further analysis" EPA is requiring of Arkansas regarding its RPGs and the URP. Courts have held that when an agency relies on factors which Congress has not intended it to consider, then such action is arbitrary and capricious (*Arizona Public Service Company v. US EPA*, 562 F.3d 1116, 1123 (10th Cir. 2009)). The RHR explains that states must consider the uniform rate of improvement in visibility and the emissions reductions needed to achieve it when formulating RPGs, and since Arkansas has exceeded the URP when formulating its RPGs, Arkansas has met the legal requirements of the RHR. EPA should not have disapproved Arkansas's RPGs since they are consistent with the CAA and the visibility impairment regulations. The EPA's disapproval of Arkansas's RPGs elevates form over substance, and fails to recognize the purpose of RPGs in improving visibility impairment. The RHR only requires additional analysis when a state establishes RPGs that provide for a slower rate of improvement than the URP (40 CFR 51.308(d)(1)(ii)).

*Response:* The EPA disagrees that we improperly applied the URP when

<sup>70</sup> 64 FR 35731.

<sup>71</sup> See EPA's Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), Section 2.4.

<sup>72</sup> See EPA's Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), Section 5.0.

<sup>73</sup> See EPA's Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), Section 1.2.

<sup>74</sup> 64 FR 35766.

analyzing Arkansas's BART determinations and RPGs. In fact, EPA did not consider the State's URP in evaluating the State's BART determinations because EPA does not have authority under the RHR to do so. With regard to the RPGs, EPA upholds its proposed disapproval of the State's RPGs because the State did not undertake an analysis of the four statutory factors, as required under 40 CFR 51.308(d)(1)(i)(A). While EPA agrees that the RHR requires states to consider the uniform rate of improvement in visibility when formulating RPGs, we disagree that a state's consideration of the URP and establishment of RPGs that provide for a slightly greater rate of improvement in visibility than would be needed to attain the URP is all that is needed to satisfy the RPG requirements in the RHR. EPA also disagrees that the RHR only requires additional analysis when a state establishes RPGs that provide for a slower rate of improvement than the URP. As explained in our proposed rulemaking on the Arkansas RH SIP, in establishing its RPGs, the State is required by CAA § 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A) to "[c]onsider the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected sources, and include a demonstration showing how these factors were taken into consideration in selecting the goal."

The RHR states the following with regard to RPG requirements:

"Today's final rule requires the States to determine the rate of progress for remedying existing impairment that is reasonable, taking into consideration the statutory factors, and informed by input from all stakeholders."<sup>75</sup>

An analysis of the four statutory factors is precisely the "further analysis" EPA refers to in its proposed rulemaking on the Arkansas RH SIP.<sup>76</sup> As explained above, both the RHR and the CAA require states to undertake this analysis in establishing its RPGs. Therefore, EPA disagrees that our proposed rulemaking on the Arkansas RH SIP is arbitrary and capricious because it relies on factors which Congress has not intended it to consider. CAA section 169A(g)(1) clearly requires states to consider these four factors in establishing their RPGs. Accordingly, EPA's proposed disapproval of Arkansas's RPGs is consistent with the RH regulations and the Act. Because the CAA section 169A(g)(1) and 40 CFR

51.308(d)(1)(i)(A) require that states consider the four statutory factors in establishing their RPGs, a requirement which Arkansas has not satisfied, our proposed disapproval of Arkansas's RPGs recognizes the purpose of the RPGs in improving visibility impairment and is in keeping with the statutory requirements.

*Comment:* We agree with EPA's proposed disapproval of Arkansas's RPGs because no proper four-factor analysis was done in setting those goals. In setting its RPGs, the state is required to consider the four statutory factors and include a demonstration showing how these factors were taken into consideration in selecting the goal (40 CFR 51.308(d)(1)(i)(A) and 42 U.S.C. 7491(g)(1)). As EPA stated in its proposed rulemaking, the RHR makes clear that just meeting the URP does not exempt a state from a proper four-factor evaluation of RPGs for the state's Class I areas (see 76 FR 64195 and 64 FR 35732). Being on the "glide path" to achieve the URP does not by itself ensure that a Class I area will make reasonable progress to reach natural background visibility conditions by 2064 because the "glide path" assumes that increasing levels of reductions of visibility-impairing pollutants will consistently occur over the next 53 years until 2064. There is no guarantee that this will happen, and ADEQ has not indicated what controls will be required in the next 53 years to ensure they stay on the glide path. EPA ensures that all reasonable measures that can be implemented during the first planning period are implemented by requiring states to evaluate whether additional progress beyond the URP is reasonable in this first RH planning period. Considering that the modeling on which future predictions of visibility impairment levels are based has uncertainties both in the modeling itself and in the projections of emissions for various source categories, it is necessary that states be required to conduct a four-factor analysis to evaluate all the controls that could reasonably be implemented to make progress toward the national visibility goal.

*Response:* The EPA agrees that Arkansas did not do a proper four-factor analysis nor did it include a demonstration showing how these factors were taken into consideration in selecting the goal in accordance with the CAA and the RHR. Please see elsewhere in our response to other comments for an explanation of the requirements for establishing RPGs.

*Comment:* The EPA has proposed to partially disapprove Arkansas's LTS for failure to include adequate emissions

limitations as required under 40 CFR 51.308(d)(3)(v)(C) due to the fact that the State relied on its BART emission limits to satisfy this LTS requirement and EPA is proposing to disapprove the majority of those BART emission limits (76 FR 64218). The EPA has proposed to approve the remaining elements of the Arkansas LTS. EPA should not partially approve any part of Arkansas's LTS when EPA has proposed to disapprove Arkansas's RPGs. A State's LTS is the State's plan to ensure that reasonable progress towards achieving natural background conditions is achieved both at the State's Class I areas and at out-of-state Class I areas impacted by sources within the State (40 CFR 51.308(d)(3)). If the State's RPGs are not approvable, then no part of the State's LTS should be approved because the purpose of the LTS is to reflect the State's plan for assuring reasonable progress, which is in turn based on the State's RPGs. The Arkansas LTS should be disapproved in its entirety.

*Response:* While EPA agrees that a state's LTS is its plan to ensure that reasonable progress towards achieving natural background conditions is achieved both at the state's Class I areas and at out-of-state Class I areas impacted by sources within the state,<sup>77</sup> EPA disagrees that no part of a state's LTS should be approved even if the state's RPGs are not approvable. As explained in our proposed rulemaking on the Arkansas RH SIP, the LTS is a compilation of state-specific control measures relied on by the states for achieving their RPGs.<sup>78</sup> Regardless of what RPGs a state establishes (and whether or not EPA approves these RPGs), state-specific control measures *will help the state make progress towards improving visibility*. Even though these control measures may not ensure that a state's RPGs will be met, especially in cases such as this where EPA is disapproving the State's RPGs, the control measures that the State has relied on in the LTS for achieving its RPGs (with the exception of the BART determinations we are disapproving) will aid the State in achieving reasonable progress.

Furthermore, 40 CFR 51.308(d)(3)(v) requires that states consider certain factors in developing their LTS. These LTS factors are: (A) Emission reductions due to ongoing air pollution control programs, including measures to address RAVI; (B) measures to mitigate the impacts of construction activities; (C) emissions limitations and schedules for compliance to achieve the

<sup>75</sup> 64 FR 35731.

<sup>76</sup> 76 FR 64195.

<sup>77</sup> 40 CFR 51.308(d)(3).

<sup>78</sup> 76 FR 64212.

reasonable progress goal; (D) source retirement and replacement schedules; (E) smoke management techniques for agricultural and forestry management purposes including plans as currently exist within the state for these purposes; (F) enforceability of emissions limitations and control measures; and (G) the anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the period addressed by the LTS. As explained in our proposed action on the Arkansas RH SIP, we are finding that Arkansas had appropriately considered these factors, with the exception of the factor under 40 CFR 51.308(d)(3)(v)(C), which requires the State to consider emission limitations and schedules for compliance to achieve the RPGs. Therefore, with the exception of this element, we are finding that the LTS satisfies the requirements of 40 CFR 51.308(d)(3). Furthermore, we point out that satisfaction of some of the requirements under 40 CFR 51.308(d)(3) is not intrinsically tied to or conditioned upon a specific dv value for the RPG. Therefore, disapproval of the RPGs does not mean automatic disapproval of all elements of the LTS. We are finalizing our proposed partial approval and partial disapproval of Arkansas's LTS.

*Comment:* According to EPA's TSD for the Arkansas RH SIP, Arkansas Class I areas are impacted by sources from outside the State as well as by sources within the State. In 2018, Arkansas sources are projected to be the top contributor to visibility impairment at Caney Creek and Upper Buffalo. The contribution from Arkansas's sources at the Class I areas in Arkansas, Missouri, Oklahoma, and other states is projected to increase in 2018 from 2002 levels. It appears that the projected improvement in visibility in 2018 for Caney Creek and Upper Buffalo is mainly due to significant projected emission reductions from sources in Texas. Even if other states are requiring emission reductions at the sources that cause and contribute to visibility impairment in Arkansas's Class I areas, Arkansas still has an obligation under its LTS to adopt control measures adequate to address its contribution to visibility impairment in the State's Class I areas. The Federal RH regulations require that "where other States cause or contribute to impairment in a mandatory Class I Federal area, the State must demonstrate that it has included in its implementation plan all measures necessary to obtain its share of the emissions reductions needed to meet the progress goal for the area" (see 40 CFR 51.308(d)(3)(ii)). Therefore, as

part of the LTS, Arkansas is required to identify all sources of visibility impairment in the State and should have considered the adoption of emission limitations and compliance schedules for those sources to achieve natural background visibility conditions at Arkansas's Class I areas. Arkansas failed to properly evaluate these emission limitations and compliance schedules.

*Response:* The EPA agrees that Arkansas Class I areas are impacted by sources from outside the State as well as by sources within the State, and that modeling demonstrates that Arkansas sources are projected to be the top contributor to visibility impairment at Caney Creek and Upper Buffalo in 2018. EPA also agrees that the contribution of Arkansas sources to visibility impairment at Class I areas in Arkansas, Missouri, Oklahoma, and other states is projected to increase in 2018 from baseline levels.

Under 40 CFR 51.308(d)(3), states must submit a LTS that addresses visibility impairment for each Class I area within the State and for each Class I area located outside the State which may be affected by emissions from the State. Arkansas has done this, and we are partially approving and partially disapproving that LTS, as explained in more detail in our proposed rulemaking and discussed elsewhere in our response to other comments. Under 40 CFR 51.308(d)(3)(i), states that are reasonably anticipated to contribute to visibility impairment in any Class I area located in another state are required to consult with the other state to develop coordinated emission management strategies. States are also required to consult with any other states that are reasonably anticipated to contribute to visibility impairment in any Class I area within the state. As explained in our proposed rulemaking, Arkansas satisfied this requirement through its consultation with affected states. Under 40 CFR 51.308(d)(3)(ii), where other states cause or contribute to impairment in a Class I area, the State must demonstrate that it has included in its implementation plan all measures necessary to obtain its share of the emissions reductions needed to meet the progress goals for the area. States can meet this requirement through participation in a regional planning process where all potentially affected states are consulted, and by ensuring that they have included all measures needed to achieve their apportionment of emission reduction obligations agreed upon through that process. As explained in our proposed rulemaking on the Arkansas RH SIP, we are finding that

Arkansas satisfied its consultation requirements when establishing its LTS.<sup>79</sup> Therefore, EPA is finding that the Arkansas RH SIP satisfies the requirements under 40 CFR 51.308(d)(3)(i) and (ii).

The EPA agrees that as part of setting RPGs and developing a LTS, Arkansas is required to identify sources of visibility impairment in the State and to establish "emission limitations, schedules of compliance and other measures as may be necessary to make reasonable progress toward the national goal." In developing a RH SIP, the state accordingly must consider whether there are reasonable measures that should be adopted. A state is also required to consider the adoption of emission reduction measures needed to achieve the UR. The RHR does not require a state to consider what measures would be necessary to achieve natural background visibility conditions at Arkansas's Class I areas. EPA does, however, agree that Arkansas failed to properly evaluate whether there were any reasonable measures beyond BART that could have been adopted to improve visibility.

*Comment:* The fact that emissions of SO<sub>2</sub>, NO<sub>x</sub>, and other visibility impairing pollutants are projected to increase in 2018 compared to 2002 levels, indicates that Arkansas is not doing all it can to address the sources of visibility impairment that exist in the State of Arkansas. There are additional control measures Arkansas should have considered for adoption as part of its LTS. For example, ADEQ's BART emission limits for White Bluff Units 1 and 2 and Flint Creek do not reflect the top levels of emissions control achievable at Arkansas's subject to BART sources, nor do the emission limits reflect the capabilities of the control equipment that has been proposed to be installed. If not required to meet lower SO<sub>2</sub> limits as BART, ADEQ should evaluate lower SO<sub>2</sub> limits to ensure reasonable progress toward achieving natural background visibility conditions. Also, ADEQ did not evaluate installation of post-combustion controls such as SCR to meet the NO<sub>x</sub> BART requirements for White Bluff Units 1 and 2 or Flint Creek Boiler No. 1. The data on the worst 20% days for Caney Creek shows that nitrates are often the major component of visibility impairment during the winter months and the data on the best 20% days for Caney Creek shows that nitrates are more often the major component of visibility impairment. At Upper Buffalo, nitrates are the major component of

<sup>79</sup> 76 FR 64216.

visibility impairment in the winter months as well, and nitrates are also a major component of visibility impairment in the spring and fall months. The Missouri Class I areas show similar patterns. The 2018 modeling projections show that nitrates continue to be a major component of visibility impairment during the winter months on the 20% worst days at Caney Creek. Therefore, if post-combustion controls are not required as BART for White Bluff Units 1 and 2 and Flint Creek Boiler No. 1, then the State should be required to evaluate installation of post-combustion controls at these sources to meet reasonable progress requirements. If not ultimately required to meet lower SO<sub>2</sub> limits or the installation of SCR as BART, the State should evaluate lower limits and additional controls on SO<sub>2</sub> and NO<sub>x</sub> to ensure reasonable progress is made toward natural background visibility conditions.

*Response:* The EPA agrees that emissions of visibility impairing pollutants in Arkansas are projected to increase in 2018 from baseline levels, and that in establishing its RPGs and LTS, the State has not appropriately considered whether there are additional measures that would be reasonable for addressing visibility impairment. That emissions of SO<sub>2</sub>, NO<sub>x</sub>, and other visibility impairing pollutants in Arkansas are projected to increase suggests that the state should carefully consider what measures can be adopted to ensure that the state contributes to improving visibility in the region. EPA also agrees that Arkansas's NO<sub>x</sub> and SO<sub>2</sub> BART emission limits for White Bluff Units 1 and 2 and Flint Creek Boiler No. 1 do not reflect the most stringent level of emissions control achievable at Arkansas's subject to BART sources. As explained in our proposed rulemaking on the Arkansas RH SIP, we are disapproving the State's SO<sub>2</sub> and NO<sub>x</sub> BART determinations for White Bluff Units 1 and 2 and Flint Creek Boiler No. 1 because Arkansas limited its BART determinations to considering the measures necessary for achieving the presumptive limits and did not appropriately consider whether more stringent controls or emission limits were appropriate based on a consideration of the five statutory factors, as required by 40 CFR 51.308(e)(1)(ii)(A) and section 169A(g)(2) of the CAA. However, EPA disagrees that if we ultimately approve BART determinations that do not require White Bluff Units 1 and 2 and Flint Creek Boiler No. 1 to install post-combustion controls and/or do not

require these sources to establish SO<sub>2</sub> and NO<sub>x</sub> BART emission limits more stringent than those currently adopted by the State, Arkansas is required to evaluate post-combustion controls and more stringent SO<sub>2</sub> and NO<sub>x</sub> limits for its subject to BART sources to satisfy the reasonable progress requirements at 40 CFR 51.308(d)(1). Because the BART analysis that is required for subject to BART sources is based, in part, on an assessment of many of the same factors that must be addressed in establishing a state's RPGs, EPA's guidance for establishing RPGs provided that it is reasonable for a State to conclude that any control requirements imposed in the BART determination also satisfy the RPG-related requirements for source review in the first RPG planning period.<sup>80</sup> EPA's guidance states the following:

"Also, as noted in section 4.2, it is not necessary for you to reassess the reasonable progress factors for sources subject to BART for which you have already completed a BART analysis."<sup>81</sup>

Therefore, we note that once EPA has approved the BART determination for a particular pollutant for a given subject to BART source, the State is not required to evaluate the reasonable progress factors for that particular pollutant for the given source in order to satisfy the reasonable progress requirements.

*Comment:* There are additional control measures Arkansas should have considered for adoption as part of its LTS. Arkansas must consider controls for other point sources in the State that are not subject to BART but that could be required to reduce emission to help Arkansas and other affected states assure reasonable progress towards achieving background visibility conditions. For example, Arkansas should evaluate controls for Entergy's Independence Power Plant, which is located approximately 140 km from Upper Buffalo, and is the second largest source of SO<sub>2</sub> and NO<sub>x</sub> emissions in Arkansas (Entergy White Bluff is the first). Once the White Bluff power plant installs controls to meet BART for SO<sub>2</sub> and NO<sub>x</sub>, the Independence plant will be the largest source of SO<sub>2</sub> and NO<sub>x</sub> in the State. The Independence plant was not identified by ADEQ as BART-eligible. It consists of two coal-fired units that have no SO<sub>2</sub> control technology installed with a generating

capacity of 1700 MW (see Exhibit 23). PM emissions are controlled with electrostatic precipitators (ESPs) and NO<sub>x</sub> emissions are controlled only with overfire air. Despite its size and location, the Arkansas RH SIP did not identify the Independence plant as a possible source of visibility impairment. Upgraded combustion controls and/or installation of SCR should be evaluated for control of NO<sub>x</sub> emissions, and the installation of a scrubber should be evaluated for control of SO<sub>2</sub> emissions. Arkansas should be required to evaluate these as well as additional control measures to ensure it is doing all it can to provide for reasonable progress toward meeting natural visibility conditions at the State's Class I areas and at the Class I areas impacted by Arkansas sources.

*Response:* EPA agrees that Arkansas must consider controls for point sources in the State that are not subject to BART but that could be required to reduce emissions to help Arkansas and other affected states assure reasonable progress towards achieving background visibility conditions. We do note that the RHR and EPA's guidance for establishing RPGs give states flexibility in determining which particular sources to evaluate and how to take into consideration the four statutory factors. EPA's guidance for establishing RPGs provide the following:

"In determining reasonable progress, CAA § 169A(g)(1) requires States to take into consideration a number of factors. However, you have flexibility in how to take into consideration these statutory factors and any other factors that you have determined to be relevant. For example, the factors could be used to select which sources or activities should or should not be regulated, or they could be used to determine the level or stringency of control, if any, for selected sources or activities, or some combination of both."<sup>82</sup>

As the Entergy Independence Power Plant has significant emissions and emissions reductions from the source would likely help Arkansas and other affected states assure reasonable progress, EPA agrees that the Entergy Independence Power Plant is a good candidate for further consideration by Arkansas. As we are disapproving Arkansas's RPGs, the State will need to consider whether controls at this facility and any other facilities would be reasonable for purposes of addressing visibility impairment.

*Comment:* In addition to Caney Creek and Upper Buffalo, sources in Arkansas also contribute to visibility impairment

<sup>80</sup> See EPA's Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), Section 4.2.

<sup>81</sup> See EPA's Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), Section 5.0.

<sup>82</sup> See EPA's Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), Section 5.0.

in Missouri's two Class I areas (Mingo and Hercules Glades) and Oklahoma's Class I area (Wichita Mountains). Even though Arkansas claims it does not need to adopt any additional measures in its LTS because the CENRAP 2018 modeling showed that the emissions reductions planned in CENRAP states were sufficient for Missouri's Class I areas to meet their RPGs, EPA has not proposed action on the Missouri RH SIP, and it is not clear if EPA will be approving Missouri's RPGs. Also, the CENRAP 2018 modeling Missouri relied on may be underestimating impacts due to sulfates, as indicated by EPA in Appendix A to the TSD for the Arkansas RH SIP. For the Mingo Class I area in Missouri, since there was not sufficient capture of valid IMPROVE data to determine baseline conditions in accordance with EPA guidance, it is not clear whether the CENRAP modeling shows that the projected visibility improvements at Mingo will meet or exceed the URP toward attaining background visibility conditions. Therefore, Arkansas cannot rely on Missouri's claims that it is meeting its RPGs to justify avoiding the evaluation of additional control measures for sources of visibility-impairing pollutants in Arkansas. In addition, Arkansas sources contributed 2.0% to visibility impairment at Wichita Mountains during the baseline period and are projected to contribute 2.3% in 2018. This may appear to be a small contribution, but it is a contribution nonetheless. Oklahoma apparently does not agree with ADEQ that Arkansas's source contributions are insignificant. Since the Wichita Mountains is not expected to achieve the necessary improvements in visibility in 2018 to meet or exceed the URP, Arkansas should be required to evaluate emission controls that could be required at Arkansas sources that impact visibility at the Wichita Mountains. Arkansas has an obligation as part of its LTS to evaluate and adopt those control measures necessary to address Arkansas's share of visibility impairment in Class I areas in Missouri and Oklahoma (40 CFR 51.308(d)(3)(ii)).

*Response:* We disagree that because EPA has not proposed action on the Missouri RH SIP, we cannot find that Arkansas does not need to adopt any additional measures in its LTS. We find that we have the authority to act on Arkansas's LTS now.

In the context of acting on the LTS and Arkansas's RH SIP, the comment raises a concern with missing data at the Mingo Wilderness Area's IMPROVE monitor, and refers to a statement in the CENRAP TSD that because of a lack of

data it did not meet EPA's data acceptance criteria. The Mingo monitor had a wasp type nest inside the collection apparatus for the Organic Carbon sampling stream that may have impacted the air flow and sampling for these specific pollutants, but not the other sampling streams. The other pollutants, including nitrates and sulfates (NO<sub>x</sub> and SO<sub>2</sub> products) were collected for the entire baseline time period without the need for data substitution. The IMPROVE group did evaluate two different approaches to backfill the missing data for the organics and Elemental Carbon that resulted in nearly identical results. They then selected the method that they thought was most appropriate in backfilling the data based on other monitoring data collected. This backfill data was then used with the rest of the monitored data for the baseline for the Mingo monitor. The IMPROVE group is made up of a number of experts in these specific issues and we concur that the approach is acceptable for use in establishing the baseline. It is very important to note that the Organic Carbon is a significantly smaller component of the visibility impairment than the amount of impairment from ammonium nitrate and ammonium sulfate at Mingo. We do not believe any inaccuracies in the backfill information for organic carbon would significantly impact the baseline at Mingo.<sup>83</sup>

With regard to the establishment of a state's LTS, 40 CFR 51.308(d)(3)(i) states the following:

"Where the State has emissions that are reasonably anticipated to contribute to visibility impairment in any mandatory Class I area located in another State or States, the State must consult with the other State(s) in order to develop coordinated emission management strategies."

As explained in our proposed rulemaking on the Arkansas RH SIP, CENRAP's photochemical modeling demonstrated that besides Arkansas's own Class I areas, the only Class I areas where Arkansas sources can be said to be contributing to visibility impairment are the Mingo Wilderness Area and the Hercules Glades Wilderness Area in Missouri and not Wichita Mountains in Oklahoma. Arkansas considered

<sup>83</sup> Chuck McDate and Warren White UC Davis, Power Point from Inter-RPO Data Analysis/Monitoring Workgroup 9/28/05 "Approach for Substituting Mingo IMPROVE Carbon Data", RPO Call 092805 Mingo.ppt; Archuleta, et al. Extended Abstract #58 "IMPROVE Data Substitution Methods for Regional Haze", 58-Archuleta.pdf; Graphic of comparison of two technique results, Out.pdf; Communications record between Scott Copeland CIRA—Cooperative Institute for Research in the Atmosphere with Erik Snyder, EPA Region 6, February 10, 2012.

modeling that was performed by the CENRAP and consulted with Missouri, Oklahoma, and other potentially affected states. In its consultation with Missouri, both Arkansas and Missouri determined that it was not necessary for Arkansas to commit to additional emission reductions since the CENRAP modeling showed that emission reductions already planned by the CENRAP and other states would be sufficient for Missouri's Class I areas to meet their RPGs (notwithstanding the uncertainties that may have been involved in the modeling). We note that Arkansas will be considering whether additional emission reduction measures are reasonable for improving visibility at the Class I areas within Arkansas and revisiting several of its BART determinations. Any more stringent measures adopted by Arkansas to address the deficiencies we have identified in its RH SIP have the potential to also benefit visibility at Mingo and Hercules Glades. When we take action on the Missouri RH SIP, we will consider whether Missouri's RPGs are appropriate.

With regard to the comment that Arkansas sources contributed 2.0% to visibility impairment at Wichita Mountains during the baseline period and are projected to contribute 2.3% in 2018, EPA notes that removal of this 2.3% contribution to the total extinction results in a visibility improvement of only 0.2 dv from the 2018 projected visibility conditions. Although the Oklahoma Department of Environmental Quality (ODEQ) initially believed that emissions from Arkansas sources are impacting visibility at Wichita Mountains and that it might be necessary for Arkansas to commit to additional emissions reductions, Arkansas responded to ODEQ's concerns with a letter dated August 17, 2007, explaining that based on photochemical modeling, ADEQ had calculated that the total visibility impact from all sources in Arkansas at Wichita Mountains is 0.2dv.<sup>84</sup> Furthermore, in section X.A. of the Oklahoma RH SIP submitted to EPA, ODEQ references the August 17, 2007 letter sent by ADEQ and states that it is in agreement with the projected emissions reductions from Arkansas and all other states with which it consulted with regard to visibility impairment at Wichita Mountains.

<sup>84</sup> See letter from Mike Bates, Air Division Director, Arkansas Department of Environmental Quality, to Eddie Terrill, Air Division Director, Oklahoma Department of Environmental Quality, dated August 17, 2007. This letter is found in Appendix 10.3 of the Arkansas RH SIP.

Consequently, while we are concerned that the RPG at Wichita Mountains is not on the glide path, we believe the technical assessment that Arkansas sources do not have a significant impact at Wichita Mountains is accurate and ADEQ and ODEQ followed consultation procedures. We therefore disagree that Arkansas must adopt additional control measures to address its visibility impact at other states' Class I areas. Considering the modeling results and since both states agreed to this on the results of the consultations, we find that Arkansas has satisfied its obligations under 40 CFR 51.308(d)(3)(i) and (ii).

*Comment:* The EPA criticizes Arkansas for not conducting the four factor RPG analysis. However, EPA's guidance only requires a four factor analysis for potentially affected sources. Because Arkansas determined that emission reductions anticipated from implementation of BART and other CAA programs during the initial planning period are sufficient to satisfy the URP, it is not required to consider additional emission reductions from other potentially affected sources in setting its RPGs. This approach is supported by EPA's RPG Guidance, which opines that only BART and other existing CAA programs may be all that are necessary to achieve reasonable progress in the first planning period for some states. The EPA is incorrect that ADEQ relied solely on meeting the URP to reach its RPG determination. ADEQ relied on EPA guidance indicating the application of BART alone could be considered as constituting reasonable progress for the first planning period. Arkansas determined its URP. Arkansas participated in CENRAP, coordinated with Missouri Department of Natural Resources, and consulted with other states who may contribute to RH in Arkansas Class I areas. ADEQ also used modeling projections that show that the combination of already mandated controls, including BART emissions limitations, will provide for a rate of progress that improves visibility conditions and results in the attainment of natural visibility conditions by 2064. This modeling also demonstrated that the RPGs for Arkansas's Class I areas are better than the URP. This is consistent with the requirements of the CAA and EPA's regulations and guidance. Thus, Arkansas's RPGs should be approved by EPA.

*Response:* With regard to the comment that EPA's guidance only requires a four factor analysis for potentially affected sources, we note that EPA's RPG Guidance states the following:

"In determining reasonable progress, CAA § 169A(g)(1) requires States to take into consideration a number of factors. However, you have flexibility in how to take into consideration these statutory factors and any other factors that you have determined to be relevant. For example, the factors could be used to select which sources or activities should or should not be regulated, or they could be used to determine the level or stringency of control, if any, for selected sources or activities, or some combination of both."<sup>85</sup>

EPA's guidance for setting RPGs also provides that:

"The RHR gives States wide latitude to determine additional control requirements, and there are many ways to approach identifying additional reasonable measures; however, you must at a minimum, consider the four statutory factors. Based on the contribution from certain source categories and the magnitude of their emissions you may determine that little additional analysis is required to determine further controls are not warranted for that category."<sup>86</sup>

Although the State has flexibility in how to consider the four statutory factors, it must consider these four factors in some form. The State made no attempt to do this in the Arkansas RH SIP. Even if emission reductions anticipated from implementation of BART and other CAA programs during the initial planning period are expected to result in a slightly greater rate of improvement in visibility than would be needed to attain the URP for the first implementation period, the State must still consider whether any additional control measures would be reasonable, based on its consideration of the relevant factors. Arkansas's actions are especially problematic as there are sources that are not subject to BART but which contribute to visibility impairment above the State's established BART threshold of 0.5 dv. While EPA agrees that EPA's RPG Guidance states that BART and other existing CAA programs may be all that is necessary to achieve reasonable progress in the first planning period for some states, Arkansas's approach is not supported by our RPG Guidance.<sup>87</sup> EPA's guidance states that BART and other existing CAA programs may be all that is necessary, not that it is in fact all that is necessary. If the State believes that it is not necessary to require any sources to install controls under the

reasonable progress requirements (*i.e.* that there are no "potentially affected sources"), it must demonstrate this through its consideration of the four statutory factors.

As discussed in our proposed rulemaking on the Arkansas RH SIP, we agree that the State properly determined its URP, and that the State participated in CENRAP and coordinated and consulted with other states who may be contributing to visibility impairment in Arkansas's Class I areas. We find that Arkansas satisfies these requirements under the RHR. However, that is not all that a state is required to do in establishing its RPGs. In establishing its RPGs for any Class I area, a state must "consider the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected sources, and include a demonstration showing how these factors were taken into consideration in selecting the goal."<sup>88</sup> The Arkansas RH SIP does not satisfy this requirement.

With regard to the comment that modeling projections show that the combination of already mandated controls will provide for a rate of progress that improves visibility conditions and result in the attainment of natural visibility conditions by 2064, EPA notes that the CENRAP modeled the projected visibility conditions anticipated at each Class I area in 2018. The CENRAP modeling is based on emissions reductions expected to result from Federal, State, and local control programs that are either currently in effect or with mandated future-year emission reduction schedules that predate 2018. The CENRAP modeling itself did not show that already mandated controls are expected to attain natural visibility conditions by 2064. Rather, the rate of visibility improvement anticipated by the CENRAP modeling in 2018, if sustained, would result in a return to natural visibility conditions prior to 2064. Therefore the comment that Arkansas is expected to ultimately achieve the national goal prior to 2064 assumes that the same level of reductions of visibility-impairing pollutants that is expected to occur during the first implementation period ending in 2018 will increasingly occur during each implementation period until the final implementation period ending in 2064. However, there is no guarantee that this will occur. The Arkansas RH SIP addresses the requirements of the RHR only for the first implementation period

<sup>85</sup> See EPA's Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), Section 5.0.

<sup>86</sup> See EPA's Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), Section 4.2.

<sup>87</sup> See EPA's Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), Section 4.1.

<sup>88</sup> 40 CFR 51.308(d)(1)(i)(A).

ending in 2018. As such, EPA disagrees that we should approve Arkansas's RPGs because modeling demonstrates that Arkansas is expected to achieve the national goal prior to 2064.

*Comment:* The EPA should not have disapproved Arkansas's LTS since it is consistent with the CAA and the visibility impairment regulations. The EPA is proposing to disapprove Arkansas's LTS because Arkansas relied on the emissions reductions and schedules of compliance associated with Arkansas's BART determinations. The EPA's reliance on its disapproval of Arkansas's BART determinations as a basis for disapproving the LTS treads on the state's authority under the CAA. The EPA's disapproval of Arkansas's LTS elevates form over substance, disregards the underlying purpose of the visibility protection program, and does not recognize the purpose of the LTS. Arkansas's LTS complies with the CAA. The applicable regulations require each state to submit a long-term, 10- to 15-year strategy for making reasonable progress toward the national goal of natural visibility conditions in 2064. Given that Arkansas's LTS includes emission limits, compliance schedules and other measures necessary to achieve reasonable progress toward the national visibility goal and to ultimately achieve natural visibility prior to 2064, the EPA's proposed disapproval is baseless and further shows that EPA is acting beyond the scope of the visibility protection requirements of the CAA.

*Response:* We disagree that Arkansas's LTS fully satisfies the requirements of the CAA and the RH regulations. With regard to the LTS, the CAA requires that states establish:

"[A] long-term (ten to fifteen years) strategy for making reasonable progress toward meeting the national goal specified in subsection (a) of this section."<sup>89</sup>

Consistent with the requirement of the CAA, 40 CFR 51.308(d)(3) requires that states include in their RH SIPs a LTS that includes "enforceable emissions limitations, compliance schedules, and other measures as necessary to achieve the reasonable progress goals" for all Class I areas within, or affected by emissions from, the state.<sup>90</sup> At a minimum, states must describe how each of the following seven factors listed below are taken into account in developing their LTS: (1) Emission reductions due to ongoing air pollution control programs, including measures to address RAVI; (2) measures to mitigate the impacts of construction

activities; (3) emissions limitations and schedules for compliance to achieve the RPG; (4) source retirement and replacement schedules; (5) smoke management techniques for agricultural and forestry management purposes including plans as currently exist within the state for these purposes; (6) enforceability of emissions limitations and control measures; and (7) the anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the period addressed by the LTS.<sup>91</sup> Since 40 CFR 51.308(d)(3)(v)(C) requires that in developing its LTS, Arkansas consider emissions limitations and schedules of compliance to achieve the RPGs, the State included the BART emission limits it established for its subject to BART sources as part of its LTS. As explained in our proposed rulemaking on the Arkansas RH SIP, the BART emission limits established by Arkansas are an element of the LTS, and because we are disapproving a portion of Arkansas's BART determinations, it follows that the State did not properly consider emission limitations and schedules for compliance to include in its LTS, as required under 40 CFR 51.308(d)(3)(v)(C). Therefore, we cannot approve this element of the LTS. Furthermore, as pointed out in one of the comments we received, since Arkansas did not consider the four statutory factors under 40 CFR 51.308(d)(1)(i)(A) when establishing its RPGs, it is not possible to know at this point whether requiring additional controls for Arkansas source categories affecting visibility constitutes reasonable progress. Therefore, we find that Arkansas's LTS does not include those measures necessary to achieve reasonable progress toward the national visibility goal. This is in support of the finding that Arkansas has not properly considered emission limitations and schedules for compliance in establishing its LTS, as required under 40 CFR 51.308(d)(3)(v)(C).

We acknowledge that the CENRAP modeling shows that with the measures included in the RH SIP, Arkansas is projected to meet the URP for the first implementation period ending in 2018 for both of its Class I areas. However, with regard to the comment that Arkansas's LTS includes those measures necessary to ultimately achieve natural visibility prior to 2064, we note that the Arkansas's RH SIP (including the LTS) addresses the RHR requirements only for the first implementation period ending in 2018. The CENRAP modeling is based on emissions reductions

expected to result from Federal, State, and local control programs that are either currently in effect or with mandated future-year emission reduction schedules that predate 2018. The CENRAP modeling itself did not show that already mandated controls are expected to attain natural visibility conditions by 2064. Rather, the rate of visibility improvement anticipated by the CENRAP modeling in 2018, if sustained, will result in a return to natural visibility prior to 2064. This assumes that the same level of reductions of visibility-impairing pollutants that is expected to occur during the first implementation period ending in 2018 will increasingly occur during each implementation period until the final implementation period ending in 2064. However, there is no guarantee that this will in fact occur.

*Comment:* We agree with EPA's findings that ADEQ cannot rely solely on meeting the uniform rate of progress to conclude that its goals provide for reasonable progress. ADEQ needs to consider the four statutory factors required under 40 CFR 51.308(d)(1)(i)(A) to evaluate the potential controls for sources or source categories that contribute to visibility impairment.

*Response:* As explained in our proposed rulemaking and elsewhere in our response to comments, Arkansas's lack of consideration of the four statutory factors required under the RHR is the grounds for our disapproval of Arkansas's RPGs.

*Comment:* The EPA should disapprove Arkansas's LTS as well as the reasonable progress analysis because Arkansas's point source emissions of SO<sub>2</sub>, the major pollutant contributing to visibility impairment in Arkansas's Class I area, are projected to increase instead of decreasing between 2002 and 2018. Source apportionment modeling by the CENRAP indicates that Arkansas's contribution to sulfate in Class I areas is projected to increase as contributions from surrounding states are projected to decrease. This is in contradiction to 40 CFR 51.308(d)(3)(ii) which requires that the State demonstrate that it has included in its implementation plan all measures necessary to obtain its share of the emissions reductions needed to meet the progress goal for the area.

*Response:* We agree that Arkansas's point source SO<sub>2</sub> emissions are projected to increase instead of decreasing between 2002 and 2018, and that the CENRAP modeling indicates that Arkansas's contribution to sulfate in class I areas is projected to increase as contributions from surrounding states

<sup>89</sup> CAA section 169A(b)(2)(B).

<sup>90</sup> 40 CFR 51.308(d)(3).

<sup>91</sup> 40 CFR 51.308(d)(3)(v).



are projected to decrease. However, we disagree that this is in contradiction with our proposed finding that the Arkansas RH SIP satisfies the requirements of 40 CFR 51.308(d)(3)(ii). The full reference to 40 CFR 51.308(d)(3)(ii) is the following:

“Where other States cause or contribute to impairment in a mandatory Class I Federal area, the State must demonstrate that it has included in its implementation plan all measures necessary to obtain its share of the emissions reductions needed to meet the progress goals for the area. If the State has participated in a regional planning process, the State must ensure that it has included all measures needed to achieve its apportionment of emission reduction obligations agreed upon through that process.”<sup>92</sup>

A state can meet the requirements under 40 CFR 51.308(d)(3)(ii) if when establishing its LTS, the state can demonstrate that it has included in its RH SIP all measures necessary to obtain its share of the emissions reductions needed to meet the progress goals. This means that if a state participates in a regional planning process, the state must ensure that the RH SIP includes all agreed upon measures needed to achieve its apportionment of emission reduction obligations. Arkansas met part of this requirement by participating in a regional planning process and consulting with other states that cause or contribute to impairment at Arkansas’s Class I areas, with the participating states arriving at a consensus with regard to each states’ apportionment of emissions reduction obligations. Arkansas’s RH SIP includes the regional planning process but those emission reductions agreed to by all states in the consultation meetings will not be met by Arkansas because the reductions from the BART determinations we are disapproving will not be realized. This is consistent with 40 CFR 51.308(d)(3)(ii). As explained in our proposed rulemaking on the Arkansas RH SIP, we are finding that Arkansas satisfied its consultation requirements when establishing its LTS.<sup>93</sup>

*Comment:* The EPA’s proposed disapproval of Arkansas’s RPGs is not consistent with its own guidance, treads on the State’s authority under the CAA, and disregards the underlying purpose of the visibility protection program by criticizing the technical aspect of Arkansas’s evaluation even though EPA acknowledges that Arkansas’s SIP provides for a rate of visibility improvement that achieves the national

goal before the time contemplated by the program itself.

*Response:* The EPA disagrees that EPA’s disapproval of Arkansas’s RPGs is not consistent with its own guidance. EPA’s RPG Guidance states the following with regard to the statutory factors under 40 CFR 51.308(d)(1)(i)(A):

“The regional haze rule requires you to clearly support your RPG determination in your SIP submission based on the statutory factors.”<sup>94</sup>

As explained in more detail elsewhere in our response to comments, even if emission reductions anticipated from implementation of BART and other CAA programs during the initial planning period would result in a slightly greater rate of improvement in visibility than would be needed to attain the URP, the State must still consider the four statutory factors in setting its RPGs.

EPA also disagrees with the commenter’s statement that EPA’s proposed disapproval of Arkansas’s RPGs treads on the state’s authority under the CAA. The CAA requires that in determining reasonable progress, states should take into consideration the costs of compliance, the time necessary for compliance, and the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any existing source subject to such requirements.<sup>95</sup> Since the State has not taken into consideration these four factors, EPA’s disapproval of Arkansas’s RPGs is in accordance with the CAA. While we do recognize that the CENRAP’s modeling demonstrates that Arkansas is projected to meet the URP for the first implementation period ending in 2018 for both of its Class I areas, we emphasize that we cannot approve Arkansas’s RPGs because in setting its RPGs the State did not satisfy the requirements of the CAA § 169A(g)(1), the RHR,<sup>96</sup> and 40 CFR 51.308(d)(1)(i)(A).

*Comment:* With respect to establishment of RPGs, EPA has provided that the BART Rule does not require a definitive dv or percent improvement in visibility. All the BART Rule requires for each state is a demonstration of improvement of visibility. To that end, ADEQ did show in its RH SIP that there was a statistically significant improvement to visibility in the Class I areas modeled using the presumptive limits through

statistical analysis and photochemical modeling.

*Response:* It appears that the comment may have been referring to the RHR rather than the BART Rule, as it is the RHR that establishes the RPG requirements. While EPA agrees that the RHR does not require a definitive dv or percent improvement in visibility with respect to the establishment of RPGs,<sup>97</sup> we disagree that all the RHR requires in terms of RPGs is a demonstration of visibility improvement. The RHR requires that the RPGs provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period.<sup>98</sup> However, the RHR also establishes other analytical requirements states must satisfy in establishing their RPGs. Among these, is the requirement for states to consider the four statutory factors under 40 CFR 51.308(d)(1)(i)(A), which is a requirement that Arkansas has not satisfied.

*Comment:* The ADEQ acted consistently with the EPA’s RPG Guidance when it did not perform a four-factor analysis in establishing Arkansas’s RPGs. The RPG Guidance provides that if common sense dictates that a particular statutory factor cannot be applied to a particular source category (*i.e.* non-point sources), then the state’s analysis may reflect that, and emissions reductions from such sources may still be included in the SIP.

*Response:* The section of EPA’s RPG Guidance the comment refers to states that the guidance is primarily aimed at helping states apply the four statutory factors to point sources, and that EPA recognizes that even though states must look at all source categories affecting visibility when evaluating the four statutory factors, application of some of the statutory factors to certain non-point sources may not be practical.<sup>99</sup> The comment appears to imply that this section of EPA’s RPG Guidance supports the State’s decision not to conduct an evaluation of the four statutory factors. However, EPA’s RPG Guidance does not state, or in any way imply, that application of any of the statutory factors in considering control measures for point sources is not practical. On the contrary, EPA’s RPG Guidance clearly states that the guidance is mainly aimed

<sup>97</sup> 64 FR 35731.

<sup>98</sup> 64 FR 35734.

<sup>99</sup> See EPA’s Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), Section 1.2.

<sup>94</sup> See EPA’s Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), Section 2.4.

<sup>95</sup> CAA section 169A(g)(1).

<sup>96</sup> 64 FR 35731.

<sup>92</sup> 40 CFR 51.308(d)(3)(ii).

<sup>93</sup> 76 FR 64216.

at helping states apply the four statutory factors to point sources.

*Comment:* There is no requirement in the BART Rule for a state to adopt control measures that it does not consider necessary or reasonable when it can be shown that its RPGs represent a rate of progress that it and other affected states have found to be reasonable. The EPA's role in evaluating a state's RPGs is to assure that other affected states have been consulted and are satisfied that the RPGs are appropriate. In fact, Arkansas's Class I areas as well as Missouri's Class I areas are on the glidepath and are expected to meet the rate of progress goals for the first implementation period ending in 2018.

*Response:* While EPA agrees that the BART Rule does not require a state to adopt control measures under reasonable progress if the state determines that such control measures are not reasonable, EPA notes that the state must make the determination of whether those controls are reasonable or not through an evaluation of the four statutory factors. The RHR states the following:

"Today's final rule requires the States to determine the rate of progress for remedying existing impairment that is reasonable, taking into consideration the statutory factors, and informed by input from all stakeholders."<sup>100</sup>

Arkansas has not considered the four statutory factors, and therefore, cannot make the claim that additional control measures are not reasonable. This is especially troublesome in light of the fact that there are sources in Arkansas not subject to BART which impair visibility by more than 0.5 dv, as explained in more detail in our proposed rulemaking. While EPA agrees that one of EPA's roles in evaluating a state's RPGs is to assure that other affected states have been consulted and agree with the RPGs the state has established,<sup>101</sup> EPA notes that our role is not limited to just that. The RH regulations state the following:

"In determining whether the State's goal for visibility improvement provides for reasonable progress towards natural visibility conditions, the Administrator will evaluate the demonstrations developed by the State pursuant to paragraphs d(1)(i) and (d)(1)(ii) of this section."<sup>102</sup>

Among the demonstrations the state is required to develop pursuant to 40 CFR 51.308(d)(1)(i) is an evaluation of the four statutory factors. As such, EPA's role in evaluating a state's RPGs is not limited to ensuring that other affected

states have been consulted and agree that the state's RPGs are appropriate.

With regard to the comment that Arkansas Class I areas as well as Missouri's Class I areas are on the "glidepath," EPA notes that even if a state is projected to meet the URP for its Class I areas during the first implementation period ending in 2018, this is not a safe harbor from more stringent regulation. The RHR requires states to calculate the URP and determine what control measures would be needed to achieve this amount of progress during the first implementation period and to determine whether those measures are reasonable based on an evaluation of the four statutory factors.<sup>103</sup> The RHR states the following:

"If the State determines that the amount of progress identified through the analysis is reasonable based upon the statutory factors, the State should identify this amount of progress as its reasonable progress goal for the first long-term strategy, unless it determines that additional progress beyond this amount is also reasonable. If the State determines that additional progress is reasonable based on the statutory factors, the State should adopt that amount of progress as its goal for the first long-term strategy."<sup>104</sup>

As such, being on the "glidepath" does not mean a state is allowed to forego an evaluation of the four statutory factors when establishing its RPGs. Based on an evaluation of the four statutory factors, states may determine that RPGs that provide for a greater rate of visibility improvement than would be achieved with the URP for the first implementation period are reasonable.

*Comment:* The EPA's statement in its proposed rulemaking that Arkansas's RH SIP fails to ensure adequate reasonable progress toward meeting the national visibility goal without Arkansas conducting additional analysis is not supported by the record. The EPA admits that under Arkansas's RPGs, natural visibility conditions will be obtained in 2062 for Caney Creek and 2063 for Upper Buffalo. Based on modeling approved by EPA, Arkansas will meet the visibility goals as set out in the RHR prior to the target date of 2064. Therefore, the EPA's position that Arkansas must undertake additional analysis even though Arkansas's proposed RPGs provide a greater rate of improvement in visibility to attain URP is incorrect and is an attempt to step on the state's authority.

*Response:* The EPA notes that the RHR requires states to determine what constitutes reasonable progress by,

among other things, consideration of the four statutory factors. The RHR states that the determination of what constitutes reasonable progress can only be made once the necessary technical analyses of emissions, air quality, and the reasonable progress factors have been conducted.<sup>105</sup>

While in our proposed rulemaking we noted that Arkansas calculated that under its RPGs, it would attain natural visibility conditions in 2062 for Caney Creek and 2063 for Upper Buffalo, we would like to clarify that such calculation assumes that Arkansas would be able to achieve the rate of improvement reflected by the RPGs for the first implementation period ending in 2018, and each implementation period thereafter. The RHR states the following:

"Once a State has adopted a reasonable progress goal and determined what progress will be made toward that goal over a 10-year period, the goal itself is not enforceable. All that is 'enforceable' is the set of control measures which the State has adopted to meet that goal. If the State's strategies have been implemented but the State has not met its reasonable progress goal, the State could either: (1) Revise its strategies in the SIP for the next long-term strategy period to meet its goal, or (2) revise the reasonable progress goals for the next implementation period. In either case, the State would be required to base its decisions on appropriate analyses of the statutory factors included in 40 CFR 51.308(d)(1)(i)(A) and (B) of the final rule."<sup>106</sup>

As such, there is no certainty that the State will achieve its RPGs for the first implementation period ending in 2018, let alone for each implementation period thereafter. With regard to the comment that the modeling approved by EPA shows that Arkansas will meet the visibility goals as set out in the RHR prior to the target date of 2064, EPA notes that the CENRAP modeled the projected visibility conditions anticipated at each Class I area in 2018. The CENRAP modeling is based on emissions reductions expected to result from Federal, State, and local control programs that are either currently in effect or with mandated future-year emission reduction schedules that predate 2018. The CENRAP modeling itself did not show that Arkansas will meet the visibility goals as set out in the RHR prior to 2064. Rather, the rate of visibility improvement anticipated by the CENRAP modeling projections for 2018, *if sustained*, will result in a return to natural visibility prior to 2064. This assumes that the same level of reduction of visibility impairment that is expected

<sup>100</sup> 64 FR 35731.

<sup>101</sup> 40 CFR 51.308(d)(1)(iv).

<sup>102</sup> 40 CFR 51.308(d)(1)(iii).

<sup>103</sup> 64 FR 35732.

<sup>104</sup> 64 FR 35732.

<sup>105</sup> 64 FR 35721.

<sup>106</sup> 64 FR 35733.

to occur during the first implementation period ending in 2018 will occur during each implementation period until the final implementation period ending in 2064. However, there is no guarantee that this will in fact occur.

As explained in our proposed rulemaking on the Arkansas RH SIP, in establishing its RPGs, the State is required by CAA § 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A) to consider the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected sources, and include a demonstration showing how these factors were taken into consideration in selecting the goal. An analysis of the four statutory factors is precisely the "additional analysis" EPA refers to in its proposed rulemaking on the Arkansas RH SIP.<sup>107</sup> The RHR does not exempt states from evaluating the four statutory factors if their RPGs provide a greater rate of improvement in visibility to attain URP. Since Arkansas has not satisfied this requirement, EPA disagrees that our disapproval of Arkansas's RPGs is an attempt to step on the state's authority.

*Comment:* The EPA's reliance on disapproving the Arkansas LTS based on the disapproval of ADEQ's BART determinations is incorrect and not consistent with the RHR. Under the RHR, states must develop a LTS that includes emissions limitations, compliance schedules, and other measures as necessary to achieve the RPGs for Class I areas within a state. Arkansas's LTS complies with the RHR by demonstrating that Arkansas will meet the visibility goals as set out in the RHR prior to the date of 2064 and the LTS will help Arkansas achieve its RPGs. As such, Arkansas should be given the maximum deference in attaining those RPGs. In addition, ADEQ's BART determinations are sound and are in compliance with the RH program. Thus, the EPA should approve the portion of the Arkansas RH SIP pertaining to its LTS.

*Response:* With regard to the comment that EPA's reliance on disapproving Arkansas's LTS based on the disapproval of some of Arkansas's BART determinations is incorrect and inconsistent with the RHR, EPA clarifies that the basis for EPA's partial disapproval of the State's LTS is that the state did not properly consider emission limits and schedules for compliance to include in its LTS, as required pursuant to 40 CFR 51.308(d)(3)(v)(C). Since 40 CFR 51.308(d)(3)(v)(C) requires that in

developing its LTS, Arkansas consider emissions limitations and schedules of compliance to achieve the RPGs, the State included the BART emission limits it established for its subject to BART sources as part of the LTS. As explained in our proposed rulemaking, EPA disagrees that all of Arkansas's BART determinations are in compliance with the RHR. The BART emission limits established by Arkansas are an element of the LTS, and because we are disapproving a portion of Arkansas's BART determinations, it follows that the State did not properly consider emission limitations and schedules for compliance to include in its LTS, as required under 40 CFR 51.308(d)(3)(v)(C). Therefore, we cannot approve this element of the LTS. Furthermore, as raised by another comment, since Arkansas did not consider the four statutory factors under 40 CFR 51.308(d)(1)(i)(A) when establishing its RPGs, it is not possible to know, at this point, whether requiring additional controls for Arkansas source categories affecting visibility constitutes reasonable progress. This further supports our finding that Arkansas has not properly considered emission limitations and schedules for compliance in establishing its LTS, as required under 40 CFR 51.308(d)(3)(v)(C).

The comment suggests that if a state develops a LTS that is expected to achieve the state's RPGs and meet the national visibility goal prior to 2064, the state will have met the LTS requirements in the RHR. While EPA agrees that the RHR requires states to develop a LTS that includes emissions limitations, compliance schedules, and other measures as necessary to achieve the RPGs established by states having mandatory Class I areas,<sup>108</sup> EPA notes that the RHR establishes several requirements a state must satisfy when establishing its LTS.<sup>109</sup> Among these is the requirement for states to consider, at a minimum, the seven factors under 40 CFR 51.308(d)(3)(v). As explained above, one of the factors states are required to consider is emission limitations and schedules for compliance to include in the LTS.<sup>110</sup> Arkansas has not properly considered this factor. Furthermore, as already explained above, Arkansas did not establish RPGs in accordance with the RHR and CAA requirements. As such, EPA cannot approve those RPGs. Therefore, Arkansas has not demonstrated that its LTS includes

enforceable emissions limitations and compliance schedules, as necessary to achieve reasonable progress. EPA cannot fully approve Arkansas's LTS.

*Comment:* Despite the fact that the CENRAP's modeling for the year 2018 shows a significant improvement in visibility at Caney Creek and Upper Buffalo (3.88 dv and 3.75 dv, respectively), the available emissions data that was used to conduct this modeling suggests something different. This emissions data shows that SO<sub>2</sub> emissions from EGUs in Arkansas are projected to increase by roughly 35,000 tons per year (tpy) between 2002 and 2018. While non-EGU point source emissions of SO<sub>2</sub> in Arkansas are projected to decrease by 2018, overall point source emissions of SO<sub>2</sub> (EGU plus non-EGU emissions) in Arkansas are projected to increase by roughly 15,000 tpy. When emissions from all sources of SO<sub>2</sub> in Arkansas are summed together (point sources, onroad sources, and area sources), SO<sub>2</sub> emissions in 2018 are projected to be higher than 2002 levels.

NO<sub>x</sub> emissions from non-EGUs are projected to be 25% higher in 2018 compared to 2002 levels. Even though NO<sub>x</sub> emissions from non-EGUs are projected to decrease between 2002 and 2018, overall point source NO<sub>x</sub> emissions (non-EGUs plus EGUs) are projected to increase in 2018 from 2002 levels. When emissions from all sources of NO<sub>x</sub> in Arkansas are summed together (point sources, onroad sources, and area sources), NO<sub>x</sub> emissions in 2018 are projected to be lower than 2002 levels, but most of these emissions reductions are from onroad sources in Arkansas. Also, 2018 emissions of PM<sub>2.5</sub>, PM<sub>10</sub>, and ammonia (NH<sub>3</sub>) from Arkansas sources were also projected to increase somewhat compared to 2002 levels. Considering that sulfates are the significant contributor to visibility impairment at both Arkansas Class I areas on the majority of the 20% worst days, it is difficult to understand how the CENRAP 2018 modeling showed such a significant improvement in visibility when SO<sub>2</sub> emissions from Arkansas are projected to increase between 2002 and 2018.

EPA also indicated that there is an under-prediction bias in the model that must be considered when examining source apportionment results for sulfate. Given that the 2018 modeling reflects a low bias in the projection of visibility impacts due to sulfates, that there are significant projected increases in SO<sub>2</sub> emissions from Arkansas point sources in 2018, and that the 2018 point source emissions from NO<sub>x</sub> and other visibility impairing pollutants are also projected

<sup>108</sup> 40 CFR 1.308(d)(3).

<sup>109</sup> 64 FR 35734.

<sup>110</sup> 40 CFR 1.308(d)(3)(v)(C).

to be higher than 2002 emissions, the 2018 CENRAP modeling is questionable.

As discussed by EPA in Appendix A to its TSD for its proposed rulemaking on the Arkansas RH SIP, it appears that the bulk of the projected visibility improvement in 2018 in Arkansas's Class I areas may be based on projected emissions reductions from sources in Texas. However, Texas has acknowledged uncertainties in its 2018 emissions projections, and that the Texas emissions inventory is based on the Integrated Planning Model (IPM) Version 2.19, whereas other planning organizations used version 3.0 of the IPM, which EPA has indicated provides "significantly more accurate prediction of future EGU operating scenarios and emissions" (see Exhibit 21). Texas also stated that the IPM Version 2.19 used by the CENRAP projected approximately 14% increase in coal/lignite-fired generating capacity and a 32% increase in gas-fired capacity in Texas, whereas the Electric Reliability Council of Texas (ERCOT) predicted a greater percentage of growth in coal/lignite-fired generating capacity than natural gas-fired capacity (see Exhibit 21). Given the uncertainty in Texas' 2018 emission projections and that the 2018 modeling may under-predict visibility impacts from sulfates, Arkansas should not be allowed to forego performing an analysis of measures that would enable the state to ensure reasonable progress towards reaching natural background visibility conditions at the State's Class I areas. EPA must disapprove the Arkansas RH SIP for failure to include a four-factor analysis of reasonable progress milestones for the State's Class I areas. As part of a four-factor analysis of reasonable progress goals, Arkansas should evaluate emission control strategies that can be implemented to reduce Arkansas's share of visibility-impairing pollution.

*Response:* The EPA agrees that SO<sub>2</sub> emissions from EGUs in Arkansas are projected to increase considerably between 2002 and 2018, that overall point source emissions of SO<sub>2</sub> (*i.e.* EGU plus non-EGU emissions) in Arkansas are projected to increase by roughly 15,000 tpy, and that total SO<sub>2</sub> emissions in Arkansas (*i.e.* point sources, onroad sources, and area sources combined) are projected to increase between 2002 and 2018. We also agree that even though total NO<sub>x</sub> emissions in Arkansas (*i.e.* point sources, onroad sources, and area sources combined) are projected to decrease in 2018 from 2002 levels, most of these emissions reductions are from onroad sources in Arkansas. As discussed in Appendix A of the TSD for our proposed action on the Arkansas RH

SIP, we agree that the modeling demonstrates that most of the projected visibility improvement in 2018 in Caney Creek appears to be based on projected emissions reductions from sources in Texas and that Texas has acknowledged that there are uncertainties in its 2018 emissions projections. Consistent with the points raised in the comment, we are disapproving Arkansas's RPGs for Caney Creek and Upper Buffalo. As discussed in our proposed rulemaking and in our response to previous comments, Arkansas must evaluate the four statutory factors when establishing its RPGs. As part of its evaluation of the four statutory factors Arkansas must determine what (if any) level of control is reasonable to require sources in Arkansas to comply with to achieve reasonable progress at Arkansas's Class I areas.

### C. Comments on BART

#### 1. Evaluation of the Most Stringent Level of Control in the BART Analysis

*Comment:* The EPA pointed out that Entergy White Bluff did not evaluate the most stringent level of control achievable in that it did not evaluate emission limits lower than the presumptive SO<sub>2</sub> BART emission limit of 0.15 lb/MMBtu for either a wet or a dry scrubber, but EPA did not mention that both wet and dry scrubbers can achieve greater than the control efficiencies assumed in the White Bluff analysis (*i.e.* greater than 95% control with a wet scrubber, and greater than 92% control with a dry scrubber). EPA pointed out that SO<sub>2</sub> emission rates as low as 0.065 lb/MMBtu have been documented with installation of dry scrubbers. EPA recently proposed a FIP requiring the installation of dry scrubbers as BART at six coal-fired EGUs in Oklahoma, to achieve the SO<sub>2</sub> BART emission limit of 0.06 lb/MMBtu on a 30-day rolling average basis (76 FR 16187–188, 16193–194). These units burn similar low sulfur coal as that primarily burned at the Entergy White Bluff Units 1 and 2. A limit of 0.06–0.065 lb/MMBtu would reflect 92.2% to 92.8% removal from the highest SO<sub>2</sub> rate identified by Entergy during the base case of 0.83 lb/MMBtu. Therefore, SO<sub>2</sub> emission rates much lower than 0.15 lb/MMBtu should be achievable with the installation of a wet scrubber or a dry scrubber/baghouse at White Bluff Units 1 and 2. Wet scrubbers can achieve 98–99% SO<sub>2</sub> removal and dry scrubbers can achieve 95% SO<sub>2</sub> removal (see Exhibits 17, 17A, 17B, 17C, and 17D). An October 2008 Sargent & Lundy study of SO<sub>2</sub> control technologies for White Bluff makes clear that dry

scrubbers are capable of 95% removal efficiency, and wet scrubbers are capable of 95–99% removal efficiency (see Exhibit 16). This study also indicates that the typical Powder River Basin coal SO<sub>2</sub> emission rates expected from wet scrubbers ranges from 0.03 to 0.10 lb/MMBtu, and for dry scrubbers ranges from 0.06 to 0.12 lb/MMBtu. Therefore, EPA should require consideration of emission limits more stringent than ADEQ's proposed SO<sub>2</sub> BART limit of 0.15 lb/MMBtu.

*Response:* The EPA agrees that wet scrubbers for control of SO<sub>2</sub> emissions have been demonstrated to achieve as high as 98–99% removal efficiency, while dry scrubbers have been demonstrated to achieve as high as 95% removal efficiency. SO<sub>2</sub> emission rates much lower than 0.15 lbs/MMBtu are achievable at Entergy White Bluff Units 1 and 2 with the installation of a wet or dry scrubber. This is consistent with our proposed rulemaking on the Arkansas RH SIP, in which we noted that the 0.15 lb/MMBtu presumptive SO<sub>2</sub> limit the State established for both the bituminous and sub-bituminous coal firing scenarios for White Bluff Units 1 and 2 corresponds to 82% control removal of the wet scrubber at Unit 1 and 80% control removal of the wet scrubber at Unit 2, while such controls are capable of a higher control efficiency.<sup>111</sup> EPA's proposed rulemaking proposed to disapprove the State's determination that SO<sub>2</sub> BART for White Bluff Units 1 and 2 is the presumptive limit of 0.15 lb/MMBtu for both the sub-bituminous and bituminous coal firing scenarios, as the State is required to evaluate the cost and visibility impact of operating controls at the maximum control efficiency achievable (*i.e.* to achieve the most stringent emission limit capable of being achieved by those controls).<sup>112,113</sup>

*Comment:* A study conducted by Babcock & Wilcox at tangentially-fired units burning sub-bituminous Powder River Basin coal showed NO<sub>x</sub> emission rates with ultra low NO<sub>x</sub> burners and overfire air that were generally less than 0.13 lb/MMBtu (see Exhibit 17F). The proposed NO<sub>x</sub> limits for White Bluff Units 1 and 2 of 0.15 lb/MMBtu when burning sub-bituminous coal and 0.28 lb/MMBtu when burning bituminous coal do not reflect the capability of the state of the art low NO<sub>x</sub> burners and overfire air. Also, since the White Bluff Units 1 and 2 burn primarily sub-bituminous coal, EPA's presumptive BART limit for sub-bituminous coal

<sup>111</sup> 76 FR 64206.

<sup>112</sup> 64 FR 35740.

<sup>113</sup> 76 FR 64206.

(and not for bituminous coal) should be evaluated. The BART Guidelines do not provide for prorating the presumptive BART limits based on the percentages of each coal burned. Presumptive limits should be defined by the coal type predominantly burned by the White Bluff units and BART must be based on the coal the units have historically burned, not on the type of coal that might be used in the future.

*Response:* The EPA agrees that the NO<sub>x</sub> limits adopted by the State of 0.15 lb/MMBtu when burning sub-bituminous coal and 0.28 lb/MMBtu when burning bituminous coal for White Bluff Units 1 and 2 do not reflect the capability of the state of the art low NO<sub>x</sub> burners and overfire air.

In addition, the BART Rule and the BART Guidelines do not specify whether a state can make separate BART determinations for each type of fuel burned by a given source. This should not be interpreted to mean that a state is not allowed to make separate BART determinations for each fuel type burned by a given source. The CAA and BART Rule give states broad authority in making BART determinations. Accordingly, States may determine it is appropriate to make BART determinations for each type of fuel burned by a given source. EPA acknowledges that the BART Guidelines do not specifically mention whether or not states can prorate the presumptive BART limits based on the percentages of each coal burned. However, if a source has a history of burning more than one type of fuel, then the BART determination must either be based on the fuel resulting in the greatest amount of emissions or the State must consider BART for each fuel type.

*Comment:* BART is not the maximum feasible technology but only the technology that is appropriate as determined by the state in weighing the public interest factors. EPA is incorrect in its assertion that the BART Guidelines require consideration of the most stringent control technology in the BART analysis. The EPA is going beyond the scope of the CAA by proposing that BART analysis requires identification and evaluation of the maximum control technology available when the state conducts BART evaluations.

*Response:* The EPA agrees that BART is not defined as the “maximum feasible technology.” However, EPA disagrees that EPA is going beyond the scope of the CAA by stating that states must evaluate the most stringent controls available in their BART evaluations. The BART Guidelines explicitly require consideration of the most stringent

control technology in the BART analysis. The CAA states the following:

“[I]n determining best available retrofit technology the State (or the Administrator in determining emission limitations which reflect such technology) shall take into consideration the costs of compliance, the energy and non-air quality environmental impacts of compliance, any existing pollution control technology in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology \* \* \*”<sup>114</sup>

In accordance with the CAA, EPA promulgated the BART Rule and the BART Guidelines to clarify the requirements of the RHR’s BART provisions. The BART Guidelines provide the following:

“In identifying “all” options, you must identify the most stringent option and a reasonable set of options for analysis that reflects a comprehensive list of available technologies. It is not necessary to list all permutations of available control levels that exist for a given technology—the list is complete if it includes the maximum level of control each technology is capable of achieving.”<sup>115</sup>

Furthermore, the RH regulations define BART as the best system of continuous emission control technology available and associated emission reductions achievable, as determined through an evaluation of the five statutory factors.<sup>116</sup> As explained in our proposed rulemaking on the Arkansas RH SIP, the RHR states that since recent retrofits at existing sources provide a good indication of the current “best system” for controlling emissions, these controls must be considered in the BART analysis.<sup>117 118</sup> EPA’s proposed rulemaking also explains that the RHR provides that in establishing source specific BART emission limits, a state’s BART analysis must identify and consider the maximum level of emission reduction that has been achieved in other recent retrofits at existing sources in the source category.<sup>119 120</sup>

## 2. Evaluation of Post-Combustion Controls in the BART Analysis

*Comment:* We agree with EPA’s proposal that the White Bluff Units 1 and 2 BART analysis for NO<sub>x</sub> in the Arkansas RH SIP only evaluated options to comply with the presumptive BART limits and the company failed to

evaluate add-on NO<sub>x</sub> controls such as SCR and SNCR. NO<sub>x</sub> emission limits as low as 0.05 lb/MMBtu, achieved by the installation of SCR, have been promulgated as BART limits for EGUs such as the San Juan power plant in New Mexico (76 FR 52390, 52439). SCR along with combustion controls are routinely required as BACT today for proposed new coal-fired power plants. SCR along with combustion controls have also been required as BART or to meet RH progress goals at several coal fired power plants, including the Boswell Energy Center Unit 3 and the Alan S. King Unit 1 facility in Minnesota (see Minnesota Air Pollution Control Agency revised draft RH SIP, July 2009); Naughton Unit 3 and Jim Bridger Units 3 and 4 in Wyoming (see Wyoming draft RH SIP, January 2011); San Juan Units 1–4 (see 76 FR 52388); Four Corners Units 1–5 (See 75 FR 64230); and Big Stone Unit 1 (see EPA’s November 29, 2011 proposed rulemaking on the South Dakota RH SIP). Installation of SCR along with combustion controls has been found to be cost-effective both in BART and BACT determinations, with costs ranging from approximately \$4200/ton NO<sub>x</sub> removed all the way up to \$21,000/ton NO<sub>x</sub> removed (see Exhibit 17, 17H, 17I, 17J, and 17K). According to data compiled by the National Parks Service, the cost effectiveness of SCR controls at units required to install such controls to meet RH requirements has ranged from \$2,200 to \$4,300/ton NO<sub>x</sub> removed (see Exhibit 19). White Bluff would greatly reduce NO<sub>x</sub> emissions beyond that achieved by the combustion controls proposed as BART if it were to install SCRs as BART at each unit. If SCR had been evaluated as BART at White Bluff Units 1 and 2, NO<sub>x</sub> emissions would have been 78% lower when the units burn sub-bituminous coal and 82% lower when the units burn bituminous coal. Based on testimony before the Arkansas Public Service Commission, Entergy appears to be planning to install SCR at both units at some point in the near future (see Exhibit 17L). Entergy’s NO<sub>x</sub> BART analysis for White Bluff cannot be considered complete without an evaluation of combustion controls plus SCR.

*Response:* The EPA agrees that installation and operation of SCR as BART could potentially result in the reduction of NO<sub>x</sub> emissions beyond that achieved by operation of the combustion controls proposed by the State as BART for White Bluff Units 1 and 2. EPA also agrees that the State must evaluate SCR controls when it evaluates what is BART for Entergy

<sup>114</sup> CAA section 169A(g)(2).

<sup>115</sup> Appendix Y to Part 41, section IV.D.

<sup>116</sup> 40 CFR 51.308(e)(1)(ii)(A).

<sup>117</sup> 64 FR 35740.

<sup>118</sup> 76 FR 64202.

<sup>119</sup> 64 FR 35740.

<sup>120</sup> 76 FR 64202.

White Bluff Units 1 and 2. As explained elsewhere in this final rulemaking, we are finalizing our proposed disapproval of the State's NO<sub>x</sub> BART determination (bituminous and sub-bituminous coal firing scenarios) for White Bluff Units 1 and 2.

*Comment:* Since EPA explicitly did not evaluate post combustion controls in establishing presumptive limits for EGUs that burn coal and do not have existing post-combustion controls for NO<sub>x</sub> in the BART Guidelines, post combustion controls should not be required to be evaluated as part of Arkansas's NO<sub>x</sub> BART evaluations of Entergy's White Bluff facility. In addition, since EPA explicitly did not evaluate post combustion technology when establishing presumptive limits for boilers other than cyclone units in the BART Guidelines, post combustion controls should not be required to be evaluated as part of the Arkansas BART evaluations for Lake Catherine facility.

*Response:* The EPA agrees that we did not evaluate post-combustion controls in providing NO<sub>x</sub> presumptive emission limits for EGUs that burn coal and have no existing post-combustion controls. The EPA also points out the BART Guidelines did not provide presumptive limits for oil-fired units such as Entergy Lake Catherine Unit 4. This does not mean that Arkansas may forego an evaluation of post-combustion controls in its NO<sub>x</sub> BART analyses for Entergy White Bluff Units 1 and 2 and Lake Catherine Unit 4. As stated in our proposed rulemaking on the Arkansas RH SIP, the purpose of the presumptive limits in the BART Guidelines was to identify controls that the Agency considered to be generally cost-effective across all affected units.<sup>121</sup> Because EPA's extensive analysis found that these controls are generally cost-effective across all affected units and were anticipated to result in a substantial degree of visibility improvement, EPA concluded that such affected units should at least meet the presumptive limits unless the state finds that a more or less stringent emission limit is BART based on a consideration of the five statutory factors. EPA's intent was for these generally cost-effective controls to be used in the State's BART analysis considering the five factors specified in CAA section 169A(g)(2), and considering the level of control that is currently achievable at the time that the BART analysis is being conducted.

Further, in the BART Rule, EPA justified its decision not to establish presumptive NO<sub>x</sub> limits based on the

use of SCR for units other than cyclone units, stating the following:

"For other units, we are not establishing presumptive limits based on the installation of SCR. Although States may in specific cases find that the use of SCR is appropriate, we have not determined that SCR is generally cost-effective for BART across unit types."<sup>122</sup>

As such, in the BART Guidelines, EPA simply concluded that it could not reach a generalized conclusion as to the appropriateness of more stringent controls (*i.e.* post-combustion controls) for coal-fired EGUs without existing post-combustion controls. Similarly, EPA concluded that it could not reach a generalized conclusion as to the appropriateness of providing presumptive limits based on the installation of SCR (or even combustion controls for that matter) for oil-fired units. This does not mean that states should not evaluate post-combustion NO<sub>x</sub> controls at affected sources. As explained elsewhere in this final rulemaking, in response to comments on the proposed BART Guidelines that the presumptive SO<sub>2</sub> EGU limits should be more stringent, EPA justified its decision to not provide more stringent presumptive emission limits by explaining that after considering the five statutory factors, States may find that a *more or less* stringent emission limit is BART [emphasis added].<sup>123</sup> Similar statements are made elsewhere in the BART Rule.

Furthermore, the RH regulations define BART as the best system of continuous emission control technology available and associated emission reductions achievable, as determined through an evaluation of the five statutory factors.<sup>124</sup> As explained in our proposed rulemaking on the Arkansas RH SIP, the RHR states that since recent retrofits at existing sources provide a good indication of the current "best system" for controlling emissions, these controls must be considered in the BART analysis.<sup>125 126</sup> EPA's proposed rulemaking also explains that the RHR provides that in establishing source specific BART emission limits, a state's BART analysis must identify and consider the maximum level of emission reduction that has been achieved in other recent retrofits at existing sources in the source category.<sup>127 128</sup> In most cases, the maximum level of emission reduction is achieved through the

installation and operation of post-combustion controls. Therefore, the State should evaluate post-combustion controls in its BART analysis for Entergy White Bluff Units 1 and 2.

*Comment:* The BART Guidelines indicate that States should only consider the installation of current combustion control technology on oil and gas-fired units. Therefore, EPA cannot disapprove BART determinations on the basis that post combustion control technology was not evaluated for Entergy's Lake Catherine Unit 4.

*Response:* The EPA disagrees that the BART Guidelines indicate that States should only consider the installation of current combustion control technology on oil and gas-fired units. The BART Guidelines state the following:

"For oil-fired and gas-fired EGUs larger than 200 MW, we believe that installation of current combustion control technology to control NO<sub>x</sub> is generally highly cost-effective and should be considered in your determination of BART for these sources."<sup>129</sup>

The context of the above statement is with regard to whether EPA believed a presumptive emissions limit is appropriate for gas fired and fuel oil fired EGUs. It was not intended to limit the consideration for BART for these sources to combustion controls only. The BART Guidelines should not be interpreted to mean that states should not consider NO<sub>x</sub> post-combustion controls in their BART analyses for gas fired and oil fired units. The RH regulations define BART as the best system of continuous emission control technology available and associated emission reductions achievable, as determined through an evaluation of the five statutory factors.<sup>130</sup> As explained in our proposed rulemaking on the Arkansas RH SIP, the RHR states that since recent retrofits at existing sources provide a good indication of the current "best system" for controlling emissions, these controls must be considered in the BART analysis.<sup>131 132</sup> EPA's proposed rulemaking also explains that the RHR provides that in establishing source specific BART emission limits, a state's BART analysis should identify and consider the maximum level of emission reduction that has been achieved in other recent retrofits at existing sources in the source category.<sup>133 134</sup> In most cases, the maximum level of emission reduction is achieved through the

<sup>122</sup> 70 FR 39136.

<sup>123</sup> 70 FR 39132.

<sup>124</sup> 40 CFR 51.308(e)(1)(ii)(A).

<sup>125</sup> 64 FR 35740.

<sup>126</sup> 76 FR 64202.

<sup>127</sup> 64 FR 35740.

<sup>128</sup> 76 FR 64202.

<sup>129</sup> Appendix Y to Part 51, section IV.E.4.

<sup>130</sup> 40 CFR 51.308(e)(1)(ii)(A).

<sup>131</sup> 64 FR 35740.

<sup>132</sup> 76 FR 64202.

<sup>133</sup> 64 FR 35740.

<sup>134</sup> 76 FR 64202.

<sup>121</sup> 76 FR 64201.

installation and operation of post-combustion controls. Therefore, the State must evaluate post-combustion control technology in its BART analysis for Entergy Lake Catherine Unit 4.

*Comment:* The EPA cannot disapprove the NO<sub>x</sub> BART determinations for the Domtar Ashdown Mill Power Boilers No. 1 and 2 for not evaluating SNCR. While SNCR has been installed on several industrial boilers similar to Domtar's Boilers, at the time that the BART evaluation was conducted, SNCR was not available. Even if you considered SNCR and a 50% reduction in emissions (the upper level of control expected with SNCR) less than 10 days of impacts greater than 0.5 dv would be eliminated. Thus, the cost of SNCR is not appropriate, especially considering Arkansas is already achieving progress toward the overall goal of the RH program.

*Response:* The BART Guidelines provide the following:

"In order to provide certainty in the process, all technologies should be considered if available before the close of the State's public comment period. You need not consider technologies that become available after this date. As part of your analysis, you should consider any technologies brought to your attention in public comments. If you disagree with public comments asserting that the technology is available, you should provide an explanation for the public record as to the basis for your conclusion."<sup>135</sup>

As pointed out in our proposed rulemaking on the Arkansas RH SIP, SNCR was available for industrial boilers similar to Domtar's boilers before the close of the State's public comment period.<sup>136</sup> As documented by Arkansas in Appendix 2.1 of its RH SIP, EPA provided comments to Arkansas on this matter on May 1, 2007. This was far in advance of the end of the State's public comment period. As documented in Appendix 2.1 of the Arkansas RH SIP, the State did not provide any form of response to EPA's comment, nor did the State evaluate operation and installation of SNCR at Domtar Ashdown Mill Power Boilers No. 1 and 2.

Since the State did not conduct modeling to evaluate the visibility impact of operation of SNCR at Domtar Power Boilers No. 1 and 2, it is not clear how one could reach a conclusion that SNCR would result in the elimination of less than 10 days of impacts greater than 0.5 dv. Furthermore, the RHR and BART Guidelines require states to consider all five statutory factors, and not just the visibility impact resulting from

operation of SNCR. The BART Rule states the following:

"[T]he degree of improvement in visibility which may reasonably be anticipated to result from the use of [BART]" is only one of five criteria that the State must consider together in making a BART determination."<sup>137</sup>

A proper evaluation of SNCR, through a consideration of the five statutory factors, may demonstrate that installation and operation of SNCR at Domtar Power Boilers 1 and 2 is cost-effective. As such, EPA cannot approve the State's NO<sub>x</sub> BART determinations for the Domtar Power Boilers No. 1 and 2.

*Comment:* The EPA is incorrect in stating that not all technically feasible options were considered and visibility impacts considered for the NO<sub>x</sub> BART determination for Domtar. Methane De-NO<sub>x</sub> (Mdn) is the only control technology deemed technically feasible for which modeling was not completed. The technical capability of Mdn is highly questionable. There is no reason to complete a modeling analysis for this option because it was cost prohibitive regardless of what visibility improvement may be gained from its use. Because of this, the decision was made to forgo the modeling. Such a decision is within ADEQ's discretionary authority to weigh the BART factors as they feel appropriate as spelled out in the BART Guidelines. This decision is reasonable since ADEQ is already achieving better than necessary progress towards attaining its visibility goals.

*Response:* The EPA stands by the statement made in its proposed rulemaking on the Arkansas RH SIP that not all technically feasible options were considered for the NO<sub>x</sub> BART determination for Domtar Power Boilers 1 and 2. As explained in our proposed rulemaking and elsewhere in our response to comments, Arkansas did not evaluate SNCR controls even though such NO<sub>x</sub> control is technically feasible, having been demonstrated at industrial boilers similar to Domtar Power Boilers No. 1 and 2 well in advance of the end of the State's public comment period for the Arkansas RH SIP.

EPA also stands by the statement made in its proposed rulemaking on the Arkansas RH SIP that the State did not evaluate the visibility impact of all technically feasible options. The preamble to the RHR states the following:

"We agree with commenters who asserted that the method for assessing BART controls

for existing sources should consider all of the statutory factors."<sup>138</sup>

The BART Guidelines also provide the following with regard to the selection of BART:

"You have discretion to determine the order in which you should evaluate control options for BART. Whatever the order in which you choose to evaluate options, you should always (1) display the options evaluated; (2) identify the average and incremental costs of each option; (3) consider the energy and non-air quality environmental impacts of each option; (4) consider the remaining useful life; and (5) consider the modeled visibility impacts."<sup>139</sup>

Therefore, in their BART evaluations, States must consider the visibility impact of a control option before eliminating it. In particular, for Domtar Power Boiler No. 1, for which the State determined that NO<sub>x</sub> BART is no additional controls (resulting in no emissions reductions or visibility improvement beyond baseline levels), an evaluation of all five statutory factors is necessary before the State can make the determination that no retrofit controls are available for Domtar Power Boiler No. 1.

The EPA disagrees with the comment that the decision to forego modeling the visibility impacts of Methane De-NO<sub>x</sub> (the only technically feasible control option the State identified for Domtar Power Boiler 1) is reasonable since ADEQ is already achieving better than necessary progress towards attaining its visibility goals. EPA would like to clarify that the State is not already achieving better than necessary progress towards attaining its visibility goals, as the commenter's statement is based on modeling projections based on emissions reductions resulting from BART and the implementation of other CAA requirements, and many of these emissions reductions have yet to take place. Furthermore, as explained in more detail in our proposed rulemaking on the Arkansas RH SIP and elsewhere in our response to comments, EPA is disapproving the State's RPGs because the State did not evaluate the four statutory factors under 40 CFR 51.308(d)(1)(i)(A). Therefore, the claim that Arkansas is already achieving better than necessary progress towards attaining its visibility goals cannot be made.

*Comment:* In addition to reducing visibility impairing regional haze, SCR systems can oxidize elemental mercury, making it easier to capture downstream in wet flue gas desulfurization (FGD) systems or PM collection devices.

<sup>135</sup> Appendix Y to Part 51, section IV.D.2.

<sup>136</sup> 76 FR 64209.

<sup>137</sup> 70 FR 39123.

<sup>138</sup> 70 FR 39131.

<sup>139</sup> Appendix Y to Part 51, section IV.E.2.

Industry improvements in SCR technology that would enhance mercury oxidation for all coal types are currently being developed. Significant mercury reductions would be a likely co-benefit if an SCR is coupled with a baghouse designed for state-of-the-art PM control.

*Response:* While EPA agrees that SCR technology coupled with a baghouse may result in significant reductions in mercury emissions, EPA notes that mercury is not considered a visibility impairing pollutant. As such, the control of mercury emissions is outside the scope of the RHR. However, if in evaluating control technologies for a BART pollutant for a given source, a state finds that two or more technologies (or combination of technologies) would have similar visibility benefits, the state may justify selection of one of the technologies on the basis of its non-air quality environmental benefits. For example, a state may justify selection of SCR technology coupled with a baghouse to control NO<sub>x</sub> emissions over a different control option on the basis that SCR coupled with a baghouse would result in less mercury emissions going into the soil or a nearby body of water. That being said, as explained in our proposed rulemaking on the Arkansas RH SIP and elsewhere in our response to comments, Arkansas must evaluate NO<sub>x</sub> post-combustion controls (*i.e.* SCR and SNCR) in its BART analyses for subject to BART sources.

*Comment:* SCR would remove up to 3,832 tpy NO<sub>x</sub> per unit at Entergy White Bluff beyond what the combustion controls currently proposed to meet BART would remove. Visibility in the Region's Class I areas would further be improved by the NO<sub>x</sub> emissions reductions achievable with combustion controls plus SCR at White Bluff Units 1 and 2, especially since, as EPA stated in its proposed rulemaking, a "considerable portion" of the visibility impairment in the Class I areas of Arkansas and Missouri is due to NO<sub>x</sub> emissions (76 FR 64207). According to EPA's AirData Web site, in 2002, the most recent year of emissions data in the AirData system, White Bluff was the largest industrial source of NO<sub>x</sub> emissions in the state. Therefore, it is necessary that a complete and proper evaluation of SCR and combustion controls be conducted to determine BART for White Bluff Units 1 and 2.

*Response:* Consistent with our proposed rulemaking on the Arkansas RH SIP and other responses to other comments, EPA agrees that the State must conduct a BART analysis that properly evaluates both combustion and post-combustion controls at Entergy White Bluff Units 1 and 2.

3. Comments on the State's PM BART Emission Limits We Proposed To Approve

*Comment:* BART is based on a five-factor analysis, and the requirement for a five-factor analysis stems from statutory and regulatory requirements regarding how BART is to be determined (see 40 CFR 51.308(e)(1)(ii)(A) and section 169A(g) of the CAA, 42 U.S.C. 7491(g)). A proper evaluation of BART for White Bluff Units 1 and 2 and Flint Creek Boiler No. 1 would have shown that each sources' existing PM limit does not reflect PM BART for the sources.

*Response:* In our review of the Arkansas RH SIP, we evaluated the determination by ADEQ that no additional PM controls were required at the AEP Flint Creek Boiler No. 1 or the Entergy White Bluff Units 1 and 2. For Flint Creek Boiler No. 1, ADEQ's determination was based on the pre-control modeling performed by ADEQ and on AEP SWEPSCO's statement that the PM visibility modeling did not "trip the BART impact threshold." We reviewed the pre-control modeling performed by ADEQ using the 24-hr actual maximum emissions from the baseline period. The modeling results in Appendix 9.2B of the Arkansas RH SIP and presented in Table 7-6 of Appendix A of the TSD,<sup>140</sup> indicate that PM contributes less than 0.5% of the total visibility impacts from Flint Creek Boiler No. 1 at all nearby Class I areas with the exception of Upper Buffalo. PM contributions to visibility impacts at Upper Buffalo from Flint Creek are less than 2% of the total visibility impairment at this Class I area. On the most impacted day at Upper Buffalo, modeling the 24-hr actual maximum emissions demonstrates that PM contributes only 0.07 dv of the total 3.781 dv modeled visibility impact from the source. Clearly, the most effective controls to address visibility impairment from the source are those that would reduce emissions of visibility impairing pollutants other than direct emissions of PM.

For White Bluff Units 1 and 2, we reviewed the data submitted by ADEQ, including pre-control modeling in Appendix 9.2B of the Arkansas RH SIP, to evaluate ADEQ and White Bluff's determination that the majority of visibility-causing emissions are due to emissions of NO<sub>x</sub> and SO<sub>2</sub>, and that no additional PM controls are warranted. The modeling results in Appendix 9.2B of the Arkansas RH SIP and presented in Table 7-7 of Appendix A of the TSD

for our proposed rulemaking, indicate that PM contributes less than 0.4% of the total visibility impacts at all nearby Class I areas. On the most impacted day at Caney Creek, modeling the 24-hr actual maximum emissions demonstrates that PM contributes only 0.03 dv of the more than 8 dv modeled visibility impact from the White Bluff Units 1 and 2. Clearly, the majority of visibility-causing emissions are due to emissions of NO<sub>x</sub> and SO<sub>2</sub> and the most effective controls to address visibility impairment from the units are those that would reduce emissions of NO<sub>x</sub> and SO<sub>2</sub> rather than direct emissions of PM.

As explained in our proposed rulemaking, in our evaluation for PM BART for these sources, we found that the visibility impact due to PM emissions alone is so minimal such that any additional PM controls could only result in very minimal visibility benefit that could not justify the cost of any upgrades and/or operational costs needed to operate the existing controls to achieve a more stringent emission limit. This is in keeping with the BART Rule, which provides the following:

"Consistent with the CAA and the implementing regulations, States can adopt a more streamlined approach to making BART determinations where appropriate. Although BART determinations are based on the totality of circumstances in a given situation, such as the distance of the source from a Class I area, the type and amount of pollutant at issue, and the availability and cost of controls, it is clear that in some situations, one or more factors will clearly suggest an outcome. Thus, for example, a State need not undertake an exhaustive analysis of a source's impact on visibility resulting from relatively minor emissions of a pollutant where it is clear that controls would be costly and any improvements in visibility resulting from reductions in emissions of that pollutant would be negligible. In a scenario, for example, where a source emits thousands of tons of SO<sub>2</sub> but less than one hundred tons of NO<sub>x</sub>, the State could easily conclude that requiring expensive controls to reduce NO<sub>x</sub> would not be appropriate."<sup>141</sup>

Therefore, we are approving the State's determination that PM BART for Flint Creek Boiler No. 1 and White Bluff Units 1 and 2 is the existing PM emission limit (*i.e.* no additional controls).

*Comment:* The EPA should not partially approve the State's BART determination for a given source for some pollutants and disapprove the BART determination for other pollutants without also concurrently promulgating BART requirements for the pollutants that have been disapproved. EPA should not approve

<sup>140</sup> These documents can be found in the docket associated with our final rulemaking.

<sup>141</sup> 70 FR 39116.



the PM BART controls for the AEP Flint Creek Power Plant, the Entergy White Bluff Power Plant, and the No. 1 Power Boiler of the Domtar Ashdown Mill before knowing what the SO<sub>2</sub> and NO<sub>x</sub> BART controls will be because the SO<sub>2</sub> or NO<sub>x</sub> controls determined to be BART may increase PM emissions or otherwise affect the PM BART determination.

*Response:* You cannot infer from the RHR that the disapproval of the BART determination for one pollutant at a given source requires disapproval of BART determinations for other pollutants at the same source. Each BART analysis for an individual visibility impairing pollutant is separate. As such, disapproval of the SO<sub>2</sub> or NO<sub>x</sub> BART determination does not affect the PM BART determination even though SO<sub>2</sub> and NO<sub>x</sub> are precursors to PM. This is because when the BART determination is conducted for PM, it is analyzed without taking in account whether BART controls for SO<sub>2</sub> or NO<sub>x</sub> are being adopted. As such, EPA may take action on the BART determinations for NO<sub>x</sub>, SO<sub>2</sub>, and PM for a given source in separate rulemaking actions. In addition, EPA may approve the BART determination for one pollutant for a given source while disapproving the BART determination for one or more pollutants at the same source. Therefore, EPA disagrees with the commenter that it cannot approve the PM BART determinations for the Flint Creek Boiler No. 1, the White Bluff Units 1 and 2, and the Domtar Ashdown Mill Power Boiler No. 1, and disapprove the SO<sub>2</sub> and NO<sub>x</sub> BART determinations for these sources without promulgating SO<sub>2</sub> and NO<sub>x</sub> BART determinations for these sources in the context of a FIP.

As explained in our proposed rulemaking and elsewhere in this final rulemaking, our disapproval begins a two year period after which if Arkansas has not provided a new SIP revision and EPA has approved that SIP revision correcting the deficiencies, EPA must promulgate a FIP. If in conducting the BART analyses for NO<sub>x</sub> and SO<sub>2</sub>, Arkansas, or EPA in the context of a FIP, determines that direct emissions of PM will increase because of the implementation of certain control technologies, the BART PM limit can be re-evaluated at that time and balanced against the potential visibility improvements from the reductions of the other pollutants.

*Comment:* In the testimony for a permit proceeding, Entergy's primary contractor for engineering and procurement of its BART controls showed that PM emission rates much lower than 0.1 lb/MMBtu could be met

with either a wet scrubber or with a dry scrubber and a baghouse installed at the Entergy White Bluff Units 1 and 2 (see Exhibits 12 and 16). Entergy's contractor indicated that if a dry scrubber and baghouse were installed at White Bluff Units 1 and 2, the baghouse would be designed to lower the PM emissions to 0.012 lb/MMBtu, giving an advantage of the dry scrubber over the wet scrubber. Since the selection of the SO<sub>2</sub> scrubber (wet vs. dry) will have an impact on the PM emissions rate that will be achievable at the White Bluff units, EPA should not take any action on PM BART for White Bluff until the SO<sub>2</sub> controls to meet BART are known.

*Response:* The comment points out that in the testimony for a permit proceeding before the Arkansas Public Service Commission,<sup>142</sup> Entergy's contractor indicated that if a dry scrubber and baghouse are installed at the Entergy White Bluff Units 1 and 2, the baghouse would be designed to lower the PM emissions to an emission rate of 0.012 lb/MMBtu.<sup>143</sup> However, it has also been brought to EPA's attention that Entergy White Bluff has since canceled the proceeding before the Arkansas Public Service Commission to obtain a declaratory order approving the installation of those controls. Furthermore, the State has not submitted to EPA a revision to the RH SIP EPA received on September 23, 2008, August 3, 2010, and supplemented on September 7, 2011. As far as EPA is aware, the State has not adopted revisions to the Arkansas RH SIP with respect to BART for SO<sub>2</sub> for Entergy White Bluff Units 1 and 2 based on the proceeding before the Arkansas Public Service Commission. Therefore, what is before EPA is the Arkansas RH SIP submitted to EPA on September 23, 2008 August 3, 2010, and supplemented on September 7, 2011, which does not include installation of a dry scrubber and baghouse for control of SO<sub>2</sub> at White Bluff Units 1 and 2. As explained elsewhere in our response to comments, the RHR states that the BART determinations are made on a individual pollutant specific basis and this analysis is separate from the BART determinations for other pollutants at the same source. Therefore, EPA disagrees that it should not take action on PM BART for White Bluff Units 1

<sup>142</sup> The Arkansas Public Service Commission is an appointed executive board in the Arkansas state government. The commission is responsible for regulating the rates and services of Arkansas's electricity, natural gas, water, phone, and pipeline safety utilities.

<sup>143</sup> See Exhibit 12 to Sierra Club's comment letter to EPA, found in the docket for this rulemaking action.

and 2 until the SO<sub>2</sub> controls to meet BART are known.

Our approval of the limit for direct PM emissions was based on the extremely low modeled visibility impact from these emissions. While reductions in PM may occur from future controls necessary to meet SO<sub>2</sub> BART, these PM reductions are not necessary to meet BART for PM.

*Comment:* The EPA's BART Guidelines specify that BART should be evaluated and defined for both PM<sub>10</sub> and PM<sub>2.5</sub> (see 40 CFR part 51, appendix Y, section IV.A.). However, with the exception of the oil-firing scenario for Lake Catherine Unit 4, ADEQ did not adopt BART limits for PM<sub>2.5</sub>, yet EPA did not identify this as a deficiency. EPA must disapprove the PM/PM<sub>10</sub> BART limits in the Arkansas RH SIP along with disapproving the RH SIP for the lack of BART limits for PM<sub>2.5</sub>.

*Response:* The BART Guidelines do not specify that states must make BART determinations for PM<sub>2.5</sub>. The BART Guidelines provide the following:

"You must look at SO<sub>2</sub>, NO<sub>x</sub>, and direct particulate matter (PM) emissions in determining whether sources cause or contribute to visibility impairment, including both PM<sub>10</sub> and PM<sub>2.5</sub>."<sup>144</sup>

This language in the BART Guidelines was meant to clarify that when a state is making a BART determination as to whether a source is subject to BART, the modeling evaluation to determine the source's impact on visibility has to account for both PM<sub>10</sub> and PM<sub>2.5</sub> emissions. There are several instances in which we state in both the preamble to the RHR, and in the BART Guidelines that PM<sub>10</sub> may be used as indicator for PM<sub>2.5</sub> in determining whether a source is subject to BART. However, neither the RHR nor the BART Guideline specify that states must set separate BART limits for PM<sub>2.5</sub>. We have concluded that Arkansas's PM BART determinations for the natural gas firing scenario for Entergy Lake Catherine Unit 4; for the bituminous and sub-bituminous coal firing scenarios for Entergy White Bluff Units 1 and 2; for the AEP Flint Creek Boiler No. 1; and for the Domtar Ashdown Mill Power Boiler No. 1 are reasonable.

*Comment:* The existing PM limit of 0.1 lbs/MMBtu in the AEP Flint Creek Title V permit, which EPA proposed to approve as BART for PM, is based on EPA's New Source Performance Standards (NSPS) for Fossil-Fuel Fired Steam Generators that commenced construction after August 17, 1971 (40 CFR part 60, subpart D, § 60.42(a)(1)).

<sup>144</sup> Appendix Y to Part 51, section III.A.2.

This PM emission limit does not apply during periods of startup, shutdown, and malfunction (SSM) (see 40 CFR 60.8(c)); only applies to filterable PM emissions (see 40 CFR 60.46(b)(2) and EPA Method 5 in 40 CFR part 60, appendix A); and only applies during scenarios of firing coal and tire-derived fuel at Flint Creek (see Title V permit for Flint Creek, Permit No. 0276-AOP-R5, at 18 (Exhibit 3)). When the unit is firing coal with leachate injection a PM<sub>10</sub> emission limit of 778.4 lb/hr applies, which at maximum heat input capacity equates to 0.12 lb/MMBtu. Since the Title V permit directs Flint Creek to ask EPA for a determination regarding the applicability of NSPS Subpart D limits for oil-firing and coal-and-oil-firing scenarios, it is not clear whether any PM emission limit applies to Flint Creek during oil-firing and oil-and-coal-firing. EPA recently proposed to disapprove SSM exemptions from BART limits in the Kansas RH SIP (see 76 FR 52604, 52617–18 and section 302(k) of the CAA). Because BART must reflect the best system of continuous emission reduction, the BART limits must apply at all times. The existing PM limit in the Flint Creek Title V permit cannot satisfy BART because the existing PM limit in the Flint Creek Title V permit does not apply during SSM, and there does not appear to be a PM limit in the Flint Creek Title V permit during oil-firing and oil- and coal-firing. A proper BART evaluation would have shown that these limits do not reflect BART for Flint Creek's PM emissions.

*Response:* In our review of the Arkansas RH SIP, we evaluated the determination by ADEQ that no additional PM controls are required at the AEP Flint Creek Boiler No. 1. ADEQ's determination was based on the pre-control modeling performed by ADEQ and on AEP SWEPSCO's statement that the PM visibility modeling did not "trip the BART impact threshold." We reviewed the pre-control modeling ADEQ performed using the 24-hr actual maximum emissions from the baseline period. The modeling results in Appendix 9.2B of the Arkansas RH SIP and presented in Table 7–6 of Appendix A of the TSD<sup>145</sup> indicate that PM contributes less than 0.5% of the total visibility impacts from Flint Creek Boiler No. 1 at all nearby Class I areas with the exception of Upper Buffalo. PM contributions to visibility impacts at Upper Buffalo from Flint Creek are less than 2% of the total visibility impairment at this Class I area. On the most impacted day at Upper Buffalo,

modeling the 24-hr actual maximum emissions demonstrates that PM contributes only 0.07 dv of the total 3.781 dv modeled visibility impact from the source. Clearly, the most effective controls to address visibility impairment from the source are those that would reduce emissions of visibility impairing pollutants other than direct emissions of PM. In this action, we are finalizing our proposal to disapprove Arkansas's NO<sub>x</sub> and SO<sub>2</sub> BART determinations for Flint Creek Boiler No. 1, as ADEQ did not properly identify and evaluate NO<sub>x</sub> and SO<sub>2</sub> controls to address visibility impairment from the source.

As stated in our proposed rulemaking on the Arkansas RH SIP, we found that the source's visibility impact from PM emissions alone is so minimal such that the installation of any additional PM controls on the source could only result in very small visibility benefit that would not justify any upgrades to the existing controls. This is in keeping with the BART Rule, which states the following:

"Consistent with the CAA and the implementing regulations, States can adopt a more streamlined approach to making BART determinations where appropriate. Although BART determinations are based on the totality of circumstances in a given situation, such as the distance of the source from a Class I area, the type and amount of pollutant at issue, and the availability and cost of controls, it is clear that in some situations, one or more factors will clearly suggest an outcome. Thus, for example, a State need not undertake an exhaustive analysis of a source's impact on visibility resulting from relatively minor emissions of a pollutant where it is clear that controls would be costly and any improvements in visibility resulting from reductions in emissions of that pollutant would be negligible. In a scenario, for example, where a source emits thousands of tons of SO<sub>2</sub> but less than one hundred tons of NO<sub>x</sub>, the State could easily conclude that requiring expensive controls to reduce NO<sub>x</sub> would not be appropriate. In another situation, however, inexpensive NO<sub>x</sub> controls might be available and a State might reasonably conclude that NO<sub>x</sub> controls were justified as a means to improve visibility despite the fact that the source emits less than one hundred tons of the pollutant."<sup>146</sup>

Therefore, we agreed with the State that PM BART for Flint Creek Boiler No. 1 is the existing PM emission limit (*i.e.* no additional controls). The BART Rule provides that states may determine that for a given source no additional control satisfies the BART requirement for a particular pollutant.<sup>147</sup> In our final approval of the Kansas RH SIP, we approved the State's determination that

no additional control (and no new emission limit) for PM is BART for a number of sources.<sup>148</sup> In our final approval of the Oklahoma RH SIP, we also approved the State's determination that no additional control (and no new emission limit) for PM is BART for a number of sources.<sup>149</sup> In the above cases, Kansas and Oklahoma adopted no new PM emission limit for PM BART for particular sources, and EPA approved this based on the low visibility impact attributable to PM emissions. As such, it was not necessary for Arkansas to establish a new PM emission limit for BART for Flint Creek Boiler No. 1, as "no additional controls" satisfies PM BART in this particular case. Since no additional controls satisfies BART for Flint Creek Boiler No. 1, it is not problematic that the existing PM emission limit that Arkansas adopted in Chapter 15 of APCEC Regulation No. 19 as meeting PM BART for Flint Creek Boiler No. 1 (*i.e.* the EPA NSPS, and also included in the Title V permit) does not apply on a continuous basis and only applies to filterable PM emissions. We also clarify that the distinction between our approval of an existing PM emission limit adopted in Arkansas's Chapter 15 of APCEC Regulation No. 19 for Flint Creek Boiler No. 1 that does not apply during SSM and our disapproval of an exemption of SSM for BART in the Kansas RH SIP is that the BART determinations that would have exempted SSM in the Kansas RH SIP were not based upon the minimal visibility impact from a particular pollutant. Therefore, we are finalizing our proposed approval of Arkansas determination that PM BART is the existing PM emission limit in Chapter 15 of APCEC Regulation No. 19 for Flint Creek Boiler No. 1.

That being said, we note that the 0.1 lb/MMBtu existing PM emission limit (for Flint Creek Boiler No. 1) in Chapter 15 of APCEC Regulation No. 19, which is based on EPA's NSPS standards (40 CFR part 60, subpart D, § 60.42(a)(1)), applies during the following firing scenarios: coal firing; coal and tire derived fuel (TDF) firing; and during coal firing with leachate injection.<sup>150</sup> We are finalizing our proposed approval of PM BART for the AEP Flint Creek Boiler No. 1.

*Comment:* The existing PM limit of 0.1 lbs/MMBtu in the Entergy White

<sup>148</sup> 76 FR 52604 and 76 FR 80754.

<sup>149</sup> 76 FR 16168 and 76 FR 81728.

<sup>150</sup> See section IV, specific conditions 3.a., 8.a., and 17.b of the ADEQ Operating Air Permit for AEP-Flint Creek Power Plant (Permit No. 0276-AOP-R5). This permit can be viewed at <http://www.adeq.state.ar.us/ftp/root/pub/WebDatabases/PermitsOnline/Air/0276-AOP-R5.pdf>.

<sup>145</sup> These documents can be found in the docket associated with our final rulemaking.

<sup>146</sup> 70 FR 39116.

<sup>147</sup> 70 FR 39116.

Bluff Title V permit, which EPA proposed to approve as BART for PM, is based on EPA's NSPS for Fossil-Fuel Fired Steam Generators that commenced construction after August 17, 1971 (40 CFR part 60, subpart D, § 60.42(a)(1)). This PM emission limit does not apply during SSM (see 40 CFR 60.8(c)), and only applies to filterable PM emissions (see 40 CFR 60.46(b)(2) and EPA Method 5 in 40 CFR part 60, appendix A). Since the Title V permit directs White Bluff to ask EPA for a determination regarding the applicability of NSPS Subpart D limits during fuel oil-firing and biodiesel firing during startup, shutdown and malfunction, it is not clear whether any PM emission limit applies to White Bluff for these scenarios. EPA recently proposed to disapprove SSM exemptions from BART limits in the Kansas RH SIP (see 76 FR 52604, 52617–18 and section 302(k) of the CAA). Because BART must reflect the best system of continuous emission reduction, the BART limits must apply at all times. The existing PM limit in the White Bluff Title V permit cannot satisfy BART because this limit does not apply during SSM, and there does not appear to be a PM limit in the White Bluff Title V permit during fuel oil-firing and bio-diesel firing. The existing PM limit in the White Bluff Title V permit cannot satisfy BART because it does not apply during all periods of operation of the unit.

*Response:* First, we disagree that we are approving the White Bluff Title V permit as BART for PM. We are approving the part of the Chapter 15 of APCEC Regulation No. 19 that applies to the Entergy White Bluff Units 1 and 2 as BART for PM. We agree that the part of the submitted rule that applies to the two White Bluff units is based on EPA's NSPS for Fossil-Fuel Fired Steam Generators that commenced construction after August 17, 1971 (40 CFR part 60, subpart D, § 60.42(a)(1)). Secondly, in our review of the Arkansas RH SIP, we evaluated the determination by ADEQ that no additional PM controls are required at the Entergy White Bluff Units 1 and 2. We reviewed the data submitted by ADEQ, including pre-control modeling in Appendix 9.2B of the Arkansas RH SIP, to evaluate the State's determination that the majority of visibility-causing emissions are due to emissions of NO<sub>x</sub> and SO<sub>2</sub>, and that no additional PM controls are warranted. The modeling results in Appendix 9.2B of the Arkansas RH SIP and presented in Table 7–7 of Appendix A of the TSD, indicate that PM contributes less than 0.4% of the total

visibility impacts at all nearby Class I areas. On the most impacted day at Caney Creek, modeling the 24-hr actual maximum emissions, PM contributes only 0.03 dv of the more than 8 dv modeled visibility impact from the White Bluff Units 1 and 2. Clearly, the majority of visibility-causing emissions are due to emissions of NO<sub>x</sub> and SO<sub>2</sub> and the most effective controls to address visibility impairment from the units are those that would reduce emissions of NO<sub>x</sub> and SO<sub>2</sub> rather than direct emissions of PM. In this action, we are finalizing our proposal to disapprove Arkansas's NO<sub>x</sub> and SO<sub>2</sub> BART determinations for White Bluff Units 1 and 2, as the State did not properly evaluate and identify controls to address visibility impairment from these units.

As articulated in our proposed rulemaking on the Arkansas RH SIP, we are finding that the source's visibility impact from PM emissions alone is so minimal such that the installation of any additional PM controls on the two units could only result in such small visibility benefits that it could not justify any upgrades to the existing controls. This is in keeping with the BART Rule, which states the following:

“Consistent with the CAA and the implementing regulations, States can adopt a more streamlined approach to making BART determinations where appropriate. Although BART determinations are based on the totality of circumstances in a given situation, such as the distance of the source from a Class I area, the type and amount of pollutant at issue, and the availability and cost of controls, it is clear that in some situations, one or more factors will clearly suggest an outcome. Thus, for example, a State need not undertake an exhaustive analysis of a source's impact on visibility resulting from relatively minor emissions of a pollutant where it is clear that controls would be costly and any improvements in visibility resulting from reductions in emissions of that pollutant would be negligible. In a scenario, for example, where a source emits thousands of tons of SO<sub>2</sub> but less than one hundred tons of NO<sub>x</sub>, the State could easily conclude that requiring expensive controls to reduce NO<sub>x</sub> would not be appropriate. In another situation, however, inexpensive NO<sub>x</sub> controls might be available and a State might reasonably conclude that NO<sub>x</sub> controls were justified as a means to improve visibility despite the fact that the source emits less than one hundred tons of the pollutant.”<sup>151</sup>

Therefore, we agree with the State that PM BART for White Bluff Units 1 and 2 is the existing PM emission limit in Chapter 15 of APCEC Regulation No. 19 (*i.e.* no additional controls). The BART Rule provides that states may determine that for a given source no

additional control satisfies the BART requirement for a particular pollutant.<sup>152</sup> In such cases, it is not necessary for a state to establish a new emission limit when no additional control is BART. In our final approval of the Kansas RH SIP, we approved the State's determination that no additional control (and no new emission limit) for PM is BART for a number of sources.<sup>153</sup> In our final approval of the Oklahoma RH SIP, we also approved the State's determination that no additional control (and no new emission limit) for PM is BART for a number of sources.<sup>154</sup> In the above cases, Kansas and Oklahoma adopted no new PM emission limit for PM BART for particular sources, and EPA approved this based on the low visibility impact attributable to PM emissions. As such, it was not necessary for Arkansas to establish a new PM emission limit for BART for White Bluff Units 1 and 2, as “no additional controls” satisfies PM BART in this particular case. As explained above, the distinction between our approval in the Arkansas RH SIP of an existing PM emission limit in Chapter 15 of APCEC Regulation No. 19 for White Bluff that does not apply during SSM and our disapproval of an exemption of SSM for BART in the Kansas RH SIP is that the BART determinations that would have exempted SSM in the Kansas RH SIP were not based upon the minimal visibility impact from a particular pollutant. Since no additional controls satisfies BART for White Bluff Units 1 and 2, it is not problematic that the existing PM emission limit that Arkansas adopted for PM BART for Units 1 and 2 does not apply on a continuous basis and only applies to filterable PM emissions. Therefore, we are finalizing our proposed approval of Arkansas determination that PM BART is the existing PM emission limit in Chapter 15 of APCEC Regulation No. 19 for White Bluff Units 1 and 2.

*Comment:* The technology available for control of the pollutant in question is the first factor that must be evaluated in a BART analysis. The most effective PM control technology is a fabric filter baghouse. ESPs can achieve control efficiencies of 99% or better, and baghouses can achieve PM control efficiencies as high as 99.9% or even higher. Baghouses have been installed since the 1970's and are the PM control technology of choice for new coal-fired EGUs. Several recent PSD permits have been issued with best available control technology (BACT) limits at 0.010 lb/

<sup>152</sup> 70 FR 39116.

<sup>153</sup> 76 FR 52604 and 76 FR 80754.

<sup>154</sup> 76 FR 16168 and 76 FR 81728.

<sup>151</sup> 70 FR 39116.

MMBtu, based on installation of a fabric filter baghouse. Matt Haber, EPA Region 9's BACT expert and current Deputy Director of the Air Division, concluded in 2002 that BACT for filterable PM at two existing PC boilers firing Powder River Basin coal and equipped with a baghouse was 0.006 lb/MMBtu based on a 3-hour average and monitored via EPA Method 5 and continuously using triboelectric broken bag detectors. Even though AEP Flint Creek and Entergy White Bluff are subject to BART, and not BACT, after evaluating the achievable emission rates with a new baghouse at these units, there is no reason why Flint Creek and White Bluff could not achieve PM emission rates similar to those of a new unit with a baghouse. Particularly since White Bluff will be installing new baghouses at the two units. Even these BACT limits fail to reflect the low levels of filterable PM emissions that can be achieved with fabric filter baghouses. As early as May 2004, at least 147 performance tests measured filterable PM/PM<sub>10</sub> at less than 0.010 lb/MMBtu and 82 recorded PM/PM<sub>10</sub> emissions less than 0.005 lb/MMBtu using fabric filter baghouses. The lowest reported PM/PM<sub>10</sub> emission rate was 0.0004 lb/MMBtu. Other states have made PM BART determinations that are much lower than ADEQ's proposed limit of 0.1 lb/MMBtu, based on use of a baghouse. South Dakota adopted and EPA recently approved a PM BART emission limit of 0.012 lb/MMBtu for the Big Stone Power Plant, a 600 MW power plant burning Powder River Basin coal, and with an existing baghouse. Even though Big Stone is located 431 km from the nearest Class I area, EPA did not exempt the plant from PM BART as EPA has proposed for Flint Creek.

*Response:* EPA agrees that baghouses have very high PM control efficiency capabilities. However, as articulated in our proposed rulemaking and further explained in our response to comments, due to the low visibility impact from the AEP Flint Creek Boiler No. 1 and the Entergy White Bluff Units 1 and 2 attributable to PM, we agree with Arkansas that the existing PM emission limit adopted for these sources in Chapter 15 of APCEC Regulation No. 19 satisfies BART for these units. As explained elsewhere in our response to comments, this is consistent with the BART Rule and EPA's action on other states' RH SIPs. We are finalizing our proposed approval of the existing PM emission limit as PM BART for the AEP Flint Creek Boiler No. 1 and Entergy White Bluff Units 1 and 2.

With regard to the comment that White Bluff will be installing baghouses

on Units 1 and 2, EPA is aware that Entergy White Bluff has canceled the proceeding before the Arkansas Public Service Commission to obtain a declaratory order approving the installation of these controls. Furthermore, as explained elsewhere in our response to other comments, the Arkansas RH SIP that is before EPA to act on does not include installation of a dry scrubber and baghouse for control of SO<sub>2</sub> and PM emissions at White Bluff Units 1 and 2. Therefore, EPA disagrees that it should disapprove the PM BART determination for White Bluff Units 1 and 2 because the source may be considering installing these controls.

*Comment:* Coal-fired boilers with hot-side ESPs, including the Navajo Power Plant Units, are meeting PM emission rates much lower than 0.1 lb/MMBtu. Even if EPA finds that it is acceptable to not evaluate additional control technologies for PM<sub>10</sub> at AEP Flint Creek, the PM<sub>10</sub> BART limit for Flint Creek must reflect the technology determined to represent BART. The 0.1 lb/MMBtu PM emission limit of Subpart D of the NSPS does not. Because the existing PM emission limit of 0.1 lb/MMBtu is much higher than the maximum 24-hour average PM<sub>10</sub> levels emitted by Flint Creek, the existing limit fails to reflect the best system of continuous emission reduction as required by the definition of BART in 40 CFR 51.302. There will be less incentive to properly operate and maintain the PM control equipment if the PM BART limit is unreasonably high.

*Response:* As articulated in our proposed rulemaking and further explained in earlier response to comments, due to the low visibility impact from the AEP Flint Creek Boiler No. 1 attributable to PM, we agree with Arkansas that the existing PM emission limit in Chapter 15 of APCEC Regulation No. 19 satisfies BART for this unit. EPA agrees with Arkansas that requiring the source to install and operate additional PM controls on this unit (including any upgrades to the existing PM controls) would not be justified because of the low visibility benefit that would result. As explained elsewhere in our response to comments, this is consistent with the BART Rule and EPA's action on other states' RH SIPs. We are finalizing our proposed approval of the existing PM emission limit in as PM BART for the AEP Flint Creek Boiler No. 1.

*Comment:* Even if it was determined that the existing ESPs represent BART for the White Bluff Units 1 and 2, the existing PM emissions limits fail to reflect BART. According to ADEQ, the maximum 24-hour actual PM<sub>10</sub> emission

rates at White Bluff Units 1 and 2 are much lower than the emissions allowed by the existing PM limit in the White Bluff Title V permit. At an emission rate of 0.1 lbs/MMBtu, while firing coal and a maximum allowable heat input capacity of 8,700 lbs/MMBtu, the maximum pound per hour emission rate would be 879 lb/hr. However, ADEQ modeled Entergy White Bluff's highest-24 hour actual PM<sub>10</sub> emission rate as 15.592 grams per second for Unit 1 and 16.653 grams per second for Unit 2, which equate to 123.7 lb/hr and 132.2 lb/hr, respectively. Assuming the highest actual PM<sub>10</sub> emission rate occurred during the time of maximum heat input capacity, the maximum 24-hour actual PM<sub>10</sub> emission rate modeled equates to 0.027 lb/MMBtu. In 2010, PM stack testing at White Bluff Units 1 and 2 showed the units were emitting filterable PM and total PM at rates much lower than ADEQ's PM BART limit of 0.1 lb/MMBtu, which under Subpart D of the NSPS only applies to filterable PM (see Exhibits 14 and 15). With the installation of a scrubber and NO<sub>x</sub> controls to meet BART, the condensable PM emissions will be even lower than the 2010 stack testing results show. Even if EPA finds it acceptable to not evaluate additional control technologies for PM at White Bluff Units 1 and 2, the PM BART limit for the units must reflect the technology determined to represent BART, which in this case it does not. Because the existing PM emission limit of 0.1 lb/MMBtu is much higher than the maximum 24-hour average PM<sub>10</sub> levels emitted by White Bluff, the existing limit fails to reflect the best system of continuous emission reduction as required by the definition of BART in 40 CFR 51.302. There will be less incentive to properly operate and maintain the PM control equipment if the PM BART limit is unreasonably high.

*Response:* As articulated in our proposed rulemaking and further explained in our previous response to comments, due to the low visibility impact from the Entergy White Bluff Units 1 and 2 attributable to PM, we agree with Arkansas that the existing PM emission limit adopted in Chapter 15 of APCEC Regulation No. 19 satisfies BART for these units. EPA agrees with Arkansas that requiring the source to install and operate additional PM controls on these units (including any upgrades to the existing PM controls) is not justified based on the small visibility benefit. As explained elsewhere in our response to comments, this is consistent with the BART Rule and EPA's action on other states' RH

SIPs. We are finalizing our proposed approval of the existing PM emission limit as PM BART for White Bluff Units 1 and 2.

*Comment:* Other states have made PM BART determinations that are much lower than ADEQ's proposed limit of 0.1 lb/MMBtu for White Bluff Units 1 and 2. South Dakota adopted and EPA recently approved a PM BART emission limit of 0.012 lb/MMBtu for the Big Stone Power Plant, a 600 MW power plant burning Powder River Basin coal, and with an existing baghouse. Even though Big Stone is located 431 km from the nearest Class I area, neither South Dakota nor EPA exempt the plant from PM BART as EPA has proposed for White Bluff. In Big Stone's case, South Dakota and EPA are following the Federal regulations regarding BART, which requires that sources that are subject to BART obtain BART limits for "each pollutant emitted by" the BART-eligible source (see 40 CFR 51.301 and Appendix Y, section IV.A). The State of Wyoming has also adopted PM BART determinations for several EGUs that are lower than 0.1 lb/MMBtu, including 0.042 lb/MMBtu for Naughton Unit 1; 0.054 lb/MMBtu for Naughton Unit 2; 0.015 lb/MMBtu for Naughton Unit 3, Dave Johnson Units 3 and 4, and Wyodak; and 0.03 lb/MMBtu for Jim Bridger Units 1–4.

*Response:* The EPA agrees that other states have adopted PM emission limits more stringent than those adopted by Arkansas for PM BART. However, as articulated in our proposed rulemaking and further explained in our response to comments, due to the low visibility impact from White Bluff Units 1 and 2 attributable to PM, we agree with Arkansas that the existing PM emission limit in Chapter 15 of APCEC Regulation No. 19 satisfies BART for these units. EPA agrees with Arkansas that requiring the source to install and operate additional PM controls on these units (including any upgrades to the existing PM controls) is not justified based on the small visibility benefit. Such was not the case with regard to the visibility impact due to direct PM emissions from the sources in other states referenced in the comment. As explained elsewhere in our response to comments, this is consistent with the BART Rule and EPA's action on other states' RH SIPs. We are finalizing our proposed approval of the existing PM emission limit as PM BART for Entergy White Bluff Units 1 and 2.

*Comment:* The EPA proposed to approve Entergy's determination that PM BART for the natural gas firing scenario is the existing PM limit for Lake Catherine Unit 4, or 45.0 lb/hr (76

FR 64204). EPA identifies the PM emission limit as 45.0 lb/hr, but the permit identifies the PM<sub>10</sub> limit as 44.5 lb/hr (see Exhibit 21). EPA cannot approve the existing PM limit as meeting BART for Lake Catherine Unit 4 for the natural gas firing scenario because Lake Catherine's Title V permit does not include provisions to ensure the enforceability of the PM limit. There are no requirements in the permit for testing to determine compliance with this limit. The permit states that Condition 9, which is a requirement to install and maintain O<sub>2</sub> monitors and to maintain a positive O<sub>2</sub> reading when the boilers are operating, is to be used for compliance with the PM<sub>10</sub> and PM limits of the permit for Lake Catherine Unit 4 (see Exhibit 21). It is not clear how this will ensure compliance with the numerical PM<sub>10</sub> emission limit of 44.5 lb/hr. The provisions of Condition 9 appear to be operational standards, and if ADEQ was relying on the O<sub>2</sub> monitoring provision to meet BART for PM, the State would need to show that the operational standard will ensure equivalent results to the lb/hr emission limit assumed for BART (see 40 CFR 51.308(e)(1)(iii)). EPA cannot justify its approval of the unenforceable PM/PM<sub>10</sub> limit for Lake Catherine Unit 4 based on its statement that PM emissions are expected to be very low from natural gas firing. Once a unit is determined to be subject to BART, it must make a determination of BART for each pollutant emitted by the unit.

*Response:* In our review of the Arkansas RH SIP, we evaluated the determination by ADEQ that PM emissions from Entergy's Lake Catherine Unit 4 are inherently very low when burning natural gas and that as a result, no additional PM controls are required for the natural gas firing scenario. We agree with the State's conclusion, based on its modeling results, that the visibility impact of this unit from direct PM emissions alone is minimal. We note that the modeling results submitted by Arkansas in Appendix 9.2B of the Arkansas RH SIP indicate that under natural gas firing conditions, NO<sub>x</sub> contributes over 99.9% of Lake Catherine Unit 4's total visibility impacts at all nearby Class I areas on the most impacted days. Based on the State's modeling results, the visibility impact of this unit from direct PM emissions alone is so minimal such that the requirement of any additional PM controls on this unit would only achieve minimal visibility benefit and would not be justified. It is clear that the most effective controls to address visibility impairment from the source during

natural gas firing are those that would reduce emissions of NO<sub>x</sub>. Given these conclusions, we proposed to find that the State reasonably concluded that BART for PM for the natural gas firing scenario is the existing PM emission limit for Unit 4 in Chapter 15 of APCEC Regulation No. 19. This is consistent with the BART Rule, which states the following:

"Consistent with the CAA and the implementing regulations, States can adopt a more streamlined approach to making BART determinations where appropriate. Although BART determinations are based on the totality of circumstances in a given situation, such as the distance of the source from a Class I area, the type and amount of pollutant at issue, and the availability and cost of controls, it is clear that in some situations, one or more factors will clearly suggest an outcome. Thus, for example, a State need not undertake an exhaustive analysis of a source's impact on visibility resulting from relatively minor emissions of a pollutant where it is clear that controls would be costly and any improvements in visibility resulting from reductions in emissions of that pollutant would be negligible. In a scenario, for example, where a source emits thousands of tons of SO<sub>2</sub> but less than one hundred tons of NO<sub>x</sub>, the State could easily conclude that requiring expensive controls to reduce NO<sub>x</sub> would not be appropriate."<sup>155</sup>

Based on our analysis of the data submitted by ADEQ in the Arkansas RH SIP, and our agreement that PM emissions from burning natural gas are inherently very low, we agree with the State that PM BART for Lake Catherine Unit 4 is the existing PM emission limit in Chapter 15 of APCEC Regulation No. 19 (*i.e.* no additional controls). The BART Rule provides that states may determine that for a given source no additional control satisfies the BART requirement for a particular pollutant.<sup>156</sup> In such cases, it is not necessary for a state to establish a new emission limit when no additional control is BART. In our final approval of the Kansas RH SIP, we approved the State's determination that no additional control (and no new emission limit) for PM is BART for a number of sources.<sup>157</sup> In our final approval of the Oklahoma RH SIP, we also approved the State's determination that no additional control (and no new emission limit) for PM is BART for a number of sources.<sup>158</sup> In the above cases, Kansas and Oklahoma adopted no new PM emission limit for PM BART for particular sources, and EPA approved this based on the low visibility impact attributable to PM emissions. Arkansas adopted the

<sup>155</sup> 70 FR 39116.

<sup>156</sup> 70 FR 39116.

<sup>157</sup> 76 FR 52604 and 76 FR 80754.

<sup>158</sup> 76 FR 16168 and 76 FR 81728.

existing PM emission limit from the facility's existing permit as BART for Lake Catherine Unit 4, which is consistent with the finding that "no additional controls" is sufficient to satisfy PM BART in this particular case. With regard to the commenter's concerns about the enforceability of the limit, because of the extremely low visibility impact of direct PM emissions from this source and the inherently low emissions of PM from natural gas combustion, the practical enforceability of this limit is not critical to our approval. We also note that NO<sub>x</sub> contributes over 99.9% of Lake Catherine Unit 4's total visibility impacts at all nearby Class I areas on the most impacted days. Therefore, we are finalizing our proposed approval of Arkansas's determination that PM BART is the existing PM emission limit in Chapter 15 of APCEC Regulation No. 19 for the Entergy Lake Catherine Unit 4.

A review of the emissions based on AP-42 emissions factors substantiates that the PM emissions from natural gas combustion are inherently low. Table 1.4-2 of EPA's AP-42 *Compilation of Air Pollutant Emission Factors*<sup>159</sup> indicates the total PM (*i.e.* condensable plus filterable PM) emission factor from combustion of natural gas is 7.6 lb/10<sup>6</sup>

standard cubic feet, which is equivalent to an emission rate of 0.0074 lb/MMBtu.<sup>160</sup> A unit's maximum emission rate for a given pollutant can be calculated by using the following standard equation:

$$\text{Pollutant mass emission rate (lb/hr)} = \frac{\text{Pollutant emission rate (lb/MMBtu)} \times \text{Unit heat input rate (MMBtu/hr)}}{1}$$

Accordingly, Appendix 9.1A of the Arkansas RH SIP indicates that the Lake Catherine Unit 4 has a heat input rate of 5,850 MMBtu/hr. Based on Unit 4's heat input rate and the 0.0074 lb/MMBtu PM emission rate from natural gas combustion, the unit's maximum mass emission rate for PM is 43.29 lb/hr. This is actually slightly lower than the existing PM emission limit for Entergy Lake Catherine Unit 4 as of October 15, 2007 (*i.e.* 45 lb/hr).

With regard to the comment that the Entergy Whit Bluff Title V permit identifies the PM<sub>10</sub> limit as 44.5 lb/hr, EPA is approving the part of Chapter 15 of APCEC Regulation No. 19<sup>161</sup> that establishes PM BART for the natural gas firing scenario for Entergy Lake Catherine Unit 4. The Title V permit that was in effect at the time of the State's adoption of Chapter 15, Regulation 19, which is Permit No. 1717-AOP-R4, required Unit 4 to meet

a PM emission limit of 45 lb/hr. The Title V permit referenced by the commenter is Permit No. 1717-AOP-R5, and appears to contain revisions to several emission limits, including the PM emission limit for Unit 4. However, EPA can act only upon what is submitted to it by a state as a SIP revision. Arkansas submitted Chapter 15, Regulation 19 as part of its RH SIP revision. The State's submitted RH Rule adopts the existing PM emission limit as of October 15, 2007 (*i.e.* 45 lb/hr) as the PM BART emission limit.

The EPA is finalizing its approval of the existing PM emission limit as meeting PM BART for Entergy Lake Catherine Unit 4 for the natural gas firing scenario.

#### 4. Comments on the Capacity Factor Used in the State's BART Analyses for Entergy Lake Catherine and White Bluff

*Comment:* The EPA was incorrect in its assessment of Entergy's Lake Catherine BART determination that Entergy's Lake Catherine Unit 4 assumption of a 10% capacity unit needs to be supported by an enforceable limit. A 10% capacity factor for Catherine Unit 4 is a conservative assumption as demonstrated by the following table:

LAKE CATHERINE UNIT 4 ANNUAL CAPACITY FACTOR

2003	2004	2005	2006	2007	2008	2009	2010	2011 (1/1-11/31)
10.4	3.2	4.2	0.5	0.7	2.7	3.0	3.1	2.5

This is consistent with the BART Guidelines because the baseline emissions rate represents a realistic depiction of anticipated annual emissions for the source and actual emissions for existing sources subject to BART should be based from a baseline period by the state. The BART Guidelines provide that only if future operating parameters differ from past practices and they have a deciding effect in the BART determination, then these parameters need to be enforceable limits. Consistent with the BART Guidelines, annual emissions for Entergy Lake Catherine Unit 4 were estimated based on the continuation of past practice of using 10% capacity for future emissions. Therefore, an enforceable permit limitation is not

required for a 10% capacity use of Entergy Lake Catherine Unit 4.

*Response:* The EPA agrees that in our proposed rulemaking on the Arkansas RH SIP we made an error in our calculation of the capacity factor for recent years for Entergy Lake Catherine Unit 4. Based on certain statements made in the BART analysis for Lake Catherine, to the effect that in the future the unit was expected to be dispatched approximately 10% of the time only, we were under the impression that the source had factored into their cost analysis that the unit would only be operating 10% of the time when the unit has historically operated at considerably more than 10% of the time. Based on the information provided by the commenter, we agree that the source has

historically operated at less than a 10% capacity factor. We also agree that the BART Guidelines provide that for the purpose of calculating the cost of controls, the state may calculate baseline emissions based upon continuation of past practice.<sup>162</sup>

However, our finding that the State did not properly document the cost analysis for NO<sub>x</sub> controls for the fuel and gas firing scenarios and SO<sub>2</sub> and PM controls for the fuel oil firing scenario for Lake Catherine Unit 4 has not changed, as the proper documentation necessary to allow us to make an informed and proper evaluation of the BART analysis was not included in the SIP, as the BART Guidelines require. As explained in our proposed rulemaking, the RH SIP includes the results of a

<sup>159</sup> Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, AP-42, 5th Edition, January 1995.

<sup>160</sup> EPA's AP-42 emission factors are based on an average natural gas higher heating value of 1,020 Btu/standard cubic foot. As explained under Table 1.4-2 of EPA's AP-42 emission factors, to convert

from lb/10<sup>6</sup> standard cubic feet to lb/MMBtu, divide by 1,020. Based on this calculation, the 7.6 lb/10<sup>6</sup> standard cubic feet emission factor from combustion of natural gas is equivalent to an emission rate of 0.0074 lb/MMBtu.

<sup>161</sup> The Arkansas RH SIP was originally submitted to EPA on September 23, 2008. We received a

revision to the RH SIP on August 3, 2010, and a supplemental submittal on September 27, 2011. The revisions to Chapter 15 of APCEC Regulation 19 that we are referring to were submitted to us in the August 3, 2010 RH SIP revisions.

<sup>162</sup> Appendix Y to Part 51, section IV.4.

computerized model the source used to calculate the costs associated with each NO<sub>x</sub> control technology for both the natural gas and fuel oil firing scenarios. However, the SIP includes no detailed breakdown of the costs. The only explanation of the computerized model is a paragraph in Appendix 9.3B, which points out that inputs that went into the model were based on inputs derived from the EPRI document entitled “Retrofit NO<sub>x</sub> Control Guidelines for Gas and Oil Fired Boilers,”<sup>163</sup> which were further analyzed to reflect performance expected for Lake Catherine Unit 4, as according to the source “each specific boiler will perform differently due to the unique characteristics of that boiler.”<sup>164</sup> The BART Guidelines provide that states should include documentation for any additional information used for the cost calculations, including any information supplied by vendors that affects your assumptions regarding purchased equipment costs, equipment life, and other elements of the calculation.<sup>165</sup> This was not done in the Arkansas RH SIP.

Furthermore, as noted in our proposed rulemaking on the Arkansas RH SIP, the State did not properly consider NO<sub>x</sub> post-combustion controls in the BART analysis for natural gas firing and fuel oil firing. As pointed out by another comment, the State eliminated post-combustion controls from consideration because they were found to be not cost-effective and the State eliminated two NO<sub>x</sub> control options (for natural gas firing) involving a combination of combustion controls because of their incremental cost-effectiveness. Based on the information provided from the source’s computerized model, the cost-effectiveness of a combination of

combustion controls and SNCR is \$3,378/NO<sub>x</sub> ton removed for the natural gas firing scenario and \$3,440/NO<sub>x</sub> ton removed for the fuel oil firing scenario. This is not an unreasonably high cost-effectiveness value, and depending on the visibility impact of these controls and the consideration of any of the other statutory factors, the State may find that these controls are BART. In light of Entergy Lake Catherine’s pre-control visibility impact of 6.607 dv and post-control visibility impact of 3.671 dv at Caney Creek for the fuel oil firing scenario, which is based on the BART controls adopted by the State in Chapter 15, Regulation 19 (*i.e.* for NO<sub>x</sub> BART this consists of boiler tuning, boiler modifications, and burners out of service), we believe that it is possible that NO<sub>x</sub> and SO<sub>2</sub> controls more stringent than those adopted by the State, including post-combustion controls, would be cost-effective and help reduce the visibility impact of the source at Arkansas and Missouri Class I areas. Therefore, the State should have evaluated both the cost-effectiveness and the incremental cost-effectiveness in addition to the visibility impact of post-combustion controls and each of the other control options considered at each potentially affected Class I area before eliminating any given control option. It appears that the source and the State may have only considered the incremental cost-effectiveness of controls in eliminating post-combustion controls and all other controls more stringent than the controls adopted by the State for NO<sub>x</sub> BART. The BART Guidelines provide that average cost-effectiveness (reported by the source to be \$1,701/ton NO<sub>x</sub> removed and \$3,757/ton NO<sub>x</sub> removed for the two sets of combination of controls mentioned above for the natural gas firing

scenario), in addition to the visibility impacts at each potentially affected Class I area, should also be taken into consideration before a BART determination is made.

In addition, as articulated in our proposed rulemaking on the Arkansas RH SIP, the State did not consider SO<sub>2</sub> post-combustion controls in the BART analysis for fuel oil firing. Furthermore, as noted in our proposed rulemaking, the use of a wet scrubber system that controls both SO<sub>2</sub> and PM emissions may prove to be cost-effective and provide for substantial visibility improvement. As explained elsewhere in our response to comments, in light of Entergy Lake Catherine’s pre-control visibility impact of 6.607 dv and post-control visibility impact of 3.671 dv at Caney Creek for the fuel oil firing scenario,<sup>166</sup> we believe that it is possible that NO<sub>x</sub>, SO<sub>2</sub>, and PM controls more stringent than those adopted by the State in Chapter 15 of APCEC Regulation No. 19, including post-combustion controls, would be cost-effective and help reduce the visibility impact of the source at Arkansas and Missouri Class I areas.

Therefore, we are finalizing our proposed disapproval of BART for the Entergy Lake Catherine Unit 4 for NO<sub>x</sub> for both the natural gas and fuel oil firing scenarios, and SO<sub>2</sub> and PM for the fuel oil firing scenario.

*Comment:* The EPA was incorrect in criticizing the cost-analysis conducted for Entergy’s White Bluff Units 1 and 2 because the source assumed 85% utilization of the units without an enforceable limit when the EPA believes that the units are capable of utilization of 100% capacity factor. Utilization of 85% capacity factor for these units is a conservative assumption, as demonstrated by the following table:

WHITE BLUFF CAPACITY FACTORS

Unit	2003	2004	2005	2006	2007	2008	2009	2010	2011 (1/1–11/31)
1 .....	75.3	73.4	63.1	55.1	81.3	78.2	71.1	82.5	60.7
2 .....	58.7	74.4	63.0	74.8	54.3	71.5	74.6	65.5	71.9

This is consistent with the BART Guidelines because the baseline emissions rate represents a realistic depiction of anticipated annual emissions for the source and actual emissions for existing sources subject to BART should be based from a baseline

period by the state. The Guidelines provide that only if future operating parameters differ from past practices and they have a deciding effect in the BART determination, then these parameters need to be enforceable limits. Consistent with the Guidelines,

annual emissions from Entergy White Bluff Units 1 and 2 were estimated based on the continuation of past practice of using 85% capacity for future emissions. Therefore, an enforceable permit limitation is not

<sup>163</sup> EPRI document entitled “Retrofit NO<sub>x</sub> Control Guidelines for Gas and Fired Boilers,” Version 2, June 1997.

<sup>164</sup> See Appendix 9.3B of the RH SIP.

<sup>165</sup> Appendix Y to Part 51, section IV.4.

<sup>166</sup> See Tables 9.4f and 9.4e of the Arkansas RH SIP. The pre- and post-control visibility impact reported is the maximum Δdv. The post-control

visibility impact is the visibility impact resulting from the BART controls adopted by the State.

required for an 85% capacity use of Entergy White Bluff Units 1 and 2.

*Response:* The EPA agrees that in our proposed rulemaking on the Arkansas RH SIP we made an error in our calculation of the capacity factor for recent years for Entergy White Bluff Units 1 and 2. Based on certain statements made in the BART analysis for White Bluff, to the effect that in the future the unit was expected to be dispatched approximately 85% of the time only, we were under the impression that the source had factored into their cost analysis that the unit would only be operating 85% of the time when the unit has historically operated at more than this. Based on the information provided the commenter, we agree that the source has historically operated at slightly less than an 85% capacity factor. We also agree that the BART Guidelines provide that for the purpose of calculating the cost of controls, the state may calculate baseline emissions based upon continuation of past practice.<sup>167</sup>

However, our finding that the State did not properly document the cost analysis for NO<sub>x</sub> and SO<sub>2</sub> controls for both the bituminous and sub-bituminous coal firing scenarios for White Bluff Units 1 and 2 has not changed. As articulated in our proposed rulemaking, the proper documentation necessary to allow an informed and proper evaluation of the BART analysis was not included in the SIP, as the BART Guidelines require. As pointed out in another comment, the annual cost estimates of NO<sub>x</sub> combustion controls in the BART analysis for White Bluff Units 1 and 2 are significantly higher than those of similar controls at comparable facilities. The State must provide documentation of its cost calculations and a reasonably detailed breakdown of the costs. The State must also document the reason for any unusually high costs, which may require a higher level of detail in cost breakdown. Furthermore, the State did not properly consider the available controls and cost of controls because it did not evaluate SO<sub>2</sub> and NO<sub>x</sub> controls that can achieve emission limits more stringent than the presumptive emission limits. As articulated in more detail in our proposed rulemaking, some of the control technologies evaluated by the State for SO<sub>2</sub> are capable of achieving a higher control efficiency than that evaluated by the State, and there are NO<sub>x</sub> control technologies capable of achieving a more stringent limit than the presumptive limit. Because such controls have been found to be cost-

effective at similar facilities, the State must evaluate the costs and visibility impact of these controls before making a BART determination. Moreover, as articulated in our proposed rulemaking and in previous response to comments, the RHR, BART Guidelines, and CAA require that states consider the controls available, including the most stringent control technology, as well as the maximum level of control achievable by each technology.

Therefore, we are finalizing our proposed disapproval of the NO<sub>x</sub> and SO<sub>2</sub> BART determinations for the Entergy White Bluff Units 1 and 2 for both the bituminous and sub-bituminous coal firing scenarios.

#### 5. Comments on the State's Cost Evaluations

*Comment:* The "cost of compliance" is a BART consideration factor that should be properly left to the states and EPA cannot void a state's cost assessment on the grounds that EPA would have used a different analysis or would have reached a different conclusion if it had primary jurisdiction.

*Response:* The EPA agrees that the BART Rule provides states with some flexibility in how they calculate and consider costs.<sup>168</sup> However, our grounds for disapproving Arkansas's NO<sub>x</sub> BART determinations (natural gas and fuel oil firing conditions) and SO<sub>2</sub> BART determination (fuel oil firing conditions) for Entergy Lake Catherine Unit 4 and the NO<sub>x</sub> and SO<sub>2</sub> BART determinations (bituminous and sub-bituminous coal firing conditions) for Entergy White Bluff Units 1 and 2, as articulated in our proposal, are not based on EPA arriving at a different BART determination. Our disapproval of the above BART determinations is based in part on the fact that the State did not provide the proper documentation, as required by the BART Guidelines.<sup>169</sup> The BART Guidelines provide that states must develop estimates of capital and annual costs and document the basis for equipment cost estimates either with data supplied by a vendor (*i.e.* budget estimates or bids) or by a referenced source (such as the OAQPS Control Cost Manual).<sup>170</sup> The BART Guidelines also provide that cost estimates should be based on the OAQPS Control Cost Manual, where possible, to maintain and improve consistency, and that states should include documentation for any additional information used in cost calculation. The State did not satisfy

this requirement in the above BART determinations because the State provided no documentation, breakdown, or any sufficiently detailed supporting information for its cost analyses. Without the documentation, neither we nor the public have the basis to verify the validity of either the cost estimates or Entergy's BART determination based on the cost estimation. As pointed out in another comment, the annual cost estimates of NO<sub>x</sub> combustion controls in the State's BART analysis for White Bluff Units 1 and 2 are significantly higher than those of similar controls at comparable facilities. In summary, our disapproval for these BART determinations is based (among other reasons) on the fact that the proper documentation necessary to allow us to make an informed and proper evaluation of the BART analysis was not included in the SIP, as the BART Guidelines require.

*Comment:* The EPA claims that Arkansas's BART determinations should be disapproved because they rely on cost estimates that are not adequately documented or that lack sufficiently detailed supporting information (76 FR 64206), yet EPA fails to provide any specific discussion in the proposed rule's preamble of the purported shortcomings in the state's cost information and fails to describe the type or degree of documentation it believes is mandated. In other similar RH SIP rulemakings, EPA has described a level of cost estimate documentation that is of such an extensive and detailed nature that it cannot be reasonably deemed an appropriate requirement of a BART cost assessment (76 FR 52388, 52396).

*Response:* The EPA disagrees that our proposed rulemaking did not provide any specific discussion on the type or degree of documentation needed in a state's cost evaluation. Our proposed rulemaking and the TSD for our proposed rulemaking both specify that the basis for equipment cost estimates should be documented either with data supplied by an equipment vendor or by a referenced source, such as the OAQPS Control Cost Manual. Our proposed rulemaking also specified that for the SO<sub>2</sub> BART analysis for fuel oil firing for Entergy Lake Catherine Unit 4, the State should clearly indicate the quantity of fuel oil consumption on which the State's annual cost calculation is based. However, the BART Guidelines set specific requirements regarding this matter. The BART Guidelines provide that states should base their cost estimates on the OAQPS Control Cost Manual, where possible, and that the level of detail in the Cost Control

<sup>168</sup> 70 FR 39127.

<sup>169</sup> Appendix Y to Part 51, section IV.4.

<sup>170</sup> Appendix Y to Part 51, section IV.4.

<sup>167</sup> Appendix Y to Part 51, section IV.4.



Manual addresses most control technologies in sufficient detail for a BART analysis. In general, a state should include a reasonably detailed line by line breakdown of the cost estimates, and document the vendor and/or referenced source. However, as explained in the BART Guidelines, where unusual costs due to site-specific design or other conditions are factored into the cost calculation, this should also be documented properly. For cases involving unusual costs, such as was the case at the San Juan Generating Station in New Mexico,<sup>171</sup> which was subject to a FIP for BART controls (which the comment references), a higher level of detail in documentation may be necessary. Furthermore, the State is encouraged to work with EPA to determine the appropriate level of detail needed for any future BART analyses to be submitted to EPA as SIP revisions.

*Comment:* The EPA found that Entergy's cost evaluation for BART for NO<sub>x</sub> and SO<sub>2</sub> for White Bluff Units 1 and 2 was deficient because the company assumed 85% utilization of the two units when they are not subject to any federally enforceable limit on utilization, and the units are capable of 100% utilization. We agree with EPA's concerns that by assuming 85% utilization of the White Bluff units under the proposed NO<sub>x</sub> and SO<sub>2</sub> BART limits, Entergy underestimated the tons of NO<sub>x</sub> and SO<sub>2</sub> emissions that would be reduced and overestimated the costs per ton of pollutant removed for the combustion controls evaluated. The EPA also found that the cost analysis is inadequate because Entergy did not take into account the achievable emissions reductions with the control technologies evaluated. We agree with EPA's finding that Entergy did not adequately evaluate the cost-effectiveness of controls in the NO<sub>x</sub> and SO<sub>2</sub> BART analyses for White Bluff Units 1 and 2.

*Response:* Based on comments received during the public comment period, it has come to our attention that we made an error in the calculation of the capacity factors for White Bluff Units 1 and 2. Based on the information provided, we agree that the source has historically operated at a slightly less than 85% capacity factor. The BART Guidelines provide that for the purpose of calculating the cost of controls, the state may calculate baseline emissions based upon continuation of past practice.<sup>172</sup> However, our finding that the State did not properly document the cost analysis for NO<sub>x</sub> and SO<sub>2</sub> controls for White Bluff Units 1 and 2 has not

changed, as the proper documentation necessary to allow us to make an informed and proper evaluation of the BART analysis was not included in the SIP, as the BART Guidelines require. As pointed out in another comment, the annual cost estimates of NO<sub>x</sub> combustion controls in the BART analysis for White Bluff Units 1 and 2 are significantly higher than those of similar controls at comparable facilities. In addition, the State did not properly consider the available controls and cost of controls because it did not evaluate SO<sub>2</sub> and NO<sub>x</sub> controls to achieve emissions limits more stringent than the presumptive emission limits. As articulated in more detail in our proposed rulemaking, some of the control technologies evaluated by the State for SO<sub>2</sub> are capable of achieving a higher control efficiency than that evaluated by the State, and there are NO<sub>x</sub> control technologies capable of achieving a more stringent limit than the presumptive limit. Because such controls have been found to be cost-effective at similar facilities, the State must evaluate the costs and visibility impact of these controls in making a BART determination. Furthermore, as articulated in our proposed rulemaking and in previous response to comments, the RHR, BART Guidelines, and CAA require that states consider the most stringent control technology, as well as the maximum level of control achievable by each technology.

*Comment:* Comparing Entergy's stated costs for SO<sub>2</sub> controls with those found in other companies' SO<sub>2</sub> BART evaluations, it appears that Entergy has overstated the costs of SO<sub>2</sub> controls. Entergy assumes much higher cost numbers for SO<sub>2</sub> controls in its revised 2008 BART analysis for White Bluff than in its 2006 BART analysis (see Exhibit 11). The SO<sub>2</sub> control cost numbers in Entergy's revised 2008 BART analysis for White Bluff are much higher than the cost numbers in other plants' SO<sub>2</sub> BART analyses (see Exhibit 17). Even though Entergy's revised 2008 BART analysis for White Bluff is not before EPA for approval, these comments are being provided now in case the revised 2008 BART analysis is eventually submitted to EPA. EPA should require that Entergy's cost-effectiveness calculations are based on the emission reductions achievable with the controls being evaluated and that Entergy's cost-analysis is well-documented, sound, and that the documentation and details be made publicly available.

*Response:* The EPA agrees that the 2008 BART analysis for Entergy White Bluff is not before EPA to take action on.

As far as EPA is aware, the State has not revised the RH SIP to include Entergy White Bluff's revised analysis. As such, it is unclear whether the State plans to submit it to EPA in the future as a SIP revision. However, we do agree that the cost numbers in the 2008 analysis are considerably higher than those in the 2006 BART analysis that is before EPA to take action on. Consistent with the action we are taking on the Arkansas RH SIP in this rulemaking, if the State submits the revised 2008 BART analysis to EPA in the future in the context of an official RH SIP revision, the State must provide documentation of its cost calculations and a reasonably detailed breakdown of the costs. The State will also have to document the reason for any unusually high costs, which may require a higher level of detail in cost breakdown. If the State anticipates submitting a revised BART analysis for White Bluff or any other source to EPA as a SIP revision, EPA encourages the State to work with us to resolve any uncertainties it may have with regard to the level of detail needed in the cost analysis. Consistent with the action we are taking on the Arkansas RH SIP in this rulemaking, we agree that the State must ensure that its BART analyses evaluate the most stringent emission limit achievable by each control considered, and that the cost-analysis be well-documented, sound, and that the documentation and all other relevant details are made publicly available.

*Comment:* It appears that the annual cost estimates of NO<sub>x</sub> combustion controls in Entergy's December 2006 BART analysis for the Entergy White Bluff Units 1 and 2 are very high (\$5.2 million for Unit 1 and \$5.3 million for Unit 2) compared to the cost estimates for similar controls at other coal-fired EGUs, such as those at the Boardman Power Plant (617 MW, \$3.7 million), the Four Corners Power Plant (790 MW, \$3.0 million), and the Sherburne County Power Plant (690 MW, \$2.2 million) (see Exhibit 19). Since neither Entergy nor ADEQ have provided the specific details that went into these cost estimates, it is difficult to discern why Entergy's cost estimates are much higher.

*Response:* The EPA agrees with the comment that the cost estimates Arkansas provided in the cost evaluation of NO<sub>x</sub> combustion controls in the 2006 Entergy White Bluff BART analysis are considerably higher than the cost estimates for similar controls at the other coal fired EGUs. The EPA notes that the Entergy White Bluff Units 1 and 2 have a slightly greater generating capacity (850 MW each), but because of the lack of detail in Entergy White Bluff's cost calculations, it is not

<sup>171</sup> 76 FR 52388.

<sup>172</sup> Appendix Y to Part 51, section IV.A.

clear what issues are attributing to the wide difference in the annualized cost estimates. As explained in our proposed rulemaking, the State must provide proper documentation of all cost calculations, and a reasonably detailed breakdown in costs. In cases where the State finds that cost of controls are unusually high, especially in comparison to the cost of the same controls at other similar sources, the State must provide a more detailed breakdown of costs, as provided in the BART Guidelines.<sup>173</sup>

*Comment:* The EPA was incorrect in its assessment of Entergy's Lake Catherine Unit 4 BART determination that Entergy provided no documentation or detailed breakdown of cost. Entergy only included the expected capital cost and any impacts the control technology will have on the unit heat rate in the cost estimate, which is a conservative cost estimate of the cost of each control technology. Entergy's methods of calculations are described in the Appendix of the Determination Report. This approach is supported by EPA's BART Guidelines. In addition, by incorporating the costs provided by Entergy in the RH SIP Arkansas supports Entergy's cost analysis.

*Response:* The comment appears to be in contradiction with what was documented in Arkansas's RH SIP. In Appendix 9.3B of the Arkansas RH SIP, Entergy states that a computerized model was used to evaluate electrical generating unit performance and the capital and operation and maintenance cost associated with each identified control technology. As such, the State should provide proper documentation of the equipment costs with data supplied by an equipment vendor or by a referenced source, and include a reasonably detailed breakdown of all cost estimates. The Appendix to the Determination Report referenced in the comment appears to be "Appendix A: Cost and Emissions Estimates for NO<sub>x</sub> and SO<sub>2</sub> Control Options."<sup>174</sup> This document contains the total annual cost (with no breakdown), the cost-effectiveness and the incremental cost-effectiveness calculated by Entergy of the controls considered in the BART analysis, along with formulas that were used by the source in calculating costs (*i.e.* total capital requirement, leveled control cost, etc.). But the actual calculations or numbers that went into these formulas are not included. As explained in our response to other

comments, this approach is not supported by the BART Guidelines. We also note that the State's support for a particular cost analysis alone is not grounds for EPA approval. The EPA must evaluate the details of a cost analysis and determine whether it meets the RH requirements and BART Guidelines before we can consider it in approving or disapproving a BART determination.

*Comment:* Entergy demonstrated that post-combustion NO<sub>x</sub> controls for Lake Catherine Unit 4 are not economically viable. Thus, EPA should not have disapproved Lake Catherine Unit 4's BART determination on the grounds that post-combustion controls were not evaluated. ADEQ noted that in the BART analysis for Lake Catherine facility Entergy used a computerized model that evaluated EGU performance and the cost associated with each identified technology. Entergy's analysis started with the most economical control technology and then conducted a stepped approach where the next economical control was analyzed. The analysis continued with a combination of all identified control technologies. Entergy reported the combination of control technologies until that combination was no longer cost effective. This is consistent with the BART Guidelines which provide that in the BART review, one or more of the available control options may be eliminated from consideration if it is demonstrated to be technically infeasible or to have unacceptable energy, cost, or non-air quality environmental impacts on a case by case basis. The incremental NO<sub>x</sub> control cost of \$41,739/ton (option 5) and \$10,101/ton (option 4) shown in the Lake Catherine BART analysis do not pass the cost test as described in the BART Guidelines. This is consistent with the BART Guidelines, which provide that installation of current combustion control technology is cost-effective and should be considered in determining BART for oil- and gas-fired sources.

*Response:* As noted in our proposed rulemaking, we agree that the RH SIP includes the results of a computerized model the source used to calculate the costs associated with each technology. However, the SIP includes no detailed breakdown of the costs. The only explanation of the model is a paragraph in Appendix 9.3B, which points out that inputs that went into the model were based on inputs derived from the EPRI document entitled "Retrofit NO<sub>x</sub> Control Guidelines for Gas and Oil Fired

Boilers,"<sup>175</sup> which were further analyzed to reflect performance expected for Lake Catherine Unit 4, as "each specific boiler will perform differently due to the unique characteristics of that boiler."<sup>176</sup> The BART Guidelines provide that States should include documentation for any additional information used for the cost calculations, including any information supplied by vendors that affects the assumptions regarding purchased equipment costs, equipment life, and other elements of the calculation.<sup>177</sup> We find that this documentation was not provided by Arkansas.

The comment states that post-combustion controls were eliminated from consideration because they were found to be not cost-effective. Based on the information provided from the Entergy's computer model, the cost-effectiveness of a combination of combustion controls and SNCR is \$3,378/NO<sub>x</sub> ton removed. Again, the issue of documentation aside, we find that Arkansas should have evaluated the visibility impact of this and each of the other control options considered at each potentially affected Class I area before eliminating any given control option. The comment also notes that some control options, including options 4 and 5 that are each a combination of combustion controls, were eliminated from consideration based on their incremental cost-effectiveness. However, the BART Guidelines provide that the average cost-effectiveness (which was reported by the source to be \$1,701/ton for option 4 and \$3,757/ton for option 5), in addition to the visibility impacts from the installation of controls at each potentially affected Class I area, should also be taken into consideration before a BART determination is made. Based on average cost effectiveness, these options should not be eliminated from consideration. As the BART Guidelines explain, cost effectiveness cannot be assessed without an analysis of the projected visibility benefit. This holds true even for control options evaluated on the basis of their incremental cost effectiveness. In the preamble to the BART Rule, in response to comments that modeling should not be included as part of a BART review, EPA supported its decision to include modeling by stating that CAA section 169(g)(2) clearly requires an evaluation of the expected degree of improvement

<sup>175</sup> EPRI document entitled "Retrofit NO<sub>x</sub> Control Guidelines for Gas and Fired Boilers," Version 2, June 1997.

<sup>176</sup> See Appendix 9.3B of the RH SIP.

<sup>177</sup> Appendix Y to Part 51, section IV.4.

<sup>173</sup> Appendix Y to Part 51, section IV.4.

<sup>174</sup> See "BART Analysis for Lake Catherine Plant-Unit 4," prepared by Robert Paine, dated December 2006 (Appendix 9.3A of the Arkansas RH SIP).

in visibility from BART Controls.<sup>178</sup> The BART Rule also states the following:

“We believe that modeling, which provides model concentration estimates that are readily converted to deciviews, is the most efficient way to determine expected visibility improvement.”<sup>179</sup>

Furthermore, in the preamble to the BART Rule, in response to comments received, we stated the following:

“We agree with commenters who asserted that the method for assessing BART controls for existing sources should consider all of the statutory factors.”<sup>180</sup>

Therefore, Arkansas must evaluate all five statutory factors before eliminating a given control option, especially if there are no unusual circumstances that would make it clear that a particular control option should be eliminated before all five statutory factors are considered. With regard to the comment that the BART Guidelines provide that installation of current combustion control technology is cost-effective and should be considered in determining BART for oil- and gas-fired sources, we note the context of that statement is with regard to whether we believed a presumptive emission limit was appropriate for oil and gas fired EGUs.<sup>181</sup> It was not intended to limit the consideration for BART of possible post-combustion control options.

*Comment:* Arkansas’s failure to consider the actual costs of compliance for its BART determination is reflected by the APCEC rulemaking record for the Arkansas RH SIP. No actual costs of compliance with presumptive limits for the White Bluff and Flint Creek facilities are provided. The petition to initiate rulemaking before the APCEC contains no information about the costs to install the required control technology at these two plants nor does it identify or contain any explanation of the five BART factors that the APCEC is supposed to consider under the CAA. The financial documentation filed in support of the petition contains no indication of the actual costs of compliance. The documentation suggests that the financial impact of the rule to the citizens and ratepayers of Arkansas would be zero. Thus, Arkansas should not have adopted EPA’s presumptive limits for the Entergy White Bluff Units 1 and 2 and AEP Flint Creek Boiler 1 without first determining whether the assumptions underlying those presumptive emission limits,

including the costs of compliance, were still valid and reasonable.

*Response:* EPA notes that the APCEC is the State’s rulemaking body for environmental regulations. EPA agrees that the rulemaking record for the Arkansas RH SIP lacks sufficient information to support the State’s BART determinations for the two facilities. As reflected in our proposed rulemaking and in our previous response to comments, the State should have conducted a proper evaluation of the five statutory factors before adopting the NO<sub>x</sub> and SO<sub>2</sub> presumptive limits for BART for Entergy White Bluff Units 1 and 2 and Flint Creek Boiler 1.

#### 6. Comments on the August 2008 Revised BART Analysis for White Bluff

*Comment:* The EPA’s evaluation of the BART submittal for Entergy White Bluff Units 1 and 2 is based on a December 2006 BART analysis submitted by Entergy Arkansas Inc., and included in the Arkansas RH SIP in Appendix 9.3A. Entergy subsequently submitted a revised BART analysis to ADEQ for White Bluff on August 8, 2008 (see Exhibit 11), stating that this revised document should supersede the Entergy’s original December 2006 BART determination for White Bluff. It does not appear that ADEQ ever adopted the revised BART analysis as part of the Arkansas RH SIP, but in 2009 ADEQ did propose to issue a Title V permit for White Bluff that proposed to incorporate the control equipment proposed by Entergy in its revised 2008 BART analysis to meet BART. These controls differed from the controls assumed to meet BART in Entergy’s 2006 BART analysis. Specifically, the 2006 BART analysis proposed to install wet scrubbers to achieve the SO<sub>2</sub> presumptive limit of 0.15 lb/MMBtu and no additional controls for PM, while the revised 2008 BART analysis proposed to install dry scrubbers and baghouses to meet the SO<sub>2</sub> presumptive limit of 0.15 lb/MMBtu and no additional controls for PM. Although ADEQ never issued the permit it proposed in 2009, it appears that Entergy may intend to change its planned controls to meet BART. The EPA’s proposal does not mention Entergy’s revised 2008 BART analysis because it has not yet been adopted by Arkansas as a SIP revision, and it is therefore not before EPA to approve or disapprove. However, as EPA acts on the Arkansas RH SIP, it must consider that Entergy may be installing a baghouse as part of its SO<sub>2</sub> controls. Since a baghouse is more effective at controlling PM emissions than an ESP, EPA should not act on the state’s

proposed PM BART limit until it has a complete and approvable suite of BART controls that it is acting on or otherwise promulgating as a FIP.

*Response:* The EPA agrees that the December 2006 White Bluff BART analysis is what was included in Appendix 9.3A of the Arkansas RH SIP received by EPA on September 23, 2008. As such, that is the BART analysis that is before EPA to take action on. EPA does not have the authority to take action on a SIP revision that has never been officially submitted by the State. As the comment notes, the controls assumed to meet BART in Entergy’s 2008 revised BART analysis differ from those in the 2006 BART analysis that was submitted to EPA as part of the Arkansas RH SIP. However, since to the best of EPA’s knowledge, the State has never officially adopted the 2008 revised BART analysis as a revision to the Arkansas RH SIP and since the State never issued the permit that proposed to install the controls in the 2008 revised BART analysis, it is not clear if the State is even considering submitting such a revised SIP to EPA. As such, EPA can only review what has been submitted to it by Arkansas. Therefore, we are basing our decision upon Arkansas’s submitted RH SIP and our review of comments. As articulated in our proposed rulemaking and elsewhere in our response to comments, we find that the current permit limit (*i.e.* no additional controls) is PM BART for Entergy White Bluff Units 1 and 2 for both bituminous and sub-bituminous coal firing scenarios.

*Comment:* The EPA cannot propose to disapprove the BART determination for SO<sub>2</sub> for the Entergy White Bluff Units 1 and 2 because the EPA did not evaluate the most recent and more detailed BART analysis conducted for Entergy’s White Bluff facility when making its decision. The EPA’s proposal references the 2006 BART analysis as the basis for EPA’s decision on Arkansas’s White Bluff BART determinations and not the 2008 revised BART analysis. The 2008 revised BART analysis considered additional non-air quality environmental impacts and provided a detailed BART five factor analysis. The 2008 revised BART report was evaluated by ADEQ and provided to EPA. Even though EPA did not consider the 2008 revised BART analysis in its proposed rulemaking, it agreed with its findings in a 2009 letter to ADEQ staff that installation of dry scrubber technology is BART for the White Bluff facility. The EPA’s lack of consideration of the most current and accurate BART analysis and determination for the White Bluff facility makes EPA’s

<sup>178</sup> 70 FR 39129.

<sup>179</sup> 70 FR 39129.

<sup>180</sup> 70 FR 39130.

<sup>181</sup> Appendix Y to Part 51, section IV.E.5.

proposed rule regarding the White Bluff facility inaccurate and arbitrary.

*Response:* The EPA notes that the December 2006 White Bluff BART analysis is the BART analysis that was included in Appendix 9.3A of the Arkansas RH SIP received by EPA on September 23, 2008. As such, the December 2006 White Bluff BART analysis is what is before EPA to take action on. The EPA does not have the authority to take action on a SIP revision that has never been officially submitted by the State. The EPA is aware that in a letter dated August 8, 2008, sent by Entergy to ADEQ, the source requests that the 2008 revised BART analysis supersede the 2006 BART analysis.<sup>182</sup> The EPA notes that the CAA places the authority and duty to submit SIPs on the states. Under the RH regulations, it is the State who is authorized to make BART determinations for inclusion in the RH SIP submitted to EPA. As such, even if a source submits a revised BART analysis to the State and requests that the revised version supersede the one currently in the RH SIP, EPA is not authorized to take action on the revision if the State does not adopt the revised version as a revision to the RH SIP, allow the FLM to review the proposed RH SIP revision at least 60 days prior to holding any public hearing, undergo reasonable notice and public hearing, and submit the revision to EPA in the context of an official SIP submission. This did not happen.

While EPA did provide comments in a letter dated November 25, 2009, to the State on the 2008 revised BART analysis for White Bluff, this was done in the context of EPA's review of a draft Title V/Prevention of Significant Deterioration (PSD) permit for White Bluff.<sup>183</sup> Since the draft Title V permit proposed by the State proposed to incorporate the control equipment proposed by Entergy in the 2008 revised BART analysis for White Bluff, the 2008 BART analysis was provided as an attachment to the proposed permit. Our review of the draft Title V permit did not involve a full review of the 2008 BART analysis, as we were only reviewing that BART analysis in the context of providing comments to the State on the draft Title V permit. In the comment letter EPA sent to the State, we did note that we agreed that dry

scrubber technology is generally considered BART, but we also noted that we did not agree that the SO<sub>2</sub> emission limit proposed by the source is reflective of the control efficiency this control technology is capable of achieving, and that we did not agree that this SO<sub>2</sub> emission limit of 0.15 lb/MMBtu is BART. Our superficial review of the 2008 revised BART analysis also revealed that many of the same flaws we identified in our proposed rulemaking for the 2006 White Bluff BART analysis are also found in the 2008 White Bluff analysis. Furthermore, the draft Title V permit that proposed to incorporate the control equipment proposed by Entergy in the 2008 revised White Bluff BART analysis was never issued by the State.

We disagree that our rulemaking regarding White Bluff Units 1 and 2 is inaccurate and arbitrary because the EPA did not rely on the 2008 revised White Bluff BART analysis, as the 2008 revised White Bluff BART analysis is not before EPA to take action on.

#### 7. Other Comments Related to BART

*Comment:* The EPA's proposed disapproval of BART for the Entergy White Bluff auxiliary boiler is legally incorrect because the unit is not BART eligible. The EPA disapproved ADEQ's BART determination that BART for the White Bluff auxiliary boiler is a restriction to operate no more than 4360 hours annually. However, the White Bluff auxiliary boiler has only a heat input capacity of 183 MMBtu/hr, which is less than the BART-eligible threshold of 250 MMBtu/hr. The BART Guidelines supports this finding that units which are located at a steam electric plant, but which themselves are not in any of the 26 BART source categories, such as the White Bluff auxiliary boiler, should not be considered BART-eligible. Further, the Guidelines state that for fossil-fuel boilers more than 250 MMBtu/hour heat input, this category includes only those boilers that are individually greater than 250 MMBtu/hour heat input.

*Response:* The EPA agrees that the Auxiliary Boiler (SN-05) at the Entergy White Bluff Plant does not fall into "Category 2" (*i.e.* fossil-fuel boilers of more than 250 million BTU/hr heat input) under the BART Guidelines. However, as noted in our proposed rulemaking, it does fall into "Category 1" (*i.e.* steam electric plants of more than 250 million BTU/hr heat input) under the BART Guidelines. The BART Guidelines state the following regarding the BART eligibility of steam electric plants of more than 250 MMBTU/hr heat input:

"Because the category refers to 'plants,' we interpret this category title to mean that

boiler capacities should be aggregated to determine whether the 250 million BTU/hr threshold is reached. This definition includes only those plants that generate electricity for sale."<sup>184</sup>

The BART Guidelines also provide the following example to help states determine whether a boiler at a steam electric plant of more than 250 MMBtu/hr heat input falls into "Category 1" (*i.e.* steam electric plants of more than 250 million BTU/hr heat input) under the BART Guidelines:

"Example: A stationary source includes a steam electric plant with three 100 million BTU/hr boilers. Because the aggregate capacity exceeds 250 million BTU/hr for the 'plant,' these boilers would be identified in Step 2."<sup>185</sup>

Therefore, even though the Auxiliary Boiler (SN-05) at the Entergy White Bluff Plant is individually only 183 MMBtu/hr, since it is located at a plant where the aggregate capacity exceeds 250 MMBtu/hr, the Auxiliary Boiler is BART eligible and, as explained in our proposed rulemaking, subject to BART. As such, our proposed disapproval of BART for the auxiliary boiler is consistent with the BART Guidelines and is legally correct. For the reasons articulated in our proposed rulemaking, we are finalizing our proposed disapproval of BART for the Auxiliary Boiler (SN-05) at the Entergy White Bluff plant.

*Comment:* The EPA has not demonstrated in its proposed partial disapproval of Arkansas RH SIP that post-combustion controls are cost-effective. The EPA has also not demonstrated that Arkansas's reliance on presumptive limits without analyzing post-combustion controls abused its authority to determine the appropriateness of the selected BART technologies.

*Response:* The BART Guidelines provide that in identifying all options, you must identify the most stringent option as well as a reasonable set of options for analysis.<sup>186</sup> The RHR also provides that in establishing source specific BART emission limits, the State should identify and consider in the BART analysis the maximum level of emission reduction that has been achieved in other recent retrofits at existing sources in the source category.<sup>187</sup> The visibility regulations define BART as "an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission

<sup>182</sup> Letter from Mark C. Bowles, Arkansas Environmental Support Manager, to Mike Bates, Air Division Chief, ADEQ, dated August 8, 2008. Please see the docket for this rulemaking for a copy of this letter.

<sup>183</sup> Letter from Jeff Robinson, Air Permits Chief, EPA Region 6, to Tom Rheaume, Permits Branch Manager, ADEQ, dated November 25, 2009.

<sup>184</sup> Appendix Y to Part 51, section II.A.

<sup>185</sup> Appendix Y to Part 51, section II.A.

<sup>186</sup> Appendix Y to Part 51, section IV.D.

<sup>187</sup> 64 FR 35740.

reduction.” Since recent retrofits at existing sources provide a good indication of the current “best system” for controlling emissions, these controls must be considered in the BART analysis. As explained in our proposed rulemaking, post-combustion controls for NO<sub>x</sub>, SO<sub>2</sub>, and PM have been demonstrated to be technically feasible and cost-effective controls at fossil fuel fired EGUs that are similar to those that are subject to BART in Arkansas. As articulated in our proposed rulemaking (and also discussed elsewhere in our response to comments), EPA is also aware of at least one type of NO<sub>x</sub> post-combustion control (SNCR) that has been demonstrated to be technically feasible for a power boiler at a kraft pulp mill with similar design specifications as Domtar Ashdown Mill Power Boilers No. 1 and 2. Therefore, states must consider post-combustion controls in their BART analyses for NO<sub>x</sub>, SO<sub>2</sub>, and PM if such controls have been recently installed as retrofits at existing sources in the source category.

Furthermore, our disapproval of some of Arkansas’s BART determinations where the State did not consider post-combustion controls, is not based on a demonstration by EPA that post-combustion controls are cost-effective at any of Arkansas’s subject to BART sources. Instead, it is based on our finding that some of the State’s BART analyses did not satisfy the RHR and applicable EPA guidance. We did not perform a source specific BART analysis to determine if post-combustion controls are cost-effective at Arkansas’s subject to BART sources nor are we required to perform such an analysis in reviewing a SIP revision. As explained in our response to other comments and as required by CAA section 169A(g)(2) and 40 CFR 51.308(e)(1)(ii)(A), it is the State’s responsibility to conduct a five factor BART analysis that satisfies the RHR and BART Rule using the NO<sub>x</sub> and SO<sub>2</sub> presumptive emission limits as a starting point in the BART analysis. In addition, as explained above, states must consider post-combustion controls in their BART analyses for NO<sub>x</sub>, SO<sub>2</sub>, and PM if such controls are technically feasible. It is EPA’s responsibility to review the adequacy of this analysis.

*Comment:* The EPA’s proposed disapproval is inconsistent with EPA’s guidance and regulations concerning visibility protection causing regulatory uncertainty among the EGU industry. The EPA’s proposed disapproval action should be withdrawn in favor of approval of the Arkansas RH SIP.

*Response:* Because the comment is not specific about what aspect of our proposed disapproval is believed to be

inconsistent with EPA guidance and RH regulations, it is not possible for EPA to address in this response any specific concerns. Several similar comments raised very specific concerns. Our responses to these can be found elsewhere in our responses to comments. As articulated in our proposed rulemaking and further explained in our responses to other comments, EPA’s partial approval and partial disapproval of the Arkansas RH SIP is consistent with the CAA, the RHR, BART Rule, and EPA guidance. Since our rulemaking is consistent with the above, we disagree that it causes regulatory uncertainty among the EGU industry.

*Comment:* Arkansas’s BART determinations are consistent with the BART Guidelines and EPA should defer to the state’s decision. Instead of deferring to the state’s judgment about the necessary measures to implement BART within its borders, EPA proposed to substitute its judgment concerning what constitutes BART and what constitutes an acceptable LTS for making reasonable progress toward the national goal.

*Response:* The EPA disagrees that all of Arkansas’s BART determinations satisfy the CAA, the RHR, BART Rule, and EPA guidance. For some BART determinations, Arkansas adopted NO<sub>x</sub> and SO<sub>2</sub> presumptive limits without conducting a source-specific analysis of appropriate levels of control when those sources have the capability of more stringent controls. This is in contradiction with the RHR and the BART Guidelines. We have determined that Arkansas’s failure to conduct the BART analysis despite the evidence that the BART analysis might result in adoption of a different emissions limit was significant enough to result in BART determinations that were unreasoned and unjustified. Accordingly, those BART determinations, that adopted presumptive limits without conducting any additional BART analysis when information exists that may affect the BART determination, are not approvable. For some BART determinations, Arkansas did not perform a full BART analysis by not considering one or more factors it is required to consider in determining whether retrofit control should be required. We have determined that not considering one or more BART factors by Arkansas in its BART determinations, when it is demonstrable that this lack of analysis could alter the BART determination, is unreasoned and unsupported. Thus, those BART determinations, which lack the

consideration of one or more BART factors when it can be demonstrated that lack of consideration of the BART factor has the potential to alter the BART determination, are not approvable. We are also disapproving Arkansas’s LTS because it does not satisfy the requirements under 40 CFR 51.308(d)(3) by relying on BART determinations that are inconsistent with the CAA and the RHR as detailed in our BART disapproval actions.<sup>188</sup> As explained in our response to other comments, EPA agrees that States have broad authority and flexibility under the RHR.

Furthermore, we are not substituting our judgment and forcing Arkansas to adopt any specific BART determination. Rather, we are disapproving portions of Arkansas’s RH SIP that address BART, the LTS, and the RPGs because the State omitted critical analyses and made flawed assumptions that may compromise any decisions that arise from it. In doing so, the State did not satisfy the requirements of the CAA, RHR, and the BART Rule. The state could submit and EPA would approve RH SIP revisions that reached identical determinations as the current SIP submittal if Arkansas’s analyses in reaching those determinations are consistent with the CAA, RHR, and BART Rule.

*Comment:* Because of the limited ability to combust fuel oil on a short-term basis for the Domtar Ashdown Mill Power Boiler No.1, a higher SO<sub>2</sub> emission rate was proposed of 1.12 lb/MMBtu even though the average long-term emissions are low. The EPA is incorrect in stating that there is a mismatch between ADEQ’s high BART SO<sub>2</sub> emission limit and the emission needs of the Domtar Power Boiler No.1 when you take into account the actual operation of and the fuels used by the boiler.

*Response:* As articulated in our proposed rulemaking, as part of its BART analysis, the State should have conducted a fuel inventory for Domtar Power Boiler No. 1 and investigated sources of potential sulfur emissions. If the source believes that burning fuel oil on a relatively long-term basis is the primary source of high SO<sub>2</sub> emissions from Domtar Power Boiler No. 1, the State should consider in its BART analysis establishing a limit on the sulfur content of the fuel oil burned at the boiler and/or lowering the limit of fuel oil usage. In addition, if the boiler operator wishes to burn fuel oil on a long-term basis and this is the primary source of SO<sub>2</sub> emissions from the boiler, the State should evaluate SO<sub>2</sub> post-

<sup>188</sup> 76 FR at 64186, at 64187.

combustion controls in its BART analysis. A proper BART evaluation of SO<sub>2</sub> controls may demonstrate that the installation and operation of an SO<sub>2</sub> scrubber is cost-effective and would result in significant visibility improvement.

*Comment:* With regard to the evaluation of upgrades to the existing scrubber at Domtar's Power Boiler No. 2, multiple scrubber upgrades were considered including the addition of a spray tower and/or a third scrubber. Preliminary estimates of capital costs for the third scrubber exceed \$10 million not taking into account the expenses of installing the technology in a limited space. Considering Arkansas's progress towards the overall goal of the RH program, such costs are clearly not justified.

*Response:* As articulated in our proposed rulemaking, the BART Guidelines provide that if a state determines that a source has controls already in place that are the most stringent controls available and that all possible improvements to any control devices have been made, it may take a streamlined approach for the BART analysis for this source. Since the source has an existing wet scrubber for control of SO<sub>2</sub> emissions, Arkansas has elected to take this streamlined approach for Power Boiler No.2. As explained in our proposed rulemaking, we agree that SO<sub>2</sub> post-combustion controls are typically the most stringent technology available for control of SO<sub>2</sub>. However, we disagree that a BART emission limit of 1.2 lb/MMBtu for SO<sub>2</sub> is reflective of the most stringent controls available. Further, the State has not provided sufficient documentation of the upgrades considered for the existing wet scrubber. In addition, based on the information available, it also appears that the State has not considered all possible improvements to the scrubber. As articulated in our proposed rulemaking, the BART Guidelines state that there are numerous scrubber enhancements available to upgrade the average removal efficiencies of all types of existing scrubber systems, including increasing a scrubber system's reliability (and conversely decreasing its downtime) by way of optimizing operational procedures, improving maintenance practices, adjusting scrubber chemistry, and increasing auxiliary equipment redundancy.<sup>189</sup> The BART Guidelines also provide the following detailed list of potential scrubber upgrades that have been proven in the industry as cost-effective

means to increase overall SO<sub>2</sub> removal of wet systems:

- Elimination of Bypass Reheat
- Installation of Liquid Distribution Rings
- Installation of Perforated Trays
- Use of Organic Acid Additives
- Improve or Upgrade Scrubber Auxiliary System Equipment
- Redesign Spray Header or Nozzle Configuration

Based on the limited information that has been provided to EPA, it does not appear that the State has evaluated all possible improvements to the existing wet scrubber at Domtar Ashdown Mill Power Boiler No. 2. Therefore, the State must either consider all possible improvements to the existing wet scrubber (including proper documentation of these) or conduct a full five factor BART analysis that satisfies the requirements of the RHR and the BART Rule for Power Boiler No. 2. EPA is finalizing our proposed disapproval of the State's SO<sub>2</sub> BART determination for the Domtar Power Boiler No. 2.

*Comment:* The EPA should not question if the proposed SO<sub>2</sub> BART limit of 1.2 lb/MMBtu represents 90% control for Domtar's Power Boiler No. 2. The 90% control value has never been confirmed via testing. Rather this control efficiency was estimated based on a comparison of the actual maximum daily emissions measured via CEMS and the uncontrolled emission rate predicted by EPA's AP-42 data. It may be overestimated, but the percent control value is somewhat irrelevant due to the BART limit on a lb/MMBtu basis.

*Response:* As articulated in our proposed rulemaking, we agree that SO<sub>2</sub> post-combustion controls are typically the most stringent technology available for control of SO<sub>2</sub>. However, we disagree that a BART emission limit of 1.2 lb/MMBtu for SO<sub>2</sub> is necessarily reflective of the most stringent controls available. Since Arkansas has elected to take the streamlined approach for the SO<sub>2</sub> BART analysis for this source, it must ensure that the source has controls already in place that are the most stringent controls available and that all possible improvements to any control devices have been made. This has not been done. Since the State is relying on the fact that the source has the most stringent controls in place to take a streamlined approach to the BART analysis, we disagree that the control efficiency of the existing wet scrubber is irrelevant. As explained elsewhere in our response to comments, the State must either ensure it has the most stringent controls in place and consider

all possible improvements to the existing wet scrubber (including proper documentation of these) or conduct a five factor BART analysis that satisfies the requirements of the RHR and the BART Rule for Domtar Power Boiler No. 2. EPA is finalizing our proposed disapproval of the State's SO<sub>2</sub> BART determination for Domtar's Power Boiler No. 2.

*Comment:* Since EPA is proposing to partially approve and partially disapprove portions of the Arkansas SIP, EPA should clarify that the compliance dates are all based on the same final approval date of the entire SIP. Compliance should be five years after final approval by EPA.

*Response:* The EPA disagrees that compliance with the BART requirements is contingent upon full approval of the entire Arkansas RH SIP. 40 CFR 51.308(e)(iv) requires subject to BART sources to install and operate BART as expeditiously as practicable, but in no event later than 5 years after the approval of the implementation plan revision. Therefore, in the event of a partial approval of the RH SIP, those sources whose BART determinations for a particular pollutant have been approved by EPA are required to install BART as expeditiously as practicable, but in no event later than 5 years after the partial approval of the BART determination. The RH regulatory language in no way conditions the BART compliance dates on EPA's full approval of the entire RH SIP.

*Comment:* Arkansas did a proper BART evaluation for Entergy Lake Catherine Unit 4 and White Bluff Units 1 and 2 when it adopted the presumptive limits. Arkansas did the BART five factor analyses, which is consistent with the BART Guidelines. EPA's proposed disapproval of Arkansas's NO<sub>x</sub> and SO<sub>2</sub> BART determinations for Entergy's White Bluff and Lake Catherine facilities is based on EPA's incorrect evaluation of Arkansas's BART analyses and prioritizes EPA's disagreements with Arkansas concerning available technologies and the associated costs of compliance over the visibility protection program's fundamental purpose of remedying visibility impairment by 2064, which the Arkansas's RH SIP achieves. The EPA's disapproval for Arkansas's BART determinations for Entergy Lake Catherine and White Bluff facilities is a disagreement with the results of the BART determination as to the appropriate level of control for the Lake Catherine and White Bluff facilities. Accordingly, EPA should withdraw its proposed partial disapproval and approve the existing Arkansas RH SIP.

<sup>189</sup> Appendix Y to Part 51, section IV.E.4.

*Response:* As explained in our proposed rulemaking,<sup>190</sup> we disagree that Arkansas did a proper five factor BART evaluation for NO<sub>x</sub> and SO<sub>2</sub> BART when it adopted the presumptive limits for White Bluff Units 1 and 2, and we also disagree that Arkansas did a proper five factor BART evaluation for NO<sub>x</sub> BART (natural gas and fuel oil firing) and SO<sub>2</sub> and PM BART (fuel oil firing) for Lake Catherine Unit 4. We do note that in our proposed rulemaking on the Arkansas RH SIP, we proposed to find that Arkansas did not appropriately consider the costs of controls when they assumed a 10% capacity factor for Lake Catherine Unit 4 and an 85% capacity factor for White Bluff Units 1 and 2. Based on comments received during the public comment period, we have found that we made an error in proposed rulemaking in our calculation of the historical capacity factors for these units. We agree that assuming a 10% capacity factor for Lake Catherine and an 85% capacity factor for White Bluff Units 1 and 2 in the calculation of emissions reductions achieved and cost of controls is appropriate and in accordance with the BART Guidelines (see our response to similar comments for a more detailed explanation).

However, we still find that Arkansas did not appropriately consider a number of factors (as articulated in our proposed rulemaking and explained elsewhere in our response to comments) in its five-factor BART analysis for NO<sub>x</sub> BART (natural gas and fuel oil firing), and SO<sub>2</sub> and PM (fuel oil firing) BART for Lake Catherine Unit 4, and for NO<sub>x</sub> and SO<sub>2</sub> BART (bituminous and sub-bituminous coal firing) for White Bluff Units 1 and 2. The State's BART analyses for Lake Catherine Unit 4 and White Bluff Units

1 and 2 for the aforementioned pollutants do not satisfy all the requirements of the RHR and BART Guidelines. As such, our disapproval of the BART determinations for Lake Catherine Unit 4 and White Bluff Units 1 and 2 is not based on our disagreement with the results of the BART determination as to the appropriate level of control for the Lake Catherine and White Bluff facilities. Instead, our disapproval is based on our finding that Arkansas's BART analyses for these units and pollutants do not satisfy all the requirements of the RHR and BART Guidelines. The State omitted critical analyses and made flawed assumptions that compromise the resulting BART determinations. As such, until a proper five-factor BART analysis is conducted for these pollutants that satisfies all the statutory and regulatory RH requirements and adheres to the applicable guidelines, it will not be possible to know whether the level of control adopted by the State or a different level of control is BART for these units and pollutants. The state could submit and EPA would approve RH SIP revisions that reached identical determinations as the current SIP submittal if Arkansas's analysis in reaching those determinations is consistent with the RHR and applicable EPA Guidance. As explained elsewhere in our response to comments, even if the CENRAP's modeling shows that the State is expected to meet the URP for the first implementation period ending in 2018 and is projected to meet the natural visibility goal by 2064 if the same level of visibility improvement expected to take place during the first implementation is achieved for every remaining implementation period, the State of Arkansas has not satisfied all its BART requirements. We are finalizing our disapproval of BART for NO<sub>x</sub> (natural gas firing and fuel oil firing) and SO<sub>2</sub> and PM (fuel oil firing) for Lake Catherine Unit 4 and BART for NO<sub>x</sub> and SO<sub>2</sub> (bituminous and sub-bituminous coal firing) for White Bluff Units 1 and 2.

*Comment:* It appears that EPA agrees with the State's approach of developing BART determinations for each fuel-burning scenario for subject to BART units that are permitted to burn more than one type of fuel. Setting separate, individual BART limits for each fuel type that a source is physically capable of burning and permitted to burn is a generally reasonable approach to addressing multi-fuel units. Other approaches may also be reasonable if chosen by the State, so long as they do not amount to a redefinition of the

source, as would occur if use of a particular fuel-type, otherwise permitted, were prohibited or made infeasible as a result of the imposition of a BART limit.

*Response:* The EPA generally agrees with the State's approach of developing BART determinations for each fuel burning scenario for subject to BART sources that are permitted to burn more than one type of fuel, as was done for Entergy Lake Catherine Unit 4 and Entergy White Bluff Units 1 and 2. There is nothing in the RHR or the BART Guidelines prohibiting a State from doing so. Although the BART Guidelines provide that we do not consider BART as a requirement to redesign the source when considering available control alternatives,<sup>191</sup> we do note that if a State considers it appropriate, it may consider a fuel switch (*i.e.* switch from burning fuel oil to natural gas), which does not necessarily constitute a redesign of the source, as one of the options in the BART analysis for a particular source. This was done by the State of Kansas, which determined that a switch from fuel oil to natural gas satisfied the BART requirements for SO<sub>2</sub> and NO<sub>x</sub> for Westar Energy Gordon Evans Unit 2 (the unit can burn both fuel oil and natural gas).<sup>192</sup> The EPA approved Kansas' aforementioned BART determination.

*Comment:* As stated by EPA in its proposed action on the Arkansas RH SIP, neither AEP nor ADEQ performed a five-factor BART analysis for Flint Creek Boiler No. 1 (76 FR 64203). The company commented that since it was proposing to meet the presumptive BART limits for SO<sub>2</sub> and NO<sub>x</sub>, it did not need to undertake a five-factor BART analysis. This does not constitute a proper BART analysis, and EPA was right in proposing disapproval of Arkansas's SO<sub>2</sub> and NO<sub>x</sub> BART requirements for Flint Creek. The presumptive limits in EPA's BART Guidelines do not exempt a source from a five-factor BART analysis. If ADEQ or AEP-SWEPCO had performed a five-factor analysis for Flint Creek, the BART limits would likely have been lower than 0.15 lbs/MMBtu for SO<sub>2</sub> and 0.23 lbs/MMBtu for NO<sub>x</sub>.

*Response:* As explained elsewhere in this final rulemaking, we are finalizing our proposed disapproval of BART for NO<sub>x</sub> and SO<sub>2</sub> for Flint Creek Boiler No. 1 because the State did not conduct a five factor BART analysis for the source.

*Comment:* The SO<sub>2</sub> and NO<sub>x</sub> emission limits for Flint Creek Boiler No. 1 do not reflect the best system of continuous

<sup>190</sup> EPA notes that in our proposed rulemaking on the Arkansas RH SIP, we proposed to find that Arkansas did not appropriately consider the costs of controls when they assumed a 10% capacity factor for Lake Catherine Unit 4 and an 85% capacity factor for White Bluff Units 1 and 2. Based on comments received during the public comment period, we have found that we made an error in proposed rulemaking in our calculation of the historical capacity factors for these units. We agree that assuming a 10% capacity factor for Lake Catherine and an 85% capacity factor for White Bluff Units 1 and 2 in the calculation of emissions reductions achieved and cost of controls is appropriate and in accordance with the BART Guidelines (see our response to other comments in our response to comments for a more detailed explanation). However, we still find that Arkansas did not appropriately consider a number of factors (as articulated in our proposed rulemaking and explained elsewhere in our response to comments) in its five factor BART analysis for NO<sub>x</sub> BART (natural gas and fuel oil firing), and SO<sub>2</sub> and PM (fuel oil firing) BART for Lake Catherine Unit 4, and for NO<sub>x</sub> and SO<sub>2</sub> BART (bituminous and sub-bituminous coal firing) for White Bluff Units 1 and 2. Therefore, we are finalizing our disapproval of BART for the aforementioned pollutants and units.

<sup>191</sup> Appendix Y to Part 51, section IV.D.1.

<sup>192</sup> 76 FR 52604 and 76 FR 80754.

SO<sub>2</sub> and NO<sub>x</sub> emission reduction and EPA cannot find that these emission limits satisfy the legal BART requirements without a five-factor BART analysis. The proposed SO<sub>2</sub> BART limit of 0.15 lbs/MMBtu for Flint Creek reflects only 67% removal from the uncontrolled 2010 average annual SO<sub>2</sub> emission rate of 0.46 lbs/MMBtu. The best system of continuous SO<sub>2</sub> emission reductions is a wet scrubber, which can achieve 95–99% removal. The next best system of continuous SO<sub>2</sub> emissions reductions is a dry scrubber, which can achieve 90–95% SO<sub>2</sub> removal. EPA recently proposed and finalized as a FIP the installation of dry scrubbers as BART at six coal-fired EGUs in Oklahoma to achieve the SO<sub>2</sub> BART emission limit of 0.6 lbs/MMBtu on a 30-day rolling average basis. The Oklahoma units are all similar to Flint Creek in size and coal type. This provides evidence that had a proper five factor BART analysis been done for Flint Creek, the SO<sub>2</sub> BART limit would have been lower than 0.15 lb/MMBtu. Similarly, a five-factor analysis for NO<sub>x</sub> at Flint Creek would have required the evaluation of SCR and SNCR, which can achieve NO<sub>x</sub> emission limits lower than 0.23 lbs/MMBtu. If SCR had been evaluated as BART for NO<sub>x</sub>, emissions would have been 78% lower, providing significant benefits to the State's Class I areas. NO<sub>x</sub> BART emission limits as low as 0.5 lb/MMBtu have been promulgated (76 FR 52390, 52439).

*Response:* The EPA agrees that we cannot approve the State's BART determinations for SO<sub>2</sub> and NO<sub>x</sub> for Flint Creek Boiler No. 1 because the State adopted presumptive limits as meeting BART for the source without conducting a BART five-factor analysis. The EPA also believes that a proper evaluation of the five statutory factors is likely to demonstrate that emission limits lower than the NO<sub>x</sub> and SO<sub>2</sub> presumptive emission limits are BART for Flint Creek Boiler No. 1. We are finalizing our proposed disapproval of the State's BART determinations for SO<sub>2</sub> and NO<sub>x</sub> for Flint Creek Boiler No. 1.

With regard to the comment that a wet scrubber is the "best system of continuous emissions reductions" for SO<sub>2</sub> and a dry scrubber is the next "best system of continuous emissions reductions" for SO<sub>2</sub>, we note that 40 CFR 51.308(e)(1)(ii)(B) directs States to identify the "best system of continuous emissions control technology" taking into account "the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use at the source, and the

remaining useful life of the source." Therefore, while we agree that a wet scrubber and a dry scrubber are generally the two most stringent control technologies available for control of SO<sub>2</sub> emissions and have been found to be BART for many sources, we disagree that a wet scrubber or a dry scrubber will necessarily be BART in every case.

*Comment:* The EPA's proposal is correct that the White Bluff BART analyses for SO<sub>2</sub> and NO<sub>x</sub> in the Arkansas RH SIP are incomplete and inadequate because the company only evaluated options to comply with the presumptive BART limits rather than evaluating emission limits reflective of the best system of continuous emission reduction at White Bluff Units 1 and 2. In Entergy's 2006 BART analysis, which is part of the Arkansas RH SIP, the company did not explain why it proposed a 0.15 lb/MMBtu SO<sub>2</sub> emission limit for either a wet scrubber or a dry scrubber, when the higher control efficiency associated with a wet scrubber would result in the ability to meet a lower SO<sub>2</sub> emission limit. Also, the proposed SO<sub>2</sub> BART limit of 0.15 lb/MMBtu only reflects approximately 80% control from the base case SO<sub>2</sub> emission rates, and not the 95% and 92% control efficiency capable of being achieved by a wet and dry scrubber, respectively. Entergy's 2006 BART analysis did note that the resulting SO<sub>2</sub> emission limit from either control technology would "depend on the future coal sulfur content" (see Appendix 9.3 of Arkansas RH SIP). Entergy's revised 2008 BART analysis, which has not been adopted by Arkansas or submitted to EPA as a RH SIP revision, elaborated on this, explaining that 2 lb/MMBtu SO<sub>2</sub> is assumed as the highest coal sulfur content for dry scrubbing and 3 lb/MMBtu is assumed for wet scrubbing. Taking into account Entergy's projected future coal sulfur content (which varies depending on the control technology used) and Entergy's claimed percent removal efficiencies for the control technologies considered, the resulting emission limit just happens to equal EPA's presumptive BART limit for SO<sub>2</sub> of 0.15 lb/MMBtu. White Bluff is not authorized to burn coal of unlimited sulfur or ash content, and the higher uncontrolled coal sulfur content that Entergy assumed in its December 2006 BART analysis (as well as in its revised 2008 BART analysis) is prohibited from being utilized at the White Bluff units under the terms of the White Bluff permit. It would be virtually impossible for White Bluff to comply with Permit Condition IV.6 in its Title V permit and

burn coal with uncontrolled SO<sub>2</sub> emissions at the inlet to the scrubber of 2 lb/MMBtu, much less 3 lb/MMBtu. The future uncontrolled SO<sub>2</sub> emission rate must not be raised above the level of uncontrolled SO<sub>2</sub> emissions/coal sulfur content authorized by the White Bluff permit and EPA must make clear that the assumed uncontrolled SO<sub>2</sub> emission rate cannot be improperly inflated in proposing a BART emission limitation. EPA has commented on the BART determinations of the Wisconsin Department of Natural Resources as well as other states that BART cannot be based on characteristics of coal that might be burned in the future (see Exhibit 18). Instead, it is to be based on the fuel characteristics during the base case. If Entergy plans to burn higher sulfur coal in the future as compared to that utilized in the base case, that must be made clear in the BART analysis because sulfur content of coal should be considered in determining whether it is most beneficial to install a wet scrubber or a dry scrubber.

*Response:* The EPA agrees that in its SO<sub>2</sub> BART analysis for White Bluff Units 1 and 2, the State did not explain why it proposed a 0.15 lb/MMBtu SO<sub>2</sub> emission limit for either a wet scrubber or a dry scrubber, when the higher control efficiency associated with a wet scrubber would result in the ability to meet a lower SO<sub>2</sub> emission limit. EPA also agrees that the State's proposed SO<sub>2</sub> BART limit of 0.15 lb/MMBtu only reflects approximately 80% control from the base case SO<sub>2</sub> emission rates, and not the 95% and 92% control efficiency capable of being achieved in many cases by a wet and dry scrubber, respectively. EPA also agrees that the BART Guidelines provide that BART must be based on the fuel characteristics during the base case. If a source projects that future operating parameters (*i.e.* limited hours of operation or capacity utilization, type of fuel, raw materials or product mix or type) will differ from past practice, resulting in greater (or less) emissions, the State must make this clear in the BART evaluation, as it may have an impact on the cost analysis and the ultimate selection of BART. Since the State did not properly document the cost of the SO<sub>2</sub> control options considered in the BART analysis (including a reasonably detailed line by line breakdown of costs), we were not able to determine if the parameters assumed in the State's cost analysis for White Bluff Units 1 and 2 are reflective of the base case. As explained elsewhere in this final rulemaking, we are finalizing our proposed disapproval of SO<sub>2</sub> BART for



Entergy White Bluff Units 1 and 2 for both the bituminous and sub-bituminous coal firing scenarios.

*Comment:* The EPA's proposed disapproval of the SO<sub>2</sub>, NO<sub>x</sub>, and PM BART determinations for fuel oil firing for Entergy Lake Catherine Unit 4 is correct because Entergy's BART analyses for the fuel oil firing scenario are inadequate. Neither Entergy nor ADEQ considered and evaluated post-combustion controls for the fuel oil firing scenario, and Entergy improperly assumed only a 10% capacity factor in the cost-effectiveness calculations, even though the unit's capacity factor is not limited by any enforceable requirement. The EPA is also correct in not allowing the unit to be exempt from BART for the fuel oil firing scenario until the Lake Catherine permit is revised to prohibit Unit 4 from burning fuel oil.

*Response:* The EPA agrees that the State did not evaluate any SO<sub>2</sub> post-combustion controls and did not properly evaluate NO<sub>x</sub> post-combustion controls for Entergy Lake Catherine Unit 4 for the fuel oil firing scenario.

Based on comments received during the public comment period, it has come to our attention that we made an error in our calculation of the capacity factor for recent years for Lake Catherine Unit 4. Based on the information provided, we agree that the source has historically operated at less than a 10% capacity factor. The BART Guidelines provide that for the purpose of calculating the cost of controls, the State may calculate baseline emissions based upon continuation of past practice.<sup>193</sup> However, as explained in more detail in our response to other comments and in our proposed rulemaking, we find that the State did not properly document the cost analysis for NO<sub>x</sub>, SO<sub>2</sub>, and PM controls for fuel oil firing for Entergy Lake Catherine Unit 4 because the proper documentation necessary to allow us to make an informed and proper evaluation of the BART analysis was not included in the SIP, as the BART Guidelines require.

Therefore, we are finalizing our proposed disapproval of BART for NO<sub>x</sub> for both the natural gas and fuel oil firing scenarios, and SO<sub>2</sub> and PM for the fuel oil firing scenario.

*Comment:* The EPA's proposed disapproval of Arkansas's BART determinations for SO<sub>2</sub>, NO<sub>x</sub>, and PM for AECC's Bailey Unit 1 and McClellan Unit 1 is correct. ADEQ must comply with the requirement that once a unit is determined to be subject to BART, a BART determination must be made for all pollutants emitted by the source

(see 40 CFR part 51, § 51.301 and Appendix Y, section IV.A). EPA must also disapprove the PM BART requirements because there was no determination of BART for PM<sub>2.5</sub>.

*Response:* While we are finalizing our proposed disapproval of the State's BART determinations for SO<sub>2</sub>, NO<sub>x</sub>, and PM for AECC's Bailey Unit 1 and McClellan Unit 1, we disagree that we must disapprove the PM BART determination because the State did not make a BART determination for PM<sub>2.5</sub>. The BART Guidelines do not specify that States must establish a BART limit for both PM<sub>10</sub> and PM<sub>2.5</sub>. The BART Guidelines provide the following:

"You must look at SO<sub>2</sub>, NO<sub>x</sub>, and direct particulate matter (PM) emissions in determining whether sources cause or contribute to visibility impairment, including both PM<sub>10</sub> and PM<sub>2.5</sub>."<sup>194</sup>

This language in the BART Guidelines was intended to clarify to States that when determining whether a source is subject to BART, the modeling evaluation to determine the source's impact on visibility has to account for both PM<sub>10</sub> and PM<sub>2.5</sub> emissions. There are several instances in which we state in both the preamble to the RHR, and in the BART Guidelines that PM<sub>10</sub> may be used as indicator for PM<sub>2.5</sub> in determining whether a source is subject to BART. Neither the RHR nor the BART Guidelines specify that States must make separate BART determinations for PM<sub>10</sub> and PM<sub>2.5</sub>. Therefore, we disagree that we must disapprove the PM BART determination for AECC's Bailey Unit 1 and McClellan Unit 1 on the basis that a BART determination for PM<sub>2.5</sub> was not made.

*Comment:* The EPA's proposed disapproval of the SO<sub>2</sub> and NO<sub>x</sub> BART determinations for the Domtar Power Boilers No. 1 and 2 the EPA's proposed disapproval of the PM BART determination for Domtar Power Boiler No. 2 are correct for the reasons given by EPA in its proposed rulemaking (76 FR 64207–210).

*Response:* Consistent with the comment, we are finalizing our proposed disapproval of the State's SO<sub>2</sub> and NO<sub>x</sub> BART determinations for the Domtar Power Boilers No. 1 and 2 and the State's PM BART determination for Domtar Power Boiler No. 2

*Comment:* There is significant interest in the application of appropriate BART requirements for the Flint Creek Power Plant, the White Bluff Steam Electric Station, the AECC Carl E. Bailey Generating Station, and the AECC John L. McClellan Generating Station. It is critical to ensure that ratepayers are not

burdened by improper and/or unnecessary requirements. EPA's proposed rule will impose unnecessary and/or improper costs and requirements on these and other Arkansas facilities. ADEQ's original RH SIP submission fully met the requirements of the CAA and its implementing regulations.

*Response:* We disagree that our final action will impose unnecessary and improper requirements on Arkansas's subject to BART sources. In fact, for the BART determinations we are disapproving, we are not imposing or requiring a specific BART emission limit or cost. As explained elsewhere in our response to comments, our partial disapproval of Arkansas's RH SIP is a proper exercise of our authority under the CAA. Our role is to review the RH SIP submittal and determine if the state met the applicable statutory and regulatory requirements. When reviewing state SIPs, we must consider not only whether the State considered the appropriate factors in making decisions but also whether it acted reasonably in doing so. Some of Arkansas's BART determinations for its subject to BART sources, among other portions of the RH SIP, were not developed in accordance with the RHR and the BART Guidelines, as discussed in our proposed rulemaking and elsewhere in this final rulemaking. We are not imposing additional requirements beyond what the RHR and the BART Guidelines require. Therefore, we disagree that our proposed rulemaking, as finalized in this rulemaking, imposes unnecessary requirements on Arkansas's subject to BART sources.

*Comment:* Since limiting the sulfur content of fuel oil to 1.0% by weight at the Bailey Unit 1 and McClellan Unit 1 is cost-effective and post-control modeling predicted that visibility impacts to Class I areas would be below the 0.5 dv contribution threshold, this control option was selected as BART. It is unnecessary to perform additional analyses for lower sulfur fuel oil for Bailey Unit 1 and McClellan Unit 1.

*Response:* While we agree that limiting the sulfur content of fuel oil to 1.0% by weight at the AECC Bailey Unit 1 and McClellan Unit 1 is extremely cost-effective (\$54.90/ton SO<sub>2</sub> removed for Bailey Unit 1 and \$158.60/ton SO<sub>2</sub> removed for McClellan Unit1), we find that it is very likely that other options that would result in greater visibility improvement may also be found to be cost effective. According to the Arkansas RH SIP, the post-control modeling demonstrates that with the SO<sub>2</sub> BART controls selected by the State for AECC Bailey Unit 1, the visibility

<sup>193</sup> Appendix Y to Part 51, section IV.A.

<sup>194</sup> Appendix Y to Part 51, section III.A.2.

impact would be 0.897 dv at Caney Creek, 0.574 dv at Upper Buffalo, 0.809 dv at Hercules Glades, and 0.766 dv at Mingo.<sup>195</sup> According to the Arkansas RH SIP, the post-control modeling demonstrates that with the SO<sub>2</sub> BART controls selected by the State for AECC McClellan Unit 1, the visibility impact would be 1.011 at Caney Creek and 0.487 dv at Upper Buffalo.<sup>196</sup> We note this constitutes approximately a 50% improvement in visibility across all areas. As such, if Arkansas conducts a proper five factor BART analysis that considers all five statutory factors and evaluates more stringent controls, such as a 0.5% or lower limit for the sulfur content of fuel oil used, Arkansas may find one or more of these more stringent controls to be cost-effective and result in even more visibility improvement than that resulting from the control option it selected. As explained in our proposed rulemaking, the visibility regulations define BART as “an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction.” Since recent retrofits at existing sources provide a good indication of the current “best system” for controlling emissions, these controls must be considered in the BART analysis. The BART Guidelines provide that in identifying all options, States must identify the most stringent option (*i.e.* maximum level of control each technology is capable of achieving) as well as a reasonable set of options for analysis.<sup>197</sup> The RHR states that in establishing source specific BART emission limits, the State should identify and consider in the BART analysis the maximum level of emission reduction that has been achieved in other recent retrofits at existing sources in the source category.<sup>198</sup> Fuel oil with a sulfur content of 0.5% by weight or less is being utilized in industry. In considering use of fuel oil with low

sulfur content as a control option in the BART analysis, AECC did not identify and consider the maximum level of control achievable from the use of low sulfur fuel oil, and therefore, did not satisfy the RHR requirements.

In addition, as pointed out in the TSD for our proposed rulemaking on the Arkansas RH SIP, even though the State’s cost analysis showed that wet scrubbers are cost-effective (\$2,108.25/ton SO<sub>2</sub> removed and \$1,658.32/ton SO<sub>2</sub> removed), Arkansas did not evaluate the visibility impact of this control option. As explained in more detail elsewhere in our response to comments, the BART Guidelines require a State to evaluate all five statutory factors before eliminating a particular control option for BART.<sup>199</sup> As articulated in our proposed rulemaking on the Arkansas RH SIP, the State must perform a cost analysis in which all cost estimates are properly documented and must evaluate the visibility impacts of all technically feasible control options considered before making a BART determination. This was not done in Arkansas’s SO<sub>2</sub> BART analysis for the AECC Bailey Unit 1 and McClellan Unit 1. As such, the BART analysis for SO<sub>2</sub> for AECC Bailey Unit 1 and McClellan Unit 1 does not satisfy the RHR and CAA requirements.

Therefore, we believe that it is necessary for Arkansas to perform additional analyses to evaluate the cost and visibility impact of using lower sulfur fuel oil at Bailey Unit 1 and McClellan Unit 1. It must also evaluate the visibility impact of wet scrubbers and any other control options considered in the BART analysis before making a BART determination.

*Comment:* The results of the initial BART modeling performed in 2006, which was cumulative modeling of SO<sub>2</sub>, NO<sub>x</sub>, and PM, indicated that both the AECC Bailey Unit 1 and McClellan Unit 1 cause visibility impacts at one or more Class I areas. Pollutant-specific modeling was then performed and the results of the pollutant-specific modeling for NO<sub>x</sub> were all less than 0.5 dv, demonstrating that NO<sub>x</sub> neither caused nor contributed to visibility impacts. For this reason, a NO<sub>x</sub> engineering analysis was unnecessary and not performed. The EPA previously had an opportunity to comment on this issue about two years prior to ADEQ submitting its draft SIP to EPA, when ADEQ forwarded a question to EPA in an email dated October 19, 2006, asking whether or not five factor analyses were required for NO<sub>x</sub> and PM since both pollutants showed no impacts. No

response to the question was ever received by ADEQ from EPA.

*Response:* While we regret any kind of miscommunication or lapse of communication that may have occurred between us and Arkansas, we note that it is ultimately the State’s duty to make sure that its RH SIP satisfies all the regulatory and statutory requirements and is consistent with all applicable EPA guidance. As explained elsewhere in our response to comments, the pollutant-specific analysis approach for NO<sub>x</sub> and SO<sub>2</sub> used to evaluate controls at these AECC units does not take into consideration the chemical interaction between these two pollutants and ammonia present in the atmosphere. A reduction in sulfate emissions, while most likely reducing visibility impairment overall, can result in an increase in visibility impairment from nitrate due to the increase in ammonia available to react with nitrate to form visibility impairing aerosol. The pre-control modeling results indicate that nitrate is a significant contributor to visibility impairment on some days and this contribution can increase under conditions of decreased SO<sub>2</sub> emissions. Therefore, NO<sub>x</sub> and SO<sub>2</sub> emissions should be modeled together and emission control technologies should be evaluated for both pollutants. We are finalizing our proposed disapproval of the State’s NO<sub>x</sub>, SO<sub>2</sub>, and PM BART determinations of the AECC Bailey Unit 1 and McClellan Unit 1.

*Comment:* We do not agree with EPA’s proposed approval of no BART determination for SO<sub>2</sub> for the gas-firing scenario for Entergy Lake Catherine Unit 4 (76 FR 64203–204). Once a source is determined to be subject to BART, a BART determination must be made for all pollutants emitted by the source (see 40 CFR part 51, § 51.301 and appendix Y, section IV.A). Since the unit emits some SO<sub>2</sub> when firing gas, it must be subject to a BART limit. EPA cannot exempt the unit from an SO<sub>2</sub> BART analysis when firing natural gas just because SO<sub>2</sub> emissions are considered to be low when combusting such fuel. A BART analysis may show that the SO<sub>2</sub> limit currently in the Lake Catherine Title V permit satisfies BART, but that will not be known until a BART analysis is done.

*Response:* In our review of the Arkansas RH SIP, we evaluated the determination by ADEQ that SO<sub>2</sub> emissions when burning natural gas are very low and that no additional SO<sub>2</sub> controls are required at Entergy Lake Catherine Unit 4. Furthermore, the modeling results submitted by Arkansas in Appendix 9.2B of the Arkansas RH SIP indicate that under natural gas firing

<sup>195</sup> See Table 9.4b of the Arkansas RH SIP. Note that the pre and post control visibility impact shown on Table 9.4b is the modeled maximum visibility impact at each affected Class I area. As explained in our proposed rulemaking, the original meteorological databases generated by CENRAP did not include observations as EPA guidance recommends. Therefore, in their evaluation to determine if a source exceeds the 0.5 dv contribution threshold at nearby Class I areas, states used the 1st high values (*i.e.* maximum value) of modeled visibility impacts instead of the 8th high values (*i.e.* 98th percentile value). The use of the 1st high modeled values was agreed to by EPA, representatives of the Federal Land Managers, and CENRAP stakeholders.

<sup>196</sup> See Table 9.4c of the Arkansas RH SIP. Note that the pre and post control visibility impact shown on Table 9.4c is the modeled maximum visibility impact at each affected Class I area.

<sup>197</sup> Appendix Y to Part 51, section IV.

<sup>198</sup> 64 FR 35740.

<sup>199</sup> 70 FR 39130 and 39131.

conditions, NO<sub>x</sub> contributes over 99.9% of Lake Catherine Unit 4's total visibility impacts at all nearby Class I areas on the most impacted days. Based on the State's modeling results, the visibility impact of this unit from SO<sub>2</sub> emissions alone is so minimal such that any requirement for additional SO<sub>2</sub> controls on this unit would have virtually no visibility benefit. It is clear that the most effective controls to address visibility impairment from the source during natural gas firing are those that would reduce emissions of NO<sub>x</sub>. Therefore, in our proposed rulemaking, we agreed that it was appropriate for the State to not establish an SO<sub>2</sub> BART emission limit (*i.e.* no additional controls) for the natural gas firing scenario. This is consistent with the BART Rule, which states the following:

"Consistent with the CAA and the implementing regulations, States can adopt a more streamlined approach to making BART determinations where appropriate. Although BART determinations are based on the totality of circumstances in a given situation, such as the distance of the source from a Class I area, the type and amount of pollutant at issue, and the availability and cost of controls, it is clear that in some situations, one or more factors will clearly suggest an outcome. Thus, for example, a State need not undertake an exhaustive analysis of a source's impact on visibility resulting from relatively minor emissions of a pollutant where it is clear that controls would be costly and any improvements in visibility resulting from reductions in emissions of that pollutant would be negligible. In a scenario, for example, where a source emits thousands of tons of SO<sub>2</sub> but less than one hundred tons of NO<sub>x</sub>, the State could easily conclude that requiring expensive controls to reduce NO<sub>x</sub> would not be appropriate."<sup>200</sup>

Based on our analysis of the data submitted by ADEQ in the Arkansas RH SIP, and our agreement that SO<sub>2</sub> emissions from burning natural gas are very low, we proposed to find that it is appropriate for the State to establish no additional control for SO<sub>2</sub> BART. The BART Rule provides that states may determine that for a given source no additional control satisfies the BART requirement for a particular pollutant.<sup>201</sup> In such cases, it is not necessary for a state to establish an emission limit when no additional control is BART. For example, in our final approval of the Kansas RH SIP, we approved the State's determination that no additional control (and no new

BART emission limit) for PM is BART for a number of sources.<sup>202</sup> In our final approval of the Oklahoma RH SIP, we also approved the State's determination that no additional control (and no new BART emission limit) for PM is BART for a number of sources.<sup>203</sup> In the above cases, Kansas and Oklahoma adopted no new PM emission limit for PM BART, and we approved this based on the sources' low visibility impact attributable to PM emissions. As such, our proposed approval of Arkansas's determination that no additional controls for SO<sub>2</sub> for the natural gas firing scenario satisfies SO<sub>2</sub> BART for Lake Catherine Unit 4 is consistent with the BART Rule and consistent with our action on the RH SIPs of other states.

#### *D. Comments on the Arkansas Pollution Control and Ecology Commission Variance for Subject to BART*

*Comment:* The EPA cannot approve any of the BART determinations because each of the BART determinations is premised by Arkansas to implement only 5 years after EPA fully approves the entire RH SIP. Arkansas's enforceability of BART requirements are codified in Chapter 15 of Regulation No. 19 and modified in March 2010. Since EPA has not yet proposed full approval of the Arkansas RH SIP, EPA's partial approval of some pollutant-specific BART requirements in Regulation No. 19 for some of Arkansas's subject to BART sources will not meet the requirements of 40 CFR 51.308(e)(iv). Also, the APCEC variance does not account for the possibility that EPA may impose a partial FIP for RH in Arkansas, and thus, under the variance, the backstop BART compliance deadline will be delayed indefinitely.

*Response:* We do not believe that the 2008 submitted Chapter 15 of APCEC Regulation No. 19 and its subsequent modification submitted to us on August 3, 2010, creates an enforceability timeframe less stringent than that required under 40 CFR 51.308(e)(iv). We do not read that the partial approval of Arkansas BART determination means that the enforceability timeframe is 5 years from the *full* approval of the AR RH SIP. Section 110(k)(3) of the amended Act addresses the situation in which an entire submittal, or a separable portion of a submittal, meets all applicable requirements of the Act. In the case where a separable portion of the submittal meets all the applicable requirements, partial approval may be used to approve that part of the submittal and disapprove the

remainder. Since the portions of the RH SIP submittal we are approving are separable from the portions we are disapproving as explained above, each approved BART determination for a particular pollutant for a given source will have an enforceable date of 5 years from the date of EPA's approval. If Arkansas fails to submit a revised RH SIP that is approvable for the severable BART determinations we are disapproving today, we will promulgate a FIP for the disapproved BART determinations; in that case, the compliance deadline will be no later than 5 years from the date of the FIP promulgation.

As explained in our proposed rulemaking and as pointed out in another comment, the APCEC variance granted to Arkansas's subject to BART sources on March 26, 2010, will require compliance with BART requirements "as expeditiously as practicable but in no event later than five (5) years after EPA approval of the Arkansas Regional Haze SIP."<sup>204</sup> As explained in our response to that comment, we agree that the APCEC variance was never submitted to EPA as a revision to the SIP. The operative rule before us is Chapter 15 of Regulation No. 19 (*i.e.* the State RH Rule), which requires compliance with BART either six years after the effective date of the State's regulation or five years after EPA approval of the Arkansas RH SIP, whichever is first.<sup>205</sup> Although we believe this timeframe is consistent with the requirements under 40 CFR 51.308(e)(iv), because of the variance granted to all Arkansas subject to BART sources, the State of Arkansas no longer has the legal authority to enforce compliance within the timeframe required by Chapter 15 of APCEC Regulation No. 19, which is before us to act upon. Specifically, Arkansas no longer has the authority to enforce compliance with BART within six years after the effective date of its regulation. 40 CFR 51.230 requires that a state must show it has the legal authority to enforce a rule that is submitted as part of the SIP. Therefore, we are disapproving the portion of the BART compliance provision found in the 2008 submitted Chapter 15 of APCEC Regulation No. 19 that requires compliance with BART requirements no later than six years after the effective date of the State's regulation. For

<sup>204</sup> A copy of the March 26, 2010, APCEC Minute Order granting all Arkansas subject to BART sources a variance from the compliance deadline imposed by the State's RH Rule can be found in the docket associated with this rulemaking.

<sup>205</sup> The State's BART compliance requirements are found at Reg. 19.1504(B).

<sup>200</sup> 70 FR 39116.

<sup>201</sup> 70 FR 39116.

<sup>202</sup> 76 FR 52604 and 76 FR 80754.

<sup>203</sup> 76 FR 16168 and 76 FR 81728.

purposes of our action on the RH SIP submissions, we are partially approving and partially disapproving the portion of the BART compliance provision in Chapter 15 of APCEC Regulation No. 19, that requires each Arkansas subject to BART source to install and operate BART as expeditiously as practicable, but in no event later than five years after EPA approval of the Arkansas RH SIP, such that our disapproval is of those portions of the regulation that correspond to portions of the Arkansas RH SIP we are disapproving. We find that this is consistent with the requirements under 40 CFR 51.308(e)(iv). Arkansas's inclusion of the compliance provision that would require Arkansas subject to BART sources to install and operate BART no later than six years after the effective date of the State's regulation (if such date takes place before five years from EPA approval of the Arkansas RH SIP) is not a required element of the Regional Haze SIPs to be developed and submitted by States pursuant to section 169 of the CAA. Therefore, we are finalizing our approval of the BART determinations for which we proposed approval.

*Comment:* Arkansas has not submitted the APCEC variance to EPA as part of the Arkansas RH SIP. The version of APCEC Regulation No. 19 that EPA is proposing to approve requires compliance with BART emission limitations no later "than 6 years after the effective date of [Chapter 15 of APCEC Regulation No. 19] or five years after EPA approval of the Arkansas Regional Haze State Implementation Plan \* \* \*" (see APCEC Reg. 19.1504(B) in EPA-R06-OAR-2008-0727-0004). Compliance with BART under the version of APCEC Reg. 19.1504(B) that has been submitted to EPA is required by October 15, 2013, yet ADEQ will have no authority to enforce compliance with the deadline that will be in effect under the version of APCEC Regulation No. 19 being proposed for approval by EPA. EPA's proposed partial approval would be of a rule that ADEQ has no authority to enforce. Given that States are required to have legal authority to enforce the requirements of the SIP (see 40 CFR 51.230(b)), EPA cannot legally approve the BART compliance deadline in APCEC Reg. 19.1504(B) until Arkansas properly revises its SIP to address the terms of the variance and submits it to EPA for approval. EPA seemingly ignores the fact that the variance was not adopted by the State as a SIP revision, was not submitted to EPA as a SIP revision, and is not being acted on

by EPA in this proposed rulemaking action. Further, the APCEC variance allows for BART compliance deadlines less stringent than the BART compliance deadlines of 40 CFR 51.308(e)(iv) of the Federal RH regulations because under the variance, compliance would not be required until 5 years from EPA's full approval of the Arkansas RH SIP. Therefore, EPA cannot approve any of the BART determinations in the Arkansas RH SIP.

*Response:* As stated in our proposal, Chapter 15 of APCEC Regulation No. 19, was submitted by ADEQ on September 23, 2008, as part of the RH SIP submittal. The 2008 submitted Chapter 15 of Regulation No. 19 requires each subject to BART source to install and operate BART as expeditiously as practicable, but in no event later than six years after the effective date of Arkansas's Chapter 15 of APCEC Regulation No. 19 or five years after approval of the SIP or plan revision by EPA, whichever comes first. ADEQ did revise APCEC Regulation No. 19, including Chapter 15, and submitted these changes to EPA in 2010 but this revised submittal did not include revisions to the provision for BART compliance timeframe. We agree with the comment that the APCEC variance that requires BART compliance as expeditiously as practicable but in no event later than five years after our approval of the Arkansas RH SIP has never been submitted to us as a revision to the SIP. We do not believe, however, this means we cannot finalize the approval of the BART determinations for which we proposed approval. We agree that because of the APCEC variance, Arkansas no longer has the authority to enforce compliance with BART within six years after the effective date of the State's regulation. 40 CFR 51.230 requires that a state must show it has the legal authority to enforce a rule that is submitted as part of the SIP. Therefore we are disapproving the portion of the BART compliance provision found in the 2008 submitted Chapter 15 of Regulation No. 19 that requires compliance with BART requirements no later than six years after the effective date of the State's regulation. For purposes of our action on the RH SIP submissions, we are partially approving and partially disapproving the portion of the BART compliance provision that requires each Arkansas subject to BART source to install and operate BART as expeditiously as practicable, but in no event later than five years after our approval of the Arkansas RH SIP. We find that this is consistent with the

requirements under 40 CFR 51.308(e)(iv). Arkansas's inclusion of the compliance provision that would require Arkansas subject to BART sources to install and operate BART no later than six years after the effective date of the State's regulation (if such date takes place before five years from EPA approval of the Arkansas RH SIP) is not a required element of the Regional Haze SIPs to be developed and submitted by States pursuant to section 169 of the CAA. We also note that with the exception of the PM BART determination for the Domtar Ashdown Mill Power Boiler No. 1, our partial approval of the State's BART determinations is based on a finding that no additional control is required. Therefore the compliance date is not relevant for RH purposes since no additional controls would be expected for these sources.

Our actions approving some BART determinations and disapproving some BART determinations for Arkansas sources are severable. We can approve some of the rules and disapprove the rest as long as the rules that are disapproved do not affect those that are approved. This is the case in our partial approval and partial disapproval action, in which we are disapproving the severable BART determinations for some of the units and approving the severable BART determinations for some of the units in Arkansas's RH SIP. Since the portions of the RH SIP submittal we are approving are severable from the portions we are disapproving as explained above, each approved BART determination for a particular pollutant for a given source will have an enforceability of 5 years from the date of EPA's approval. If EPA cannot approve a revised RH SIP for the severable BART determinations EPA is disapproving today before the end of the 2 year FIP clock, EPA will promulgate a FIP for the severable BART determinations EPA is disapproving today. In that case, the compliance deadline will be as expeditious as practicable, but no later than 5 years from the date of the FIP promulgation. Therefore, EPA disagrees that compliance is required no later 5 years from EPA's *full* approval of the *entire* Arkansas RH SIP.

*Comment:* Under the Federal RH regulations, compliance with BART is required "as expeditiously as practicable," and in no event later than five years after approval of the SIP (see 40 CFR 51.308(e)(iv), and 42 U.S.C. 7491(b)(2)(A)). However, all parties seem to ignore this regulatory requirement. Considering this regulatory requirement and the significant delay in

getting an approved RH SIP or FIP in place for Arkansas, EPA must consider tighter deadlines for BART compliance.

*Response:* It is our role to determine if the State SIP submittal meets the requirements of the CAA. Only in the context of a FIP are we in a position to make our own determination about the appropriate compliance deadline. It is our expectation that the State will correct the deficiencies in the SIP and submit a revised plan that we can approve before the expiration of the mandatory FIP clock for the portions of the SIP we are disapproving in this final rulemaking action. However, if this does not occur and we are forced to promulgate a FIP, we will consider at such time what the appropriate compliance deadline is in light of the final BART determination.

#### *E. Comments on BART and the Forthcoming MACT Requirements*

*Comment:* Flint Creek Boiler No. 1 and White Bluff Units 1 and 2 will be subject to EPA's forthcoming EGU MACT requirements, and the BART Guidelines provide that MACT requirements should be taken into account in determining BART (see 40 CFR part 51, appendix Y, section IV.C). The EPA has proposed a total PM limit for existing EGUs of 0.03 lb/MMBtu, as a surrogate limit for non-mercury metal hazardous air pollutants (HAPs) (see 76 FR 24975). EPA should not approve the lax PM limit of 0.1 lb/MMBtu for Flint Creek Boiler No. 1 and Entergy White Bluff Units 1 and 2 as meeting BART for PM because that emission limit is much less stringent than the forthcoming PM MACT requirement. Recent stack testing for White Bluff Units 1 and 2 show that the units will not be able to meet EPA's proposed mercury MACT limit for existing units of 1.2 lb/MMBtu. It is likely that both Flint Creek Boiler No. 1 and White Bluff Units 1 and 2 will need to install baghouses to meet EPA's mercury MACT limit for existing EGUs. It is well known that coal-fired boilers equipped with baghouses achieve better control of mercury than those equipped with ESPs. Activated carbon, a sorbent which adsorbs mercury, is typically much more effective when a baghouse is used compared to an ESP. According to EPA, the form of mercury most easily removed is HgCl<sub>2</sub> and the formation of this compound depends on how much chlorine is in the coal—the lower the chlorine content of the coal, the less HgCl<sub>2</sub> is formed. EGUs that burn low chlorine coal, such as Flint Creek, often achieve better control of mercury via existing SO<sub>2</sub> scrubbers and PM controls. A fabric filter baghouse provides additional opportunities for mercury

removal compared to a particle scrubber or a dry ESP.

*Response:* We would like to clarify that the section of the BART Guidelines the comment refers to was not meant to require States to take into account MACT requirements in determining BART, but rather to provide States with the option to streamline the BART analysis for sources subject to the MACT standards by relying on the MACT standards for purposes of BART.<sup>206</sup> We received the originally submitted Arkansas RH SIP on September 23, 2008 and a revision on August 3, 2010, while EPA proposed the National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-fired Electric Utility Steam Generating Units (EGU MACT Rule) on March 16, 2011.<sup>207</sup> The EPA issued the EGU MACT final rule on December 16, 2011.<sup>208</sup> As such, it would be unreasonable for EPA, when taking action on states' RH SIPs, to consider EGU MACT standards proposed years after a state submitted its RH SIP. This would potentially create an endless review loop for States as new MACT standards are issued by EPA. In addition, the limits in the MACT standards are established by EPA for reasons that are much different than the reasons for the limits established in Regional Haze SIPs. Our approval of limits on direct PM emissions in Arkansas for RH purposes is based on minimal contribution to visibility impairment at Class I areas and is in no way related to the reasons a lower emission limit was established under section 112 of the Act. Therefore, EPA disagrees that it should disapprove the PM BART limit of 0.1 lb/MMBtu adopted by the State for Flint Creek Boiler No. 1 and White Bluff Units 1 and 2 because it is much less stringent than the PM emission limit in the EGU MACT Rule recently promulgated by EPA or because the sources may need to install baghouses to meet the mercury emission limit for existing EGUs in EPA's EGU MACT Rule. EPA expects that these sources will have to comply with these limits under the EGU MACT standard as well.

*Comment:* The EPA's reason for proposing to approve a limit of 0.07 lb/MMBtu and a wet ESP as PM BART for Domtar Power Boiler No. 1 is based on an outdated 2004 Boiler MACT PM standard of 0.07 lb/MMBtu and because according to EPA, the BART Guidelines provide that unless there are new

technologies subsequent to the MACT standards which would lead to cost-effective increases in the level of control, sources may rely on the MACT standards for purposes of BART (76 FR 64207). EPA's proposed approval ignores the fact that the 2004 MACT PM standard upon which the Domtar Power Boiler No. 1 BART determination is based was vacated and remanded and that EPA subsequently promulgated revised boiler MACT standards in 2011 which were more stringent. The new 2011 standards require existing solid fuel-fired boilers like Domtar's Power Boiler No. 1 to meet a PM emission limit of 0.039 lb/MMBtu on a 30-day rolling average, which is 44% lower than the vacated 2004 0.07 lb/MMBtu PM MACT limit (76 FR 15608, 15689 at Table 2). Even though EPA has delayed the effective date of the new 2011 Boiler MACT rule until completion of reconsideration of the rule and recently reissued a reconsideration proposal, there is no legitimate legal basis in the applicable regulations for exempting sources from a five-factor BART analysis based on their meeting an outdated and formally vacated PM MACT standard as reflecting BART when that MACT standard has been replaced with a more stringent proposed MACT standard. EPA should disapprove the PM BART determination for Power Boiler No. 1 either because it is less stringent than required by the MACT standards for PM currently being proposed by EPA or because there was no five-factor evaluation for BART for PM.

*Response:* The EPA acknowledges that on June 8, 2007, the United States Court of Appeals for the District of Columbia Circuit vacated and remanded the national emission standards for hazardous air pollutants for new and existing industrial/commercial/institutional boilers and process heaters (*i.e.* the 2004 Boiler MACT Rule) promulgated by EPA on September 13, 2004. However, it should be noted that the effective date of this vacatur was July 30, 2007, which was after the close of the public notice and comment period for Arkansas's proposed RH Rule, which codifies all the BART determinations made by the State. On March 21, 2011, the EPA issued a final rule to regulate emissions of hazardous air pollutants (HAPs) from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP emissions (*i.e.* the "Major Source Boiler MACT," or Boiler MACT Rule). As noted in the comment, the Major Source Boiler MACT Rule established a PM emission limit of 0.039 lb/MMBtu on a 30-day rolling average

<sup>206</sup> Appendix Y to Part 51, section IV.C.

<sup>207</sup> 76 FR 25091.

<sup>208</sup> See <http://www.epa.gov/ttn/atw/utility/utilitypg.html> for a copy of the signed final rule.

that applies to existing boilers designed to burn solid fuel, such as the Domtar Ashdown Mill Power Boiler No. 1. However, EPA promulgated the Major Source Boiler MACT Rule years after the end of the State's public notice and comment period and years after the date of Arkansas's submission to EPA of the RH SIP. As such, it would be unreasonable to disapprove the State's PM BART determination for Domtar on the basis that it is less stringent than the emission limit in the Major Source Boiler MACT Rule issued by EPA on March 21, 2011. Furthermore, on May 18, 2011, EPA published a final rule delaying the effective date for the Major Source Boiler MACT Rule until the proceedings for judicial review of the rule is completed or the EPA completes its reconsideration of the rule, whichever is earlier.<sup>209</sup> And on December 2, 2011, EPA issued a proposed rule for reconsideration of the final Major Source Boiler MACT Rule.<sup>210</sup> The proposed rule for reconsideration and the uncertainty surrounding the Major Source Boiler MACT Rule is another reason why it is unreasonable for EPA to disapprove the State's PM BART determination for Domtar on the basis that it is less stringent than the emission limit in the 2011 Major Source Boiler MACT Rule.

With regard to the comment that EPA should disapprove the State's PM BART determination for Domtar Power Boiler No. 1 because there was no five-factor evaluation for BART for PM, EPA holds that the State did not conduct a BART analysis for PM for Domtar Power Boiler No. 1 because at the time of the State's analysis, it was relying on the MACT standards for purposes of BART. Furthermore, the comment disregards the reason why the BART Guidelines provide that States could take a streamlined BART approach for sources subject to MACT standards. The BART Guidelines provide the following:

"Any source subject to MACT standards must meet a level that is as stringent as the best controlled 12 percent of sources in the industry \* \* \* We believe that, in many cases, it will be unlikely that States will identify emission controls more stringent than the MACT standards without identifying control options that would cost many thousands of dollars per ton."<sup>211</sup>

Accordingly, the reason why the BART Guidelines anticipated that states could streamline their analysis by relying on the MACT standards for purposes of BART is because EPA believes that such controls are among

the most stringent available and that emission controls more stringent than this are very likely not cost-effective. Notwithstanding the court's vacatur of the 2004 Boiler MACT Rule, at the time Arkansas performed its analysis and adopted the 0.07 lb/MMBtu emission limit for PM BART for the Domtar Ashdown Mill Power Boiler No. 1 based on the 2004 Boiler MACT PM standard, the emissions controls reflected by that PM standard were among the most stringent controls available at that time and emission controls more stringent than this were at that time likely not cost-effective for purposes of addressing visibility. Therefore, EPA disagrees that we should disapprove the PM BART determination for the Domtar Ashdown Mill Power Boiler No. 1.

#### F. Comments on Modeling

*Comment:* ADEQ conducted pre-control CALPUFF modeling to show that PM<sub>10</sub> and PM<sub>2.5</sub> emissions from AEP Flint Creek No. 1 Boiler have minimal visibility impacts. The EPA utilized modeling results to exempt White Bluff Units 1 and 2 from a PM BART analysis, while ADEQ and Entergy exempted the units from a PM BART analysis based on their belief that most of the visibility-causing emissions from Units 1 and 2 are due to SO<sub>2</sub> and NO<sub>x</sub> while PM<sub>10</sub> emissions are well-controlled with existing electrostatic precipitators (ESPs). The existing PM emission limit of 0.1 lbs/MMBtu, which ADEQ adopted as BART for PM, fails to reflect the best system of continuous particulate matter reduction at the White Bluff units, especially if Entergy is considering the installation of a dry scrubber and baghouse at each White Bluff unit to meet BART.

In addition, the impact threshold used in this analysis is problematic because it is likely that ADEQ applied a 0.5 dv threshold, although the discussion in the Arkansas RH SIP on the modeling is limited or not present. Given the number of sources impacting visibility at Class I areas, a 0.5 dv threshold is not appropriate for one visibility impairing pollutant. The RHR and BART Guidelines do not provide for exempting a source from BART for one visibility impairing pollutant. A BART determination must be made for each pollutant and EPA cannot exempt Flint Creek Boiler No. 1 and White Bluff Units 1 and 2 from a BART analysis for PM based on modeling that shows that PM visibility impacts do not trip the BART impact threshold.

Furthermore, the PM modeling used to exempt the source from a PM BART determination utilized an emission rate much lower than the proposed BART

limit. The pre-control modeling for Flint Creek included the 24-hr actual maximum emissions rate, which is 70% lower than the proposed BART limit of 0.1 lbs/MMBtu. ADEQ modeled White Bluff Unit 1's highest 24-hour actual PM<sub>10</sub> emission rate of 15.592 grams per second and White Bluff Unit 2's highest 24-hour actual PM<sub>10</sub> emission rate of 16.653 grams per second in determining whether the plant's emissions were subject to BART, which is 85% lower than the proposed BART limit of 0.1 lbs/MMBtu. The emission limits in the April 2007 ENVIRON Report titled "Cumulative Modeling of Subject to Best Available Retrofit Technology (BART) Facilities as a Requirement of ADEQ's BART Modeling Protocol" (Appendix 9.2D of the Arkansas RH SIP) are even lower than those used in the pre-control modeling.

*Response:* In our review of the Arkansas RH SIP, we evaluated the determination by ADEQ that no additional PM controls are required for the AEP Flint Creek Boiler No. 1 and the Entergy White Bluff Units 1 and 2. In the case of Flint Creek, ADEQ's determination was based on the pre-control modeling performed by ADEQ and a review of AEP SWEPCO's statement that the PM visibility modeling did not "trip the BART impact threshold." We reviewed the pre-control modeling performed using the 24-hr actual maximum emissions from the baseline period. The modeling results in Appendix 9.2B of the AR RH SIP and presented in Table 7-6 of Appendix A of the TSD,<sup>212</sup> indicate that PM contributes less than 0.5% of the total visibility impacts from Flint Creek Boiler No. 1 at all nearby Class I areas with the exception of Upper Buffalo. PM contributions to visibility impacts at Upper Buffalo from Flint Creek are less than 2% of the total visibility impairment at this Class I area. On the most impacted day at Upper Buffalo, modeling the 24-hr actual maximum emissions, PM contributes only 0.07 dv of the total 3.781 dv modeled visibility impact from the source. Clearly, the most effective controls to address visibility impairment from the source are those that would reduce emissions of visibility impairing pollutants other than direct emissions of PM.

For Entergy White Bluff units 1 and 2, we reviewed the data submitted by ADEQ, including pre-control modeling in Appendix 9.2B of the Arkansas RH SIP, to evaluate ADEQ and White Bluff's determination that the majority of visibility-causing emissions are due to

<sup>212</sup> These documents can be found in the docket for our rulemaking.

<sup>209</sup> 76 FR 28662.

<sup>210</sup> 76 FR 80598.

<sup>211</sup> Appendix Y to Part 51, section IV.C.

emissions of NO<sub>x</sub> and SO<sub>2</sub>, and that no additional PM controls are warranted. The modeling results in Appendix 9.2B of the Arkansas RH SIP and presented in Table 7–7 of Appendix A of the TSD, indicate that PM contributes less than 0.4% of the total visibility impacts at all nearby Class I areas. On the most impacted day at Caney Creek, modeling the 24-hr actual maximum emissions, PM contributes only 0.03 dv of the more than 8 dv modeled visibility impact from the White Bluff Units 1 and 2. Clearly, the majority of visibility-causing emissions are due to emissions of NO<sub>x</sub> and SO<sub>2</sub> and the most effective controls to address visibility impairment from the units are those that would reduce emissions of NO<sub>x</sub> and SO<sub>2</sub> rather than direct emissions of PM. In this action, we are finalizing our proposal to disapprove the NO<sub>x</sub> and SO<sub>2</sub> BART determinations for these units as ADEQ did not properly evaluate and identify controls to address visibility impairment from these units.

In both cases, it is clear that the visibility impact from PM emissions alone is so minimal such that the installation of any additional PM controls on these units (including any upgrades to the existing controls) could only have minimal visibility benefit and therefore would not be justified. This is in keeping with the BART Rule, which states the following:

“Consistent with the CAA and the implementing regulations, States can adopt a more streamlined approach to making BART determinations where appropriate. Although BART determinations are based on the totality of circumstances in a given situation, such as the distance of the source from a Class I area, the type and amount of pollutant at issue, and the availability and cost of controls, it is clear that in some situations, one or more factors will clearly suggest an outcome. Thus, for example, a State need not undertake an exhaustive analysis of a source’s impact on visibility resulting from relatively minor emissions of a pollutant where it is clear that controls would be costly and any improvements in visibility resulting from reductions in emissions of that pollutant would be negligible. In a scenario, for example, where a source emits thousands of tons of SO<sub>2</sub> but less than one hundred tons of NO<sub>x</sub>, the State could easily conclude that requiring expensive controls to reduce NO<sub>x</sub> would not be appropriate. In another situation, however, inexpensive NO<sub>x</sub> controls might be available and a State might reasonably conclude that NO<sub>x</sub> controls were justified as a means to improve visibility despite the fact that the source emits less than one hundred tons of the pollutant.”<sup>213</sup>

In reviewing the State’s PM BART determinations for Flint Creek Boiler No. 1 and White Bluff Units 1 and 2, we

utilized ADEQ’s pre-control screening modeling using 24-hr maximum actual emissions from the baseline period as recommended in the BART guidelines. We did not rely on the cumulative modeling results found in Appendix 9.2D of the AR RH SIP in our review of ADEQ’s PM BART determination for sources at these two facilities. Based on our analysis of the data submitted by ADEQ in the Arkansas RH SIP, we find that no additional controls are required for PM and therefore are finalizing our proposal to find that the existing PM emission limits are acceptable to satisfy the PM BART requirements of Flint Creek Boiler No. 1 and White Bluff Units 1 and 2.

*Comment:* Even though the modeling for Entergy’s White Bluff Units 1 and 2 deviated from the standard modeling protocol in evaluating wet and dry scrubbers, these deviations did not impact the BART analysis and subsequent BART determination for these units. The use of the 8th highest day rather than the maximum visibility impact did not impact the BART determination because the units were still determined to be subject-to-BART and the BART decision was not based upon modeling. Therefore, ADEQ’s acceptance of the modeling should be approved by EPA.

*Response:* The modeling conducted for Entergy White Bluff Units 1 and 2 was not conducted appropriately for its purpose and affected the BART analysis and subsequent BART determinations for these units. The modeling for wet and dry scrubbers at Entergy’s White Bluff units 1 and 2 evaluated both control technologies at an emission limit of 0.15 lb/MMBtu for SO<sub>2</sub>. However, wet scrubbers and dry scrubbers are capable of achieving a lower emission limit than was modeled by ADEQ, and similar facilities use these controls to control SO<sub>2</sub> emissions below the 0.15 lb/MMBtu limit included in the analysis. The lowest emission limit achievable must be included in the BART analysis. ADEQ evaluated the control effectiveness of the two control options of wet and dry scrubbing, stating the wet scrubber can achieve up to 95% control efficiency while the dry scrubber can achieve up to 92% control efficiency. An emission limit of 0.15 lbs/MMBtu represents a control efficiency of only approximately 80% at White Bluff Units 1 and 2. Therefore, the visibility modeling is flawed because it did not evaluate the level of visibility improvement reasonably achievable due to the use of these technologies at the emission rate these technologies are capable of achieving.

Furthermore the original meteorological databases generated by CENRAP did not include observations as our guidance recommends. The use of meteorological databases that do not include observations may lead, to less conservatism in the CALPUFF modeled visibility results compared with modeling that uses meteorological databases with observations. To account for this, the use of the 1st High modeling values rather than 8th high modeling values was agreed to by EPA, representatives of the Federal Land Managers, and CENRAP stakeholders. The modeling conducted for Entergy’s White Bluff Units 1 and 2 deviated from this accepted modeling protocol by using the 8th highest day rather than the maximum impacted day and failed to account in any other way for the loss in conservatism that results from using the CENRAP database that does not include observations. In summary, an approvable visibility analysis would follow the agreed upon modeling protocol for BART and evaluate the visibility benefits for the lowest emission limit achievable by each technologically feasible control as required by the RHR.

*Comment:* We agree with EPA’s finding that the visibility impact analysis of the SO<sub>2</sub> control options for Entergy White Bluff Units 1 and 2 was not properly conducted because ADEQ’s modeling for White Bluff Units 1 and 2 considered both wet and dry scrubbers at the same emission rate of 0.15 lb/MMBtu rather than modeling the emission rates that these technologies are capable of achieving. In addition, the modeling for Entergy’s White Bluff Units 1 and 2 deviated from ADEQ’s modeling protocol by using the 98th percentile value of visibility impacts rather than the highest day of impacts.

*Response:* As explained elsewhere in our response to comments, we find that the visibility impact analysis of the SO<sub>2</sub> control options for the White Bluff units 1 and 2 was not properly conducted because ADEQ’s modeling for White Bluff Units 1 and 2 considered both wet and dry scrubbers at the same emission rate of 0.15 lb/MMBtu rather than modeling the emission rates that these technologies are capable of achieving. We find that ADEQ’s modeling for Entergy’s White Bluff Units 1 and 2 deviated from ADEQ’s modeling protocol by using the 98th percentile value of visibility impacts rather than the highest day of impacts.

*Comment:* ADEQ performed the BART determination modeling in accordance with the guidance provided by EPA. ADEQ modeled SO<sub>2</sub> and NO<sub>x</sub> together, both pre-control and post-

<sup>213</sup> 70 FR 39116.

control. Modeling results showed the pollutant that impacted visibility was SO<sub>2</sub> and not NO<sub>x</sub>. Utilizing this information and in compliance with the EPA's BART Guidelines, ADEQ did not make BART determination for that source or group of sources (or for certain pollutants for those sources) when ADEQ's analysis showed that an individual source or group of sources (or certain pollutants from those sources) is not reasonably anticipated to cause or contribute to any visibility impairment in a class I area.

*Response:* We agree that ADEQ pre-control and post-control modeling was performed modeling all pollutants (NO<sub>x</sub>, SO<sub>2</sub>, and PM) together. We note that to properly evaluate the visibility benefit from a control, NO<sub>x</sub> and SO<sub>2</sub> emissions should be modeled together.

It is unclear which facility the comment is referring to regarding ADEQ not making a BART determination for NO<sub>x</sub> based on modeling that showed SO<sub>2</sub> impacted visibility and not NO<sub>x</sub>. ADEQ did make NO<sub>x</sub> BART determinations for all but two subject-to-BART sources. Our concerns with these BART determinations are discussed in detail in a separate response to comment.

For AECC Bailey Unit 1 and AECC McClellan Unit 1, ADEQ determined, based on pollutant-specific modeling performed subsequent to the initial pre-control screening modeling, that NO<sub>x</sub> contributions were less than the 0.5 dv threshold and, as a result, incorrectly determined a NO<sub>x</sub> BART determination was not needed for these two units. ADEQ made a NO<sub>x</sub> BART determination for all other sources they determined to be subject-to-BART. In the case of the two AECC units, as stated in our proposal, our evaluation of the screening modeling results for these units reveals that on some of the most impacted days, nitrate is a significant contributor to the visibility impairment due to these units. Post-control modeling performed by ADEQ, applying the use of 1% sulfur fuel, show that these units would continue to cause or contribute to visibility impairment at a number of Class I areas, with NO<sub>x</sub> emissions responsible for over 50% of the impairment on some days under this control scenario. The pollutant-specific analysis approach for NO<sub>x</sub> and SO<sub>2</sub> used to evaluate controls at these AECC units does not take into consideration the chemical interaction between these two pollutants and ammonia present in the atmosphere. A reduction in sulfate emissions can result in an increase in visibility impairment from nitrate due to the increase in ammonia available to react with nitrate to form visibility

impairing aerosol. The pre-control modeling results indicate that nitrate is a significant contributor to visibility impairment on some days and this contribution can increase under conditions of decreased SO<sub>2</sub> emissions. Therefore, NO<sub>x</sub> and SO<sub>2</sub> emissions should be modeled together and emission control technologies should be evaluated for both pollutants. In light of the relatively high impacts due to nitrate, a combination of NO<sub>x</sub> and SO<sub>2</sub> controls may prove to be cost-effective and provide for substantial visibility improvement and must therefore be evaluated. We further discuss the importance of evaluating all the emissions (NO<sub>x</sub>, SO<sub>2</sub>, and PM) together from BART sources when assessing the benefit in visibility impairment from reductions of NO<sub>x</sub> and/or SO<sub>2</sub> in another response to comment and also in past EPA guidance.<sup>214</sup>

*Comment:* The EPA is inconsistent in its approach to the contribution threshold to visibility impairment. The EPA initially approved ADEQ's selection of a threshold of 0.5 dv in the Arkansas RH SIP. However, the EPA later on states that a lower threshold value is needed in evaluating pollutant-specific modeling for sources that emit more than one visibility impairing pollutant. Arkansas properly modeled the visibility impacts of NO<sub>x</sub> and SO<sub>2</sub> emissions separately from one another. Arkansas's application of the 0.5 dv threshold in considering the impacts of NO<sub>x</sub>, SO<sub>2</sub>, and PM on a per-pollutant basis is consistent with the BART Guidelines. The EPA argues that the 0.5 dv threshold in the BART Guidelines applies to all three visibility impairing pollutants combined, and requires the state to lower the threshold value in evaluating pollutant-specific modeling for sources that emit more than one visibility impairing pollutant. This is unsupported as a legal, factual, and policy matter, and it is unclear what EPA actually expects states to do on this issue.

The EPA's proposed rule does not provide any guidance on EPA's views as to how Arkansas and other states should modify the 0.5 dv threshold to account for separate modeling of PM, on the one hand, and NO<sub>x</sub> and SO<sub>2</sub>, on the other hand. The EPA cannot reasonably purport to require the state to apply a new, untested, and previously unarticulated standard in its BART analyses if it does not provide guidance

<sup>214</sup> BART Guidelines; Memo from Joseph Paisie (Geographic Strategies Group, OAQPS) to Kay Prince (Branch Chief EPA Region 4) on Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations, July 19, 2006; EPA Q and A—September 26, 2006.

on how it should do so. Consistent with the 2006 EPA memorandum cited by EPA in its proposal, it is believed that numerous BART contribution analyses separating PM from NO<sub>x</sub> and SO<sub>2</sub> have been performed without revising the 0.5 dv contribution threshold on this basis alone. EPA has not previously stated or suggested that any such revision is necessary and there is no basis for any suggestion that such a revision is necessary. EPA should recognize that states may use the default 0.5 dv contribution threshold and allow the application of this threshold regardless of how pollutants are modeled. EPA's proposed new approach needlessly complicates the analysis, is inappropriate and unsupported, and should be withdrawn. ADEQ's selection of a threshold of 0.5 dv is reasonable and appropriate, and should be approved by EPA.

*Response:* We reviewed ADEQ's methodology to initially identify which sources were subject-to-BART. This methodology included modeling all pollutants together and applying a contribution threshold of 0.5 dv. As discussed in our proposed rule, we agree with ADEQ's selection of the 0.5 dv threshold as it applies to the initial screening modeling performed by ADEQ when all three pollutants, NO<sub>x</sub>, SO<sub>2</sub> and PM are considered together.

We disagree with the characterization of the 0.5 dv threshold as a default value. The BART Guidelines state that "the appropriate threshold for determining whether a source contributes to visibility impairment' may reasonably differ across states," but, "[a]s a general matter, any threshold that you use for determining whether a source 'contributes' to visibility impairment should not be higher than 0.5 deciviews." 70 FR 39104, 39161. The 0.5 dv threshold is not set as a default value but rather a ceiling to what may be determined to be appropriate in any situation. Further, in setting a contribution threshold, the BART Guidelines say that states should "consider the number of emissions sources affecting the Class I areas at issue and the magnitude of the individual sources' impacts." 70 FR 39104, 39161. The BART Guidelines affirm that states are free to use a lower threshold if they conclude that the location of a large number of BART-eligible sources in proximity of a Class I area justifies this approach.

The pollutant-specific approach is acceptable only for PM BART contribution analyses. Furthermore, as



stated in the 2006 EPA memorandum<sup>215</sup> referenced in the comment, using CALPUFF on a pollutant-specific basis for PM is only appropriate in certain situations, such as if a State chooses to adopt the Clean Air Interstate Rule (CAIR) program/CSAPR to address emissions of SO<sub>2</sub> and NO<sub>x</sub> from EGUs. In such an instance, the CAIR/CSAPR may satisfy the requirements for BART for these pollutants from these sources. However, the State must determine whether its BART-eligible EGUs are subject to review under BART for direct emissions of PM.

Arkansas did not rely on CAIR to address emissions of SO<sub>2</sub> and NO<sub>x</sub>. Therefore, pollutant specific analysis is not appropriate for a single source analysis. For non-CAIR situations, it is necessary to model the source's total emissions (NO<sub>x</sub> and SO<sub>2</sub>) in any CALPUFF modeling to estimate visibility impairment or change in visibility impairment from the potential installation of controls or no controls. Separate pollutant-specific analyses for NO<sub>x</sub> and SO<sub>2</sub> do not take into consideration the chemical interaction in the atmosphere. Such modeling does not take into account the competition/balance of these two pollutants chemical reactions with ammonia present in the atmosphere. A reduction in sulfate emissions can result in an increase in visibility impairment due to nitrate due to the increase in ammonia available to react with nitrate to form visibility impairing aerosol. Therefore, NO<sub>x</sub> and SO<sub>2</sub> emissions should be modeled together and emission control technologies should be evaluated for both pollutants.<sup>216</sup>

ADEQ's approach to modeling a single source on a pollutant specific basis could allow for a BART applicable source to model below 0.5 for each of the pollutants individually (NO<sub>x</sub>, SO<sub>2</sub>, and PM), which could lead to a potential cumulative impact of up to 1.47 dv (3 x 0.49 dv) and yet the source would not be evaluated for controls. This process would allow a determination to be made in this maximum hypothetical case that a 1.47 dv impact from a subject to BART source, which is above the 1.0 dv impact that would result in the source causing a significant visibility

impairment, would "screen" out of a full BART analysis using ADEQ's approach. This is not appropriate and is inconsistent with our BART Guidelines and guidance. In evaluation of pollutant-specific impacts from a source (*i.e.* visibility impacts from PM emissions), consideration of the amount of visibility impairment contribution from a source's PM emissions can be evaluated against the visibility impairment contribution from the source's combined NO<sub>x</sub> and SO<sub>2</sub> emissions.<sup>217</sup>

EPA also disagrees that we have developed or implemented any new guidance in our proposal. EPA's approach is based on the 2005 BART guidelines, and additional guidance provided in 2006.

*Comment:* Although the use of daily maximum emissions for BART modeling purposes meets the modeling protocol, this protocol should be revisited due to the fact that using daily maximum emissions is completely unrealistic and overly conservative in most cases, as it assumes that such an emission rate occurs every day for three years. This is especially overly conservative for Unit 1 of the Carl E. Bailey Generating Station and Unit 1 of the John L. McClellan Generation Station, as these units primarily fire natural gas and have rarely fired fuel oil over the past few years. With upcoming EPA environmental regulations such as the Utility MACT Rule being promulgated, these units are likely to continue the trend of low capacity factors of fuel use. Any controls required to be implemented on these units will only be used 5% or less of the time, and it is certainly not cost-effective. Logic and practicality dictate that the minimal use of fuel oil at these two units requires an accommodation in this instance.

*Response:* We agree that the modeling protocol and the BART Guidelines state that the daily maximum emissions should be used for modeling visibility impacts during the baseline period. We note that the BART Guidelines do allow for consideration of limited operation of a source or fuel type. Given that there are no permit requirements in place that would limit the time of operation of the AECC units when burning fuel oil, the facilities can legally be operated well above the 5% capacity factor that AECC assumes it will be operating under in the future. It is likely that if the fuel oil burning capacity of these units is significantly limited, installation of controls to address the emissions during fuel oil burning would prove to be not

cost-effective on a dollar per ton removed basis. A federally enforceable limit must be in place that can be relied upon to limit the emissions of the source during fuel oil burning scenarios. We are disapproving the SO<sub>2</sub> BART analysis for these two units because ADEQ did not consider the option of burning fuel oils with sulfur content less than 1.0%. As articulated in our proposal, the use of fuel oil with a 0.5% sulfur content or lower is technically feasible and ADEQ should have evaluated its cost effectiveness and visibility impact for the AECC Bailey Unit 1 and the AECC McClellan Unit 1. Alternatively, an operating air permit restriction to use only natural gas as the fuel source for the two units or significantly restricting fuel oil burning may be acceptable.

At this time, it is speculation to assume that the future amended MACT rule will lower the capacity factors of fuel use for sources. When evaluating a state's BART determination, the EPA looks at existing requirements and cannot rely on potential future actions in its decision to approve or disapprove a state SIP. ADEQ cannot rely on a future MACT Rule to limit the capacity factor of fuel oil use.

*Comment:* All post-control CALPUFF modeling completed in Domtar's analysis was cumulative-type modeling, taking into account all pollutants—NO<sub>x</sub>, SO<sub>2</sub>, and PM<sub>10</sub> in each analysis. The EPA needs to list in detail any concerns about the methods used to complete modeling analysis of Domtar's facility.

*Response:* We agree with the commenter that post-control modeling for the Domtar facility was performed modeling all visibility impairing pollutants together (SO<sub>2</sub>, NO<sub>x</sub> and PM). As discussed in the proposed action, we are finding the chosen model and the general modeling methodology used by ADEQ to be acceptable. Because Domtar's visibility modeling was performed following the ADEQ modeling protocol, we also find that the modeling methodology followed by Domtar is acceptable. However, the BART determinations made for the subject-to-BART units at the Domtar facility were performed without evaluating the visibility improvement anticipated due to the use of all technically feasible control options. Visibility modeling was performed only after a control technology was selected as BART. This approach is unacceptable and does not allow for a comparison of the effectiveness of available controls in reducing visibility impacts to be considered as part of the BART determination. ADEQ's and Domtar's BART determinations were flawed

<sup>215</sup> Memo from Joseph Paisie (Geographic Strategies Group, OAQPS) to Kay Prince (Branch Chief EPA Region 4) on Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations, July 19, 2006.

<sup>216</sup> BART Guidelines; Memo from Joseph Paisie (Geographic Strategies Group, OAQPS) to Kay Prince (Branch Chief EPA Region 4) on Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations, July 19, 2006; EPA Q and A—September 26, 2006

<sup>217</sup> *Ibid.*

because the modeling did not evaluate all technically feasible control options or evaluate the control technology at the control efficiencies they are capable of achieving to inform the BART determination. We note, that to properly evaluate the visibility benefit from each control, NO<sub>x</sub> and SO<sub>2</sub> emissions must be modeled together for each control scenario examined, similar to the modeling performed in the post-and pre-control modeling scenarios.

*Comment:* The EPA cannot rely on post-control modeling to justify the requirement to evaluate post-combustion controls for NO<sub>x</sub> in the agency's disapproval of the BART determinations for Entergy's White Bluff facility. While EPA states that post-control modeling shows continued post-control modeled visibility impairment due to NO<sub>x</sub> emissions, the models, including CALPUFF, significantly overstate nitrate-caused RH, and reliance on those models is not a credible approach. Even EPA acknowledges that the CALPUFF model tends to magnify the actual visibility effects of an individual source and the CALPUFF model is less advanced than some of the recent atmospheric chemistry simulations. A more recent version of CALPUFF tends to reduce the nitrate over prediction using more advanced chemistry modules borrowed from regional models such as CAMx and CMAQ, but this version has not been yet approved by EPA. Because there is not a credible version of CALPUFF with adequate chemistry to assess the visibility impact of Arkansas NO<sub>x</sub> emissions in an unbiased manner, it is helpful to look at actual monitoring data taken at IMPROVE sites and to keep in mind that the nitrate chemistry and the IMPROVE monitoring data indicate that NO<sub>3</sub> particulate formation tends to occur on the coldest days, while on warmer days, invisible HNO<sub>3</sub> vapor formation is preferred, which has no visibility impact. The Arkansas sources that affect the class I areas subject to this rule are south and east of the areas, which are generally not associated with the coldest conditions when the worst nitrate haze is observed to actually occur.

*Response:* We disagree that we relied on post-control modeling to justify the requirement to evaluate post-combustion controls. The post-control model results indicate that even after application of the State's selected combustion controls to reduce NO<sub>x</sub> emissions, a significant visibility impact due to NO<sub>x</sub> emissions from White Bluff Units 1 and 2 remains. This demonstrates that post-combustion controls that result in larger reductions

of NO<sub>x</sub> may prove to be cost-effective and result in significant visibility improvement. We note that the modeling of changes in visibility impacts is only one of five factors that are evaluated in a BART analysis. In performing a BART analysis, the State must take into consideration all technologically feasible and available control technologies, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.<sup>218</sup> As articulated in more detail in our proposal and in our response to previous comments, when evaluating NO<sub>x</sub> controls for White Bluff Units 1 and 2, the State considered only combustion controls that would achieve the presumptive NO<sub>x</sub> emission limit even though there are technically feasible and available control technologies (including post-combustion controls) that are currently being used at similar facilities to meet an emission limit much more stringent than the 0.15 lb/MMBtu presumptive limit for NO<sub>x</sub>. The BART Guidelines provide that in identifying control options for evaluation in a BART analysis, states must identify the most stringent option and a reasonable set of options for analysis that reflects a comprehensive list of available technologies.<sup>219</sup> In addition, the RHR requires that in establishing source specific BART emission limits, a state's BART analysis must identify and consider the maximum level of emission reduction that has been achieved in other recent retrofits at existing sources in the source category.<sup>220</sup> Therefore, as explained in more detail in our response to previous comments, in its NO<sub>x</sub> BART analysis for White Bluff Units 1 and 2, the State must evaluate NO<sub>x</sub> post-combustion controls at the most stringent emission limit capable of being achieved by these controls.

We disagree with the comment's characterization that the CALPUFF model approved for regulatory actions is not a credible model to assess visibility impacts of NO<sub>x</sub> emissions from Arkansas sources. For the specific purposes of the RHR's BART provisions, we concluded that CALPUFF (versions that EPA has approved) is sufficiently reliable to inform the decision making

<sup>218</sup> See 40 CFR 51.308(e)(1)(ii)(A) and 42 U.S.C. 7491(g)(2).

<sup>219</sup> Appendix Y to Part 41, section IV.D.

<sup>220</sup> 64 FR 35740.

process in determining if a full BART analysis is required and in estimating the degree of visibility improvement that may reasonably be expected from controlling a single source in order to inform the BART determination.<sup>221</sup> When we developed the BART Guidelines and determined the acceptability of using CALPUFF in estimating visibility impacts from BART sources (BART eligible or subject to BART sources), EPA was aware that EPA had not approved the regulatory version of CALPUFF for doing full chemistry as a Guideline on Air Quality Models (GAQM) preferred model. The final BART Guidelines recommend that CALPUFF's 98th percentile modeling results be used to estimate the visibility impairment. This is in contrast to the approach in our BART Guidelines proposal to use the highest daily impact value. We acknowledged that the chemistry modules in the CALPUFF model are simplified and likely to provide conservative (higher) results for peak impacts. To address the concerns which are now being raised by the comment, we made the decision to consider the less conservative 98th percentile to account for this potential bias.<sup>222</sup>

The BART modeling protocol, developed by the CENRAP for use by all CENRAP states and reviewed by EPA and the FLM including the use of CALPUFF, was adopted by ADEQ. In general, this protocol was followed by ADEQ in determining which sources were subject-to-BART and in modeling visibility impacts from controls in evaluating BART.<sup>223</sup> In development of the CENRAP BART modeling protocol, we were concerned that CENRAP had not included meteorological observation data in development of the

<sup>221</sup> Regulatory version that had been approved by EPA for assessing Long Range Transport of primary pollutants. Final BART guidelines published July 6, 2005. (70 FR 39104–39172).

<sup>222</sup> "Most important, the simplified chemistry in the model tends to magnify the actual visibility effects of that source. Because of these features and the uncertainties associated with the model, we believe it is appropriate to use the 98th percentile—a more robust approach that does not give undue weight to the extreme tail of the distribution." 70 FR 39104, 39121.

<sup>223</sup> As discussed in detail in a separate response to comment, because the CENRAP meteorological databases used in the CALPUFF modeling analyses do not include observations, the use of the maximum impact rather than the 98th percentile was agreed upon. The use of meteorological databases that do not include observations may lead, in some applications, to potentially less conservatism in the CALPUFF modeled visibility results compared with modeling that uses meteorological databases with observations. The use of the 1st High modeling values was agreed to by EPA, representatives of the Federal Land Managers, and CENRAP stakeholders to account for this.

meteorological data sets for the BART CALPUFF modeling. We were concerned that this approach, that did not follow our guidelines, would lead to some underestimation of impacts. As a result, EPA, FLM representatives, states, and stakeholders agreed that they would either use the maximum model predicted values (instead of the 98th percentile) or develop a modeling protocol to generate the meteorological datasets with meteorological observations, which we would then allow the use of the 98th percentile. We note that the CALPUFF modeling in ADEQ's SIP that was provided by Entergy White Bluff's contractors did not use the maximum value but did use the CENRAP meteorological dataset and used the 98th percentile, which creates a concern that visibility impairment will be underestimated. We noted this concern in our proposal and also a concern that Entergy had utilized a higher emission rate than is likely achievable by the selected control technology and both of these issues would lead to underestimations in the visibility benefit anticipated from the use of additional controls.<sup>224</sup> These issues will need to be addressed when a revised BART analysis is completed.

The comment suggests that CALPUFF version 6.4 has been updated with an allegedly more robust chemistry and purportedly performs better according to the comment than the current version of the model approved for regulatory actions (currently CALPUFF version 5.8). The comment claims that CALPUFF version 6.4 was shared with EPA in December 2010. We wish to clarify that EPA had a meeting with API representatives and others in February 2011. At this meeting, a PowerPoint was shared about CALPUFF version 6.4, but the full model code, explanations and documentation of the code, model evaluations, etc., have not been provided to EPA as of February 2012. We have a detailed procedure for evaluation of new models that includes documentation, peer review, evaluation, performance analysis, etc. Furthermore, significant changes in models (such as a significant upgrade in the chemistry module) are often required to go through a formal rulemaking process for adoption. As noted by the comment, we previously received comments about the CALPUFF version 6.4 model in another action and provided a response that a proper review analysis and evaluation have not been conducted.<sup>225</sup> As noted

by the comment, the more recently developed model version (version 6.4) has not gone through the appropriate review to assess if it is founded in appropriate science and performs adequately and reliably and is an improvement to the current version that is acceptable for regulatory actions. If the revised versions of CALPUFF can be shown to be reliable and acceptable to EPA through the appropriate process, it would likely be appropriate to the use Highest Daily impact (1st High instead of the 8th High) based on the presumption that the updated chemistry of the CALPUFF model would result in less conservative results than EPA approved CALPUFF versions 5.8 or 5.711. In past agreements in using the CAMx photochemical model, which has a robust chemistry module, Region 6 has required the use of the 1st High value when sources are screened out of a full BART analysis based on the CAMx results.

With regard to the comment's observation that the monitoring data indicates visibility impacts due to nitrate formation occur on colder days and that these days are not when winds are generally from the south or east, EPA notes that monitoring data is only collected every three days at each IMPROVE monitor and there is only one monitor in a Class I area. Modeling provides for an analysis of visibility conditions during every day of the baseline period at a number of receptor locations at each Class I area, and is not limited by the number of days data is collected. Modeling also allows for receptors to be placed throughout the Class I area and not limited to one monitor location for estimating visibility impairment throughout the Class I areas. Thus, the comment's observation is overly generalized that the winds do not generally come from the south and east during the colder periods when nitrates are a concern at the Class I areas of concern. This overly broad-brushed statement about wind patterns is not supported by a more detailed analysis of wind patterns nor transport phenomena as wind directions change. We included a more sophisticated approach for source-receptor analysis in our BART Guidelines that takes into account meteorological transport patterns on every day of the year. Since transport of pollutants to the Class I area is not always a direct route as wind patterns change, the more sophisticated approach discussed in the BART guidelines is to use a full meteorological

modeling analysis using prognostic meteorological data that has wind speed and direction throughout many atmospheric layers from the surface to the upper atmosphere. CALPUFF visibility modeling was performed using three years (2001–2003) of prognostic meteorological data and 24-hr actual maximum emissions, following the methods in the BART Guidelines. Pre-control and post-control modeling show significant visibility impacts due to the Entergy White Bluff's NO<sub>x</sub> emissions, with some of the highest impacted days occurring during the fall and winter months. This analysis did not include an evaluation based on the most effective emission limit that can be achieved. So it is likely that there are underestimates in the visibility improvement that could potentially be achieved from installation of BART. The use of CALPUFF and prognostic meteorological data that is generated with the same meteorological models as weather forecasting, with the many layers of wind speed and direction, is a much more appropriate and sophisticated approach to analyzing visibility impairment than the comment's assessment of potential impacts from Arkansas sources indicated. Therefore, we disagree with the statement that the source would not be affecting the Class I areas because the winds are not generally from the south or east when the coldest conditions occur that are associated with the worst nitrate haze.

### G. Comments on Legal Issues

#### 1. Comments on Regional Haze

*Comment:* The EPA does not have the authority under the CAA to partially disapprove portions of Arkansas's RH SIP including BART determinations that did not address all the BART factors, BART determinations that adopted presumptive limits, Arkansas's LTS, and Arkansas's RPGs. The EPA's proposal improperly encroaches on the state's authority and discretion in developing a RH SIP. Arkansas has properly exercised its statutory authority under the CAA. The EPA must defer to Arkansas determinations in their RH SIP since EPA lacks the authority to substitute its own judgment or policy preferences for the state's determination. The EPA's role in implementing the visibility program under the RH SIP is one of support and cooperation in implementation.

*Response:* The EPA's proposed partial disapproval of Arkansas's RH SIP is a proper exercise of EPA's authority under the Clean Air Act. Congress crafted the CAA to provide for states to

<sup>224</sup> See 76 FR 64205–64207.

<sup>225</sup> See 76 FR 52431–52434 and the Response to comments document (pg. 124–133) for a full agency discussion on why CALPUFF version 6.4 (and other

non-EPA approved versions) are not acceptable at this time for regulatory analyses (EPA Docket ID No. EPA–R06–OAR–2010–0846).

take the lead in developing implementation plans, but balanced that decision by requiring EPA to review the plans to determine whether a SIP meets the requirements of the CAA. The EPA's review of SIPs is not limited to support and cooperation in implementation of a state SIP, nor is it to simply rubber-stamp state decisions. When reviewing state SIPs, EPA must consider not only whether the state considered the appropriate factors in making decisions, but acted reasonably in doing so. In undertaking such a review, EPA does not usurp the state's authority but ensures that such authority is reasonably exercised.

In taking action on the Arkansas RH SIP submittals, EPA is disapproving a portion but approving as much of the Arkansas RH SIP as possible. Our action today is consistent with the statute. In finalizing our proposed determinations, we are approving the following: Arkansas's identification of affected Class I areas; the establishment of baseline and natural visibility conditions; the determination of URP; Arkansas's RPG consultation; the RH monitoring strategy and other SIP requirements under § 51.308(d)(4); Arkansas's commitment to submit periodic RH SIP revisions and periodic progress reports describing progress towards the RPGs; Arkansas's commitment to make a determination of the adequacy of the existing SIP at the time a progress report is submitted; and Arkansas's consultation with FLMs. We are also largely approving those portions of the SIP addressing Arkansas's identification of those sources that are BART-eligible sources and those subject to BART sources; some of the State's BART determinations for five units; Arkansas's RH Rule; and the LTS.

We are, however, disapproving some of the State's BART determinations for nine units. As explained in the proposal and the previous response to comments, some of the State's BART determinations for the nine units are not approvable because Arkansas did not follow the requirements of section 40 CFR 51.308(e). 76 FR at 64186, at 64187. As a result of EPA's disapproval of the BART determinations, we are also partially disapproving that portion of the LTS affected by this disapproval. Similarly, EPA's disapproval of Arkansas's RPGs is based on the state's failure to follow the requirements of 40 CFR 51.308(d)(i)(A). See also CAA § 169A(g). In concluding that Arkansas did not adhere to the requirements of the RHR, EPA is not substituting its policy judgment for that of Arkansas but rather exercising its authority to ensure that the state's decisions are reasonable

ones that meet statutory and regulatory requirements.

*Comment:* The CAA gives primacy to the states in devising the LTS for making reasonable progress toward the national visibility goal and in making BART determinations and limited authority to EPA. In accordance with section 169A(a)(4), EPA promulgates regulations to assure progress towards the national goal of preventing future and remedying existing visibility impairment in Federal class I areas while the states are required to submit SIP which meets these measures. In 1999 and 2005, EPA promulgated and subsequently amended the RHR which gives guidance to the states on how to develop a visibility program that meets the national visibility goal for their state. Section 169(A)(b)(2) requires States to direct sources subject to BART to comply with a BART determination. In accordance with section 169B, states, acting together through visibility transport commissions, are primarily responsible for formulating a coordinated response to interstate transport of visibility. With respect to the RHR and the BART Guidelines, the CAA only requires that states take measures necessary to make reasonable progress toward the national goal by engaging in the process of weighing statutory factors. Regarding EPA's role, section 169A(g)(2) (as defined in *Train v. Natural Res. Def. Council*, 421 U.S. 60, 79 (1975)) provides that EPA may disapprove a SIP only where a state's SIP fails to meet the minimum CAA requirements.

*Response:* We agree that the states are assigned statutory and regulatory authority to draft and implement the visibility program as well as to make BART determinations for sources within their state. Although the states generally have the freedom to determine the weight and significance of the statutory factors in making BART determinations<sup>226</sup>, they have an overriding obligation to come to a conclusion that is based on reasoned analysis. Similarly, states are given flexibility in determining reasonable progress, but in making that determination, they are required by the CAA to consider certain factors. Whether one characterizes EPA's role as limited or not limited in reviewing RH SIPs, EPA must determine if the state's SIP meets the applicable statutory and

regulatory requirements. The state's BART determinations for some sources, its LTS, and RPGs were flawed for reasons discussed elsewhere in this notice and the proposed rulemaking. While states have the authority to exercise different choices in determining BART or setting RPGs, such decisions must be reasonable and consistent with statutory and regulatory requirements. Arkansas's errors were significant enough that we cannot conclude that the state's decision met this standard. Our disapproval of portions of the RH SIP has an appropriate basis in our CAA authority.

*Comment:* U.S. courts agree that EPA's role in reviewing visibility programs and determining BART is limited. According to *American Corn Growers Ass'n v. EPA*, 291 F.3d 1 (DC Circuit 2002), states play the lead role in designing and implementing RH programs. American Corn Growers outlined the legislative history, including the Conference Report on the 1977 amendments, when the Court invalidated past regulatory provisions regarding BART for constraining state authority. The Court stated that the Conference report confirmed that Congress intended states to decide which sources impair visibility and what BART controls apply to those sources.

*Response:* We agree that the CAA places the requirements for developing RH plans and determining BART for BART-eligible sources on states. As discussed above, EPA's role is to review the RH SIP submittal including the BART determinations and determine if the state met the applicable statutory and regulatory requirements. While the court in *American Corn Growers* found that EPA had impermissibly constrained state authority, it did so because it found that EPA forced states to require BART controls without first assessing a source's particular contribution to visibility impairment. This is not the case with our action. We are not forcing Arkansas to adopt a particular measure or to weigh the statutory factors in a particular way. Rather, we are disapproving portions of Arkansas's RH SIP that address BART, LTS, and RPGs because the state omitted critical analyses and made flawed assumptions that compromise any decisions.

*Comment:* The Supreme Court has ruled that states have primary authority in issues relating to the CAA. In *Train v. Natural Res. Def. Council*, 421 U.S. 60 (1975), the court ruled that EPA had no authority to question the wisdom of a state's choices of emissions limitations if they are part of a plan which satisfies the standards of the CAA. The EPA may

<sup>226</sup> States must follow the BART Guidelines in making BART determinations for EGUs at power plants with a total generating capacity greater than 750 MW. 40 CFR 51.308(e)(1)(ii)(B). In establishing presumptive limits for these sources, EPA undertook a partial weighing of the statutory factors that apply to BART determinations.

devise and promulgate a specific plan of its own only if a state fails to submit an implementation plan which satisfies those standards.

*Response:* Our action does not contradict the Supreme Court's decision in *Train*. States have significant responsibilities in implementation of the CAA and meeting the requirements of the RHR. We recognize that states have the primary responsibility of drafting an implementation plan to address the requirements of the CAA Visibility Program. We also recognize that we have the responsibility of ensuring that the state plans, including RH SIPs, conform to the CAA requirements. We cannot approve a RH SIP that fails to address BART, LTS, and RPGs with a reasoned consideration of the statutory and regulatory requirements of the CAA and the RHR.

*Comment:* Because visibility impairment is primarily aesthetic and does not rise to the same level of public policy concern as dangers to the public health, Congress made the national visibility goal discretionary. Accordingly, unlike other provisions of the CAA, the national visibility goal is not considered to be a non-discretionary duty of the Administrator under section 169A(f). Likewise, the court in *American Corn Growers* has recognized that the natural visibility goal is not a mandate but a goal. In addition, the CAA does not mandate a particular timeframe to meet the national goal of natural visibility, only that states make reasonable progress. The amount of progress that is reasonable is not defined according to objective criteria but instead involves balancing of public interest.

*Response:* We do not agree that the CAA or RHR prescribes a different degree of authority to states based on the program having the goal of improving visibility as opposed to preventing adverse human health effects. Among other things, the CAA requires states to submit plans that satisfy NAAQS standards set to protect both public health and welfare. Nothing in the terms of the CAA or its implementation history directs that SIP submittals addressing visibility are subject to a different standard of evaluation than SIP submittals that directly address public health issues associated with air pollutants. The distinction is not relevant to state authority to develop RH SIPs and does not diminish our responsibility and authority to require that they conform to the RHR and the Act.

More generally, we agree that the CAA does not mandate a particular timeframe to meet the national visibility

goal. The comment is not relevant, however, as our action to partially disapprove Arkansas's RH SIP is not based on a finding by EPA that Arkansas's RH SIP fails to achieve the national goal. Similarly, EPA is not disapproving Arkansas's RH SIP because we disagree *per se* with the State's conclusions as to what constitutes reasonable progress for this time period. Our disapproval of the Arkansas RH SIP is based on the fact that critical analyses were omitted and that these omissions compromise Arkansas's determinations as to the measures necessary to make reasonable progress.

*Comment:* Although EPA can set national goals and guidelines for the RH program, individual states have the authority to select BART for specific sources of emissions and design the specific plans that are appropriate for respective populations. The RHR does not require a definitive dv or percent improvement in visibility. The only thing the RHR requires of each state is to demonstrate an improvement in visibility. The Arkansas RH SIP meets EPA's national goals and guidelines. The Arkansas RH SIP establishes a firm foundation to meet the required RPGs and meets and in some cases even exceeds the requirements of the RHR.

*Response:* We do not agree that the only thing that the RHR requires is for each state to demonstrate an improvement in visibility. The RHR outlines a process by which states are to evaluate and develop RH SIPs, including the process for making BART determinations. The EPA is disapproving portions of Arkansas's RH SIP that address BART, LTS, and RPGs because the state omitted critical analyses in accordance with the requirements of the CAA and the RHR.

*Comment:* The preamble to the RHR recognized that States are the primary decision makers in determining how to make BART determinations and determining which sources are subject to BART. In analyzing the applicability of certain executive orders to the proposed RHR, EPA states that states will ultimately determine the sources subject to BART and the appropriate level of control for such sources, and that states accordingly exercise substantial intervening discretion in implementing the final rule (70 FR 39155).

*Response:* We agree that states are assigned statutory authority to determine BART and that EPA has made statements confirming the state's authority in this regard. States have the flexibility to determine the weight and significance of the statutory factors.

However, states must make a reasoned determination consistent with the requirements of the RHR. As detailed in our proposal and the supporting TSD, Arkansas's BART determination for nine units, Arkansas's LTS, and RPGs did not provide reasoned determinations conforming to the requirements of the RHR.

*Comment:* The EPA partially disapproved Arkansas's RH SIP because the EPA disagreed with the State's conclusions. The EPA failed to defer to the State's lawful exercise of its discretion pursuant to the CAA's provisions for visibility protection.

*Response:* Our partial disapproval of Arkansas's RH SIP is not based on the resulting Arkansas conclusions. Rather our decision to disapprove Arkansas's BART determinations for nine units, LTS, and RPGs is because the state omitted critical analyses and made flawed assumptions that compromise the resulting determinations. The State could submit and EPA would approve RH SIP revisions that reached identical determinations as the current SIP submittal if Arkansas's analysis in reaching those determinations meets the RHR and the Act.

*Comment:* The EPA has overstepped its authority in proposing to reject the state's BART determinations on the basis of EPA's view that the state's consideration of certain statutory factors was not "adequate." The state, as the determining authority, has the power to decide how each of the BART factors should be taken into account and weighed. As long as a state considers a given factor, it has met its obligations in regards to that factor. Once the state has made its decision, EPA has no authority to "second-guess" the conclusions that the state has reached.

*Response:* As explained earlier, the states have the responsibility to draft the RH SIP and the EPA has the responsibility of ensuring State plans, including RH SIPs, conform to the CAA. As the drafter of the RH SIP, the state generally has the authority to decide how each of the BART factors are taken into account and weighed. EPA is not disapproving Arkansas's BART determinations because it disagrees with how Arkansas weighed the relevant factors, such as the cost of controls or the degree of visibility improvement resulting from the use of controls. The EPA is disapproving certain Arkansas's BART determinations because they did not consider these factors in their BART determinations in accordance with the RHR and the Act.

*Comment:* All of the BART determinations made by Arkansas RH SIP should be disapproved because

Arkansas did not do its own BART analysis in making its BART determinations. Instead, Arkansas RH SIP adopted the companies' BART analysis as part of the RH SIP and promulgated them into State regulation. Given that Arkansas has not made any of its own BART determinations, there are no BART determinations for EPA to act on.

*Response:* Arkansas submitted a RH SIP which provided BART determinations for sources that are subject to BART. Arkansas requested that sources subject to BART submit material including a BART analysis. Arkansas then reviewed the analysis and data provided by the sources and adopted its BART determinations. The EPA reviews RH SIP submittals from states that rely upon source-generated data and information to evaluate whether the State's decisions meet the Act and EPA rules. In Arkansas's case, after their review of the sources' provided information, they reached the same BART determinations as was provided by the source.

*Comment:* Arkansas improperly planned to make its BART determinations during the permitting process, not in the SIP submittal. In 2009, ADEQ proposed a Title V permit amendment for Entergy's White Bluff power plant to, among other things, incorporate BART emission limits and requirements, in which ADEQ proposed different pollution controls as BART than what was in the company's BART analysis in Appendix 9.3 of the Arkansas RH SIP submitted to EPA.

*Response:* We disagree that Arkansas planned to make its BART determinations during the permitting process, be it through the New Source Review preconstruction permitting SIP process or the Title V operating permit program. The State adopted its BART determinations through rulemaking and they are found in Chapter 15 of APCEC Regulation No. 19, as contained in the RH SIP submissions. Each of the BART determinations approved by EPA today becomes effective under Federal law. It also becomes an applicable requirement that must be included in a Title V permit. Any source subject to the BART determinations approved today must at a minimum meet these requirements, as expressed in 40 CFR 51.308(e). If Arkansas issues a Title V permit that has less stringent requirements than the EPA-approved BART determination, then the source is subject to Federal enforcement action. It is incumbent upon the source to ensure that its Title V permit application meets all the applicable Federal requirements. It also is incumbent upon the source to ensure

that it meets the most stringent applicable Federal requirement. If the State wishes to impose BART emission limitations in a Title V permit that are different from what EPA is approving today as BART, then Arkansas must adopt and submit a revised RH SIP and submit it to EPA for approval as a SIP revision.

*Comment:* The EPA should not act on any of the company's BART analyses, unless it conducts its own analysis of a company's submittal in the context of a FIP.

*Response:* Under the CAA, we must, within 24 months following a final disapproval, either approve a SIP or promulgate a FIP.<sup>227</sup> As stated elsewhere in this final rulemaking, we will consider, and would prefer, approving a SIP if the State submits a revised plan that we can approve before the expiration of the mandatory FIP clock for the portions of the SIP we are disapproving in this rulemaking action. In light of this, we are choosing at this time not to perform any BART analyses and not to develop and propose a FIP for the BART determinations we are disapproving.

*Comment:* The EPA has no reason to disapprove a State BART determination that meets the presumptive BART level. The DC Circuit Court of Appeals held in *American Corn Growers Association v. EPA*, that there is nothing in the CAA that would require a State to adopt provisions more stringent than the Federal requirement.

*Response:* In disapproving BART determinations for certain subject-to-BART sources that adopted the presumptive limits, EPA is not requiring Arkansas to establish BART limits that are more stringent than Federal requirements. Under the RHR, presumptive limits were established to provide a path for States to follow when analyzing BART for particular EGUs. The RHR has presumptive limits that act as a starting point for the establishment of BART emission limits unless the state's analysis indicates that an emission limit more or less stringent than the presumptive limit is required. The EPA's BART Rule and the BART Guidelines make clear that in developing the presumptive emission limits, EPA made many design and technological assumptions, and that the presumptive limits may not be BART in every case. As such, the presumption in the BART Rule is that the controls reflected by the presumptive limits are cost-effective, not that the presumptive limits will be BART in every case.

Thus, EPA's proposed rulemaking on the Arkansas RH SIP did not propose to require Arkansas's subject to BART sources to achieve an emission rate more stringent than the presumptive emission limits. Rather, EPA's proposed rulemaking proposed to disapprove the BART emission limits for subject to BART sources where the State adopted presumptive emission limits without conducting a proper BART five-factor analysis. Only after the State conducts a proper evaluation of the five statutory factors, as required by 40 CFR 51.308(e)(1)(ii)(A) and section 169A(g) of the CAA, or EPA conducts one in the context of a FIP, will it be demonstrated whether any of Arkansas's subject to BART sources must achieve an emission rate more (or less) stringent than the presumptive limits.

*Comment:* Because the State of Arkansas adopted EPA's presumptive emission limits by default, the State of Arkansas did not fulfill its statutory duty under 169A of the CAA and under Arkansas law to determine BART. In addition, the State of Arkansas failed to determine, using the five factors required under section 169A of the CAA whether the actual costs of the proposed control technology justified the State's determination of BART for those facilities.

*Response:* As explained above, presumptive limits are the starting point in a BART determination unless the state determines that the general assumptions underlying EPA's analysis in the RHR are not applicable to a particular case. Section 169A outlines the analysis that is required in order to make a BART determination. We are finding that the State's BART determinations for certain subject-to-BART sources do not comply with the CAA requirements by adopting the presumptive emissions limit without conducting a proper BART five factor analysis. Only after the State conducts a proper evaluation of the five statutory factors, as required by 40 CFR 51.308(e)(1)(ii)(A) and section 169A(g) of the CAA, or EPA conducts one in the context of a FIP, will it be demonstrated whether any of Arkansas's subject to BART sources must achieve an emission rate more (or less) stringent than the presumptive limits.

*Comment:* The portion of the Arkansas RH SIP that EPA has proposed to approve is not separable from the overall Arkansas RH SIP. The EPA should fully disapprove the Arkansas RH SIP because it fails to meet the requirements for RH SIPs.

*Response:* The Arkansas BART determinations for some of the units, LTS, and RPGs are separable portions of

<sup>227</sup> CAA section 110(c)(1).

the RH SIP submittal. The EPA can approve some of the SIP submittal and disapprove the remainder as long as the portions that are disapproved do not affect those that are approved. This is the case in our action partially disapproving Arkansas's RH SIP for its BART determinations for some of the units, LTS, and RPGs and approving the remainder of the RH SIP.

## 2. Comments on Interstate Transport and Visibility

*Comment:* Arkansas's April 2008 Interstate Transport SIP was in accordance with the 2006 Guidance, and virtually identical to those submitted by Arizona, Iowa, Kansas, Minnesota, Nebraska, Nevada, South Dakota, Utah, and Wyoming. The EPA approved those states' Interstate Transport SIPs in a timely fashion because they were consistent with EPA's 2006 Guidance, yet ignored Arkansas's Interstate Transport SIP until after EPA's statutory deadline to act; when it evaluated the SIP, it was not by the criteria established in the 2006 Guidance. In an August 2011 rulemaking to promulgate a Federal implementation plan (FIP) for visibility improvement in New Mexico, EPA for the first time claimed its 2006 Guidance interpreting the Good Neighbor Provision of the CAA- on which Arkansas had based its 2008 Interstate Transport SIP- had been published "in error" (76 FR 52418). In the same rulemaking, EPA put forth a new framework for interpreting the requirements pursuant to the visibility component of the Good Neighbor Provision. Inconsistent with the 2006 Guidance, EPA now holds that it is possible to determine whether a state is violating the Good Neighbor Provision, based on what the state "should" have in its Regional Haze SIP. EPA's new criteria for evaluating Interstate Transport SIP submissions is based on the air quality modeling performed by regional planning organizations, and on whether there are differences between emissions reductions in a state's RH SIP and emissions reductions assumptions derived from the air modeling performed by regional planning organizations. Although EPA has not issued a new guidance document to reflect what states "should" have in their SIPs "at this point in time," EPA has approved the visibility component of several Interstate Transport SIPs using criteria other than the 2006 Guidance. The EPA has not explained this regulatory inconsistency between its treatment of Arkansas's Interstate Transport SIP versus Arizona, Iowa, Kansas, Minnesota, Nebraska, Nevada,

South Dakota, Utah, and Wyoming's Interstate Transport SIPs. The EPA cannot hold different states to different requirements pursuant to the visibility component of the CAA's Good Neighbor Provision.

*Response:* Section 110(a)(2)(D)(i)(II) does not explicitly define what is required in SIPs to prevent the prohibited impact on visibility in other states nor does it explicitly define how to determine if an action by a state is interfering with another state's specific visibility measure. A RH SIP that provides for emissions reductions consistent with the assumptions used in the modeling of other CENRAP states is an appropriate way to meet a state's obligations to the other regional planning states with regards to non-interference with another state's visibility measures is consistent with the CAA.

On March 28, 2008, Arkansas submitted revisions to its section 110(a)(2)(D)(i) Interstate Transport SIP. In its March 28, 2008 SIP submission, Arkansas stated it is meeting the requirements for protection of visibility in section 110(a)(2)(D)(i)(II) by the adoption in 2007 of Chapter 15 of APCEC Regulation No. 19, which established Arkansas's RH program requirements. Arkansas also stated in the March 28, 2008, SIP submission, that it was not possible at that time to assess whether there is interference with measures in the applicable SIP for another state until the Arkansas RH SIP is submitted and approved by EPA. Arkansas also submitted Chapter 15, Regulation 19 in its September 9, 2008 RH SIP submittal. The Arkansas RH regulation established a compliance timeframe of October 15, 2013, six years after the adoption of the state regulation or within five years of the date of the approval of the RH SIP by EPA, whichever date comes first. Chapter 15, Regulation 19 outlined the BART determinations for sources within Arkansas including some sources that do not require a mandatory BART determination under the RHR. The emission reductions resulting from the State BART determinations codified in Chapter 15, Regulation 19 are identical to the emissions reductions promised by Arkansas to the other CENRAP member states and included in the CENRAP 2018 emissions inventory modeling to represent Arkansas's share of emission reductions for the region. The CENRAP member states are basing their RPGs and RH programs from this anticipated CENRAP 2018 emissions inventory modeling. On September 23, 2008, Arkansas submitted its RH SIP

including Chapter 15, Regulation 19 to EPA for approval.

The EPA could have approved Arkansas's 110(a)(2)(D)(i) Interstate Transport SIP in 2008 when Arkansas originally submitted the SIP. Chapter 15, Regulation 19 originally established a compliance timeframe of October 15, 2013, six years after the adoption of the state regulation or within five years of the date of the approval of the RH SIP by EPA, whichever date comes first. This provided the necessary emission limits and enforceable mechanisms to ensure Arkansas's apportionment of emissions reductions used in the CENRAP modeling. However, on March 17, 2010, Arkansas granted a variance from the October 15, 2013 deadline imposed by Regulation 19.1504(B) for sources subject to BART listed at Regulation 19.1504(A). Instead, sources subject-to-BART are required to comply with BART only within five years after EPA approves Arkansas's RH SIP. This variance was never submitted to EPA as a SIP revision. As explained in an earlier response to comments, we are disapproving the portion of the BART compliance provision found in the 2008 submitted Chapter 15 of Regulation No. 19 that requires compliance with BART requirements no later than six years after the effective date of the State's regulation since Arkansas no longer has the legal authority to enforce this provision. We are partially approving and partially disapproving the portion of the BART compliance provision that requires each Arkansas subject-to-BART source to install and operate BART as expeditiously as practicable, but in no event later than five years after EPA approval of the Arkansas RH SIP consistent with the requirements under 40 CFR § 51.308(e)(iv). Because of our disapproval of the six year compliance timeframe in Arkansas's 2008 submitted Chapter 15 of Regulation 19, as well as disapproval of certain BART determinations, all of Arkansas's promised enforceable emission reductions factored into CENRAP's 2018 emissions inventory modeling and relied upon by fellow CENRAP member states in developing their RPGs and RH SIPs will not be met. Thus, the requirements for section 110(a)(2)(D)(i)(II) will not be met.

If we had acted upon the Arkansas RH SIP earlier than 2010, it would not change EPA's determination that Arkansas's emissions are interfering with other states' visibility programs because Arkansas's subsequent adoption of the BART variance removing the guaranteed six year compliance requirement would have rendered the hypothetically-approved section

110(a)(2)(D)(i)(II) SIP provisions unenforceable. To address this, we would be required to issue a SIP Call now and Arkansas would be required to revise its SIP to correct the inadequacies by a given due date or face sanctions for failure to timely submit a complete SIP revision. The BART determinations we would have disapproved in our earlier hypothetical action would no longer be required to occur by October 2013 under the State's law regardless of EPA's disapproval action, and therefore Arkansas emissions would continue to interfere with other states' visibility programs. The emissions reductions resulting from those BART determinations would not be required to happen at all since the variance conditions BART compliance upon EPA approval of the Arkansas RH SIP.

The EPA's partial disapproval of Arkansas's SIP addressing section 110(a)(2)(D)(i)(II) is consistent with EPA's actions on the SIPs of Arizona, Iowa, Kansas, Minnesota, Nebraska, Nevada, South Dakota, Utah, and Wyoming. Section 110(a)(2)(D)(i)(II) does not explicitly define what is required in SIPs to prevent the prohibited impact on visibility in other states. However, because the RH program requires measures that must be included in SIPs specifically to protect visibility, EPA's 2006 Guidance recommended that RH SIP submissions meeting the requirements of CAA section 110(a)(2)(D)(i)(II) with respect to visibility would be sufficient. We approved the SIPs of Arizona, Iowa, Kansas, Minnesota, Nebraska, Nevada, South Dakota, Utah and Wyoming in accordance with the 2006 Guidance in 2007 and 2008. However, our 2006 Guidance reflected our recommendations for how states could potentially meet the section 110(a)(2)(D)(i)(II) requirement at that point in time. As of August 2006, we stated our belief that it was "currently" premature for states to make a more substantive SIP submission for this element, because of the anticipated imminent RH SIP submissions. We explicitly stated that "at this point in time" in August of 2006, it was not possible to assess whether emissions from sources in the state would interfere with measures in the SIPs of other states. As subsequent events have demonstrated, we were mistaken as to the assumption that all states would submit RH SIPs in December of 2007 and mistaken as to the assumption that all such submissions would meet applicable RH program requirements and therefore be approved shortly thereafter. Thus, the premise of the 2006

Guidance that it would be appropriate to await submission and approval of such RH SIPs before evaluating SIPs for compliance with section 110(a)(2)(D)(i)(II) was in error. Our 2006 Guidance was clearly intended to make recommendations that were relevant at that point in time, and subsequent events have rendered it inappropriate in this specific action.

Because of the need to act immediately on section 110(a)(2)(D)(i), when some states did not make the RH SIP submission in whole or in part, or did not make an approvable RH SIP submission, we have evaluated whether states could comply with section 110(a)(2)(D)(i)(II) by other means. Thus, we have elsewhere determined that states may also be able to satisfy the requirements of CAA section 110(a)(2)(D)(i)(II) with something less than an approved RH SIP, see e.g. Colorado (76 FR 22036 (April 20, 2011)), Idaho (76 FR 36329 (June 22, 2011)), and New Mexico (76 FR 52388 (August, 22, 2011)). In other words, an approved RH SIP is not the only possible means to satisfy the requirements of CAA section 110(a)(2)(D)(i)(II) with respect to visibility; however such a SIP could be sufficient.

As stated earlier, Arkansas submitted revisions to its section 110(a)(2)(D)(i) Interstate Transport SIP that addressed the requirements for protection of Visibility in section 110(a)(2)(D)(i)(II) by enacting the Arkansas Pollution Control and Ecology Commission regulation Chapter 15, Regulation 19 that established Arkansas's RH program requirements and stating that it was not possible at this time to assess whether there is interference with measures in the applicable SIP for another state until Arkansas's RH SIP is submitted and approved by EPA. Since EPA was no longer waiting for the approval of a RH SIP to determine interference with another state's visibility program, we looked at BART determinations cited in Chapter 15, Regulation 19 and submitted in their Interstate Transport SIP. The emission reductions resulting from the BART determinations in Chapter 15, Regulation 19 are identical to the emissions reductions promised by Arkansas to the other CENRAP member states and included in the 2018 CENRAP modeling to represent Arkansas's share of emission reductions for the region. The CENRAP member states are basing their RPGs and RH programs on this CENRAP modeling.

As in New Mexico, we have determined that the analysis conducted by a RPO such as CENRAP provides an appropriate means to ensure that emissions from sources within the state

are not interfering with the visibility programs of other states, as contemplated in section 110(a)(2)(D)(i)(II). In developing their visibility projections using photochemical grid modeling, CENRAP states assumed a certain level of emissions from sources within Arkansas. Although we have not yet received all RH SIPs, we understand that the CENRAP states used the visibility projection modeling to establish their own respective RPGs. Thus, we believe that an implementation plan that provides for emissions reductions consistent with the assumptions used in the CENRAP modeling will ensure that emissions from Arkansas sources do not interfere with the measures designed to protect visibility in other states.

For Arkansas, the EPA is disapproving certain BART determinations. This means that some sources within Arkansas do not have an enforceable emission reduction requirement to meet the emissions reductions promised by Arkansas to CENRAP member states and modeled by CENRAP in their anticipated 2018 emissions inventory because, as explained earlier, Arkansas's enactment of a variance that conditions the BART determinations in Chapter 15, Regulation 19 upon EPA's approval of Arkansas RH SIP. Since Arkansas no longer has an enforceable requirement for certain Arkansas BART determinations that EPA is disapproving, their promised emissions reductions included in CENRAP's modeling and the resulting 2018 emissions inventory will not be realized even though other CENRAP member states are relying upon them in the promulgation of their RPGs and RH SIPs. Thus, our disapproval of some of Arkansas's BART determination means that we have to disapprove a portion of the section 110(a)(2)(D)(i)(II) SIP submittal.

*Comment:* The EPA cannot at this time make a determination of whether Arkansas RH SIP interferes with measures in another state's RH SIP for purposes of protecting visibility since EPA has not yet approved any other RH SIP for a state with a class area that may be affected by Arkansas sources.

*Response:* We disagree that we cannot make a determination of whether the Arkansas RH SIP interferes with measures in another state's RH SIP for purposes of protecting visibility without approving other states' RH SIPs that have a class I area that may be affected by Arkansas sources. The comment is inconsistent with the objectives of the statute to protect visibility programs in



other states if a state never submits an approvable RH SIP. Second, this approach is inconsistent with the time requirements of section 110(a)(1) which specifies that SIP submissions to address section 110(a)(2)(D)(i), including the visibility prong of that section, must be made within three years after the promulgation of a new or revised NAAQS. While there have been delays with both RH SIP submissions by states and our actions on those RH SIP submissions, those delays do not support a reading of the statute that overrides the timing requirements of the statute. At this point in time, states are required to have submitted RH plans to EPA that establish RPGs for class I areas. This requirement applies whether or not states have, in fact, submitted such plans. We believe that there are means available now to evaluate whether a state's section 110(a)(2)(D)(i)(II) SIP submission meets the substantive requirement that it contain provisions to prohibit interference with the visibility programs of other states, and therefore that further delay, until all RH SIPs are submitted and fully approved, is unwarranted and inconsistent with the key objective to protect visibility.

*Comment:* There is nothing in the record to demonstrate that Arkansas RH SIP interferes with any measure included in any other state's SIP for the purpose of protecting visibility. Missouri is the only state with Federal Class I areas where visibility is impacted by the interstate transport of haze-causing emissions originating in Arkansas, and per a consent decree, EPA is not required to act on Missouri's Regional Haze SIP submission until June 15, 2012 (76 FR 75544).

*Response:* As explained in an earlier response, the EPA does not have to wait to make a determination of interference with another state's visibility program until EPA approves Arkansas's RH SIP or the surrounding states' RH SIPs that have a class I area affected by Arkansas emissions because EPA has a duty to act and an ability to make a section 110(a)(2)(D)(i)(II) determination through means other than an approvable RH SIP. Arkansas is a member state of CENRAP, the regional planning committee on regional haze. Each state based its RH Plans and RPGs based on CENRAP modeling. The CENRAP modeling was based in part on the emissions reductions each state intended to achieve by 2018. In the case of Arkansas, some of the emissions reductions included in the modeling, and thus relied upon by other states, were from BART controls on Arkansas subject to BART sources. Since, as discussed in a previous response,

compliance of Arkansas's subject to BART sources with BART requirements is dependent upon our approval of the RH SIP, and since we are proposing to disapprove the portion of the RH SIP which includes some of Arkansas's BART determinations, a portion of the emission reductions committed to by Arkansas and relied upon by other states including Missouri will not be realized. As a consequence, Arkansas's emissions will interfere with other states' SIPs to protect visibility. Therefore, we are partially approving and partially disapproving the portion of the Arkansas Interstate Transport SIP submittal that addresses the visibility requirement of section 110(a)(2)(D)(i)(ii) that emissions from Arkansas sources not interfere with measures required in the SIP of any other state under part C of the CAA to protect visibility.

*Comment:* To the extent that EPA's disapproval of the Arkansas RH SIP is premised on the language in section 110(a)(2)(D)(i)(II), but is not based on direct interference with a specific measure in another state's RH SIP, as opposed to interference with a RH related goal in or underlying another state's SIP as required by statute, EPA's interpretation is contrary to the clear and express language of section 110 of the CAA.

*Response:* Section 110(a)(2)(D)(i)(II) does not explicitly define what is required in SIPs to prevent the prohibited impact on visibility in other states nor does it explicitly define how to determine if an action by a state is interfering with another state's specific visibility measure. A RH SIP that provides for emissions reductions consistent with the assumptions used in the modeling of other CENRAP states is appropriate to meet a state's obligations to the other regional planning states with regards to non-interference with another state's visibility measures and is consistent with the CAA. The "2006 Guidance for SIP Submissions to Meet Current Outstanding Obligations Under Section 110(a)(2)(D)(i) for the 8-Hour Ozone and PM<sub>2.5</sub> NAAQS" defined that a RH SIP submittal can determine whether or not a state SIP for 8 hour ozone or PM<sub>2.5</sub> contain adequate provisions to prohibit emissions that interfere with measure in other states. As explained earlier, Arkansas chose to meet their section 110(a)(2)(D)(i)(II) requirements through their BART determinations. These emissions reductions were promised to other CENRAP states and included in the CENRAP modeling used by other states to develop their RPGs. As discussed previously, by Arkansas having some of its BART determinations disapproved

today by EPA, Arkansas will no longer meet its committed-to emission reductions that the other states are relying on in order to meet their RH SIPs and RPGs.

*Comment:* The EPA's interpretation of section 110(a)(2)(D)(i)(II) is contrary to the CAA's clear direction that each state is to determine its own emission limits, schedules of compliance, and other measures for sources in that state for purposes of visibility protection under 169A. The EPA's interpretation would effectively give one state the power to control another state's RH SIP decisions including its BART determinations.

*Response:* As explained earlier, Arkansas elected to have its promised emission reductions used in the CENRAP modeling and relied upon by other CENRAP member states. These emission reductions Arkansas committed to are reflected in the Arkansas RH SIP submittal from BART controls on Arkansas subject to BART sources. An approved RH SIP that includes emissions limits, schedules of compliance, and other measures for sources in that state for purposes of visibility protection under 169A is not the only possible means to satisfy the requirements of CAA section 110(a)(2)(D)(i)(II). States can meet section 110(a)(2)(D)(i)(II) by adopting emissions limits that were promised as part of the regional planning process. A RH SIP submittal including BART controls on subject to BART sources can also meet the requirements of section 110(a)(2)(D)(i)(II). Arkansas chose to take both of these approaches by adoption of their promised CENRAP emissions reductions in their BART determinations as submitted in their RH SIP under Arkansas Chapter 15, Regulation 19.

This approach does not give one state the power to control another state's RH SIP decisions including its BART determinations. Each individual state member of the regional planning committee has the autonomy to make their own decisions on how they are going to reduce their state's emissions and contribute to the overall group's effort to reduce RH in the region. We are abiding by Arkansas's decision to have its BART determinations be representative of promised emission reductions relied upon by other states. As discussed previously, by us disapproving some of Arkansas's BART determinations, the relied-upon emissions reductions used in the development of other CENRAP member state RPGs and RH SIPs will not occur. Therefore, we are partially approving and partially disapproving the portion of the Arkansas Interstate Transport SIP

submittal that addresses the visibility requirement of section 110(a)(2)(D)(i)(ii) that emissions from Arkansas sources not interfere with measures required in the SIP of any other state under part C of the CAA to protect visibility.

*Comment:* Based upon EPA's 2006 Interstate Transport Guidance, conclusions regarding whether emissions from any one state could interfere with measures of neighboring states to protect visibility can only be reached when a neighboring state's RH SIP has been approved. This has not occurred. In addition, the 2006 Interstate Transport Guidance provides that a state satisfies the requirements of the visibility component of the interstate transport SIPs by submitting an Interstate Transport SIP confirming that it is not possible at the time of that submission to assess whether a state's emissions would interfere with measures required to protect visibility in the applicable SIP for another state and submit a RH SIP at a later date and approved by EPA. This is what Arkansas did. In keeping with the 2006 Guidance, EPA should instead approve Arkansas's 2007 Interstate Transport SIP and confine its action on visibility impairment to proceeding on the state's RH SIP and not act on section 110(a)(2)(D)(i)(II) until the state's RH SIP is approved.

*Response:* Our guidance on submissions in August of 2006 states that "at this time point and time," it is not possible to assess whether emissions from sources in the state would interfere with measures in the SIPs of other states until RH SIPs are submitted and approved. At the time of the writing of the 2006 Guidance, we mistakenly assumed that all states would submit RH SIPs in December of 2007, as required by the RHR, and mistakenly assumed that all such submissions would meet applicable RH program requirements and therefore be approved shortly thereafter. This did not happen. Thus, our premise, as stated in the 2006 Guidance, that it would be appropriate to await submission and approval of such RH SIPs before evaluating SIPs for compliance with section 110(a)(2)(D)(i)(II), was in error. This is especially true in light of the timing requirements of section 110(a)(1) which specifies that SIP submissions to address section 110(a)(2)(D)(i), including the visibility prong of that section, must be made within three years after the promulgation of a new or revised NAAQS. Our 2006 Guidance was clearly intended to make recommendations that were relevant at that point in time, and subsequent events have made it unsuitable to delay

this action regarding Arkansas's emissions interfering with other state's visibility measures before all RH SIPs affected by Arkansas emissions are approved. We must therefore act upon Arkansas's submission in light of the actual facts, and in light of the statutory requirements of section 110(a)(2)(D)(i). In order to evaluate whether the state's SIP currently in fact contains provisions sufficient to prevent the prohibited impacts on the required programs of other states, we are obligated to consider the current circumstances and investigate the levels of controls at Arkansas sources and whether those controls are or are not sufficient to prevent such impacts. Here, as explained earlier, Arkansas promised emission reductions from BART eligible sources and had those emissions reductions included in the CENRAP modeling that other states are relying on in developing their RFGs and RH SIPs. Because we are disapproving some of Arkansas's BART determinations, as previously discussed, Arkansas will not meet its CENRAP emission reduction commitments relied upon by other states. Thus, Arkansas's sources will interfere with other state's visibility measures.

*Comment:* The EPA's proposed rule is incorrect in its conclusion that the 1997 promulgation of new or revised NAAQS for PM<sub>2.5</sub> and ozone created an obligation in the part of Arkansas (or any other state) to submit a section 110(a)(2)(D)(i)(II) SIP revision with respect to visibility protection. Promulgation or revision of any NAAQS is entirely unrelated to the Part C visibility SIP requirements. The only additional SIP obligations with respect to section 110(a)(2)(D)(i)(II) and new or revised NAAQS are NAAQS attainment and maintenance. No obligation to address Part C visibility components of a SIP arises merely as a result of NAAQS promulgation or revision. The EPA should conclude that the promulgation of revised ozone and PM<sub>2.5</sub> NAAQS creates no obligation on the part of any state to submit any section 110(a)(2)(D)(i)(II) SIP revision with respect to visibility protection.

*Response:* We disagree. Reduced visibility is an effect of air pollution, and the emissions of PM<sub>2.5</sub> and ozone and its precursors can contribute to visibility impairment. SIP planning for the control of these pollutants on the promulgation of a new NAAQS will therefore implicate control measures and issues relating to visibility. CAA section 110(a)(1) therefore requires implementation plans submitted in the wake of a newly promulgated NAAQS to address whether the state has

adequate provisions to prevent interference with the efforts of other states to protect visibility. The obligation to address Part C visibility components expressly follows from the language of section 110(a) concerning when plans must be submitted and what each implementation plan must contain.

*Comment:* The EPA mistakenly refers to the "Interstate Transport SIP" in its proposed disapproval of a portion of the Arkansas Interstate Transport SIP that addresses the visibility requirement of section 110(a)(2)(D)(i)(II) that emissions from Arkansas sources not interfere with other state's visibility protection programs, but it is more accurately referred to as an "Infrastructure SIP." In addition, the EPA failed to include in its proposed disapproval that it did not immediately require the state to make these SIP submittals. When EPA was sued for not having these submittals, the EPA issued its finding of failure notices to all states. If these SIPs had been required and submitted upon promulgation of the 1997 revision to the NAAQS for 8-hour ozone, it is unlikely that the RH program would have been considered an element of a typical "Infrastructure SIP."

*Response:* Interstate Transport SIPs and Infrastructure SIPs address SIP requirements under section 110 under the CAA which requires states to adopt and submit to EPA a SIP that includes elements 110(a)(2)(A) through (M) within three years after the promulgation or revision of a NAAQS. The EPA has requested states to submit their SIP separately addressing Section 110 Infrastructure requirements and Section 110 Interstate Transport requirements. However, this does not have a legal effect on the contents of the SIP submittal. Section 110(a)(2)(D)(i) elements are reviewed at the same legal standard whether the section 110(a)(2)(D)(i) elements are submitted as part of an Interstate Transport SIP or an Infrastructure SIP submittal.

At issue is Arkansas's requirement to submit a SIP that addresses the 1997 revision to the NAAQS for 8-hour ozone and PM<sub>2.5</sub>. On July 18, 1997, the EPA promulgated new NAAQS for eight-hour ozone and for PM<sub>2.5</sub>. Section 110(a)(1) of the CAA requires states to submit new SIPs to provide for the implementation, maintenance, and enforcement of new or revised NAAQS. SIPs for a new or revised NAAQS must contain adequate provisions to address interstate transport of air pollution, pursuant to section 110(a)(2)(D)(i). The Clean Air Act requires states to submit SIPs within three years of promulgation of a new or revised NAAQS. This duty to submit a SIP that addresses NAAQS revisions

pursuant to section 110(a)(2)(D)(i) is an affirmative obligation under the CAA and is not dependent upon whether a state is notified of its obligation or issued a finding of failure to act as EPA did in 2005.

If Arkansas had acted promptly in 1997 to address section 110(a)(2)(D)(i) for ozone and PM<sub>2.5</sub>, Arkansas would still have had to consider RH in its SIP submittal. The visibility provisions of the CAA gave notice to the States that they needed to address interstate transport of visibility impairing pollutants through RH. Back in 1977 when Congress enacted the visibility provisions of the CAA, Congress expressed concern with “haze” from “regionally distributed sources<sup>228</sup>” and concluded that additional provisions were needed to “remedy the visibility problem.” Congress amended the visibility provisions in 1990 to more specifically address interstate transport of air pollutants and RH. Section 169B created visibility transport regions to address the interstate transport of air pollutants from one or more states that contribute significantly to visibility impairment in class I areas. Under CAA 169B, each visibility transport region would have a visibility transport commission that was required to study adverse impacts on visibility and recommend regulations to address long range strategies for addressing regional haze. In keeping with the visibility provisions of the CAA, EPA has determined that states may be able to satisfy the requirements of CAA section 110(a)(2)(D)(i)(II) with a state relying on the analysis conducted by a visibility transport commission to ensure that emissions from sources within the state are not interfering with the visibility programs of other states, as contemplated in section 110(a)(2)(D)(i)(II) or an approved RH SIP.

*Comment:* It is an abuse of administrative procedures for EPA to use its proposed disapproval of the BART elements of the Arkansas RH SIP as the basis for not approving a previous SIP submittal upon which it should have already acted. There is no reason to disapprove any portion of the previous submittal as the language stating that Arkansas would rely on the RH regulations to satisfy the section 110(a)(2)(D)(i)(II) is still valid. Therefore, EPA should approve the Arkansas Interstate Transport SIP.

*Response:* As previously discussed, we are acting on section 110(a)(2)(D)(i)(II) based on our disapproval of some of the BART

determinations of the RH SIP submittal since it was Arkansas that represented to other CENRAP member states, and included in the CENRAP modeling, emissions reductions from BART controls on Arkansas sources subject to BART. CENRAP states have relied on those representations in developing their RH SIPs and RPGs. If Arkansas cannot deliver those emission reductions relied on by other states, those emission reductions will interfere with the CENRAP member state visibility programs. While the Arkansas Interstate Transport SIP statement that it relies on the RH regulations to satisfy the section 110(a)(2)(D)(i)(II) is still true, we are obligated to disapprove a portion of the Interstate Transport SIP because we are finding that Arkansas is not satisfying its obligations under the RH regulations and causing emissions from Arkansas to interfere with other states’ visibility programs.

*Comment:* The EPA should approve the Arkansas Interstate Transport SIP. In developing their RH SIPs and RPGs, Arkansas and potentially impacted states collaborated through the CENRAP. Emission reductions for the CENRAP states are scheduled to be fully realized by 2018. Presumably, EPA will have approved some version of an Arkansas SIP by 2013, and any such submittal would have at least the amount of BART reductions provided for in current SIP submittals. With a compliance schedule of no more than 5 years after EPA approval, these reductions would still be realized by 2018.

*Response:* Arkansas is assuming that EPA will have approved Arkansas’s SIP provisions by 2013 that address the promised BART emissions reductions to the CENRAP. The EPA cannot base decisions on potential future actions. Our rulemaking is limited to the events that have occurred at the time of rulemaking. It is not a foregone conclusion that Arkansas will submit and EPA will have approved SIP provisions with the promised emissions reductions by 2013, much less that those emissions reductions would be realized by 2018.

*Comment:* In April 2008, Arkansas submitted an Interstate Transport SIP revision to address its Good Neighbor CAA obligations triggered by the 1997 8-hour ozone and PM<sub>2.5</sub> NAAQS. Section 110(k)(1)(B) of the CAA requires EPA to act on a SIP revision within 18 months. EPA’s proposal does not address why EPA violated the statutory deadline by waiting nearly two years after the deadline in the CAA to take action on Arkansas’s April 2008 Interstate Transport SIP submission.

*Response:* We acknowledge that we are late in acting on Arkansas’s Interstate Transport SIP revisions regarding its “Good Neighbor” CAA obligations triggered by the 1997 8-hour ozone and PM<sub>2.5</sub> NAAQS. We are working diligently to address all of these SIP submittals as quickly and expeditiously as possible. With this action today finalizing our partial approval and partial disapproval of Arkansas’s Interstate Transport SIP addressing impairment of other states’ visibility measures, we are fulfilling our statutory obligation under section 110(a)(2)(D)(i)(II) of the CAA.

*Comment:* Like Oregon and Colorado, Arkansas submitted an Interstate Transport SIP predicated on a RH SIP to address section 110(a)(2)(D)(i)(II). However, EPA has treated Arkansas differently than Oregon and Colorado in meeting the requirements of section 110(a)(2)(D)(i)(II). For Oregon, despite the discrepancies between what was assumed by the RPO and the emission reductions included in Oregon’s RH SIP, EPA approved the visibility component of Oregon’s Interstate Transport SIP after reviewing the RPO’s photochemical modeling emissions projections finding that the emissions reductions included in Oregon’s RH SIP are “approximately equal” to those assumed by neighboring states. For Colorado, in evaluating the visibility component of Colorado’s Interstate Transport SIP, EPA did not consider Colorado’s RH SIP because it had not been approved. Instead, EPA conducted a “weight-of-evidence” evaluation to assess the increase in Colorado sulfates and nitrates emissions above what neighboring states assumed, and concluded that “Colorado has a minimal impact on visibility” at Class I areas in neighboring states. There is no indication that EPA performed such analyses in its evaluation of the visibility component of the Arkansas Interstate Transport SIP, and instead held that any discrepancy between the emissions reductions included in a state’s RH SIP and the emissions reductions assumed by neighboring states is equivalent to “interfering” with the measures of other states to protect visibility. This is similar to EPA’s interpretation of the visibility component of the Good Neighbor Provision in its evaluations of the Interstate Transport SIPs for New Mexico, Oklahoma, and North Dakota. The EPA has failed to identify a threshold of deviation from the CENRAP assumptions in a state’s RH SIP in order to trigger disapproval of visibility provisions of a state’s

<sup>228</sup> H.R. Rep. No. 95–294 at 204 (1977).

Interstate Transport SIP. In addition, the EPA has also failed to address why the criteria EPA used to evaluate the visibility component of Arkansas's Interstate Transport SIP is different from that used to evaluate the Interstate Transport SIPs of other states, in particular those of Oregon and Colorado.

*Response:* The EPA disagrees that our proposed action on the visibility component of Arkansas's Interstate Transport SIP is inconsistent with our actions on the Interstate Transport SIPs of Oregon and Colorado. As described in the comment, EPA approved the visibility component of Oregon's Interstate Transport SIP after reviewing the RPO's photochemical modeling emissions projections and finding that the emissions reductions included in Oregon's RH SIP are "approximately equal" to those assumed by neighboring states. In the case of Arkansas, we are disapproving nearly all of the State's BART determinations for SO<sub>2</sub> and NO<sub>x</sub> (and some PM) emissions limits that Arkansas promised as part of its membership to the CENRAP. Those emissions limits have been included in the 2018 CENRAP modeling, and other states are relying on this modeling in developing their RPGs and RH SIPs. However, as discussed previously, with our disapproval, these anticipated reductions will not be taking place and thus the emissions of SO<sub>2</sub>, NO<sub>x</sub> and PM from Arkansas will interfere with other states' visibility programs. With the disapproval of certain BART determinations and Arkansas's promised BART emissions reductions included in the CENRAP process, there is a large discrepancy between the RPO's photochemical modeling emissions projections (which is reflective of the emissions reductions other states relied on in their RH SIPs) and the emissions reductions that will actually be taking place (*i.e.* the State's BART determinations that we find satisfy the RH requirements).

The comment points out that EPA did not consider Colorado's RH SIP in evaluating the visibility component of Colorado's Interstate Transport SIP because it had not been approved yet. EPA points out that at the time we approved Colorado's Interstate Transport SIP, we had not taken any kind of action on the Colorado RH SIP. In fact, we haven't taken any kind of action on the Colorado RH SIP to date. Therefore, in order to take an informed and appropriate action on the Colorado Interstate Transport SIP, EPA conducted a "weight-of-evidence" evaluation to assess the increase in Colorado sulfates and nitrates emissions above what

neighboring states assumed. Based on the results of that evaluation, we concluded that Colorado has a minimal impact on visibility at Class I areas in neighboring states. This is not the case with Arkansas. As explained in Appendix A to the TSD for our proposed rulemaking on the Arkansas RH SIP, the CENRAP's photochemical modeling clearly shows that Arkansas emissions are causing visibility impairment at the Hercules Glades and Mingo Class I areas in Missouri. As explained above, we proposed to disapprove nearly all of Arkansas's SO<sub>2</sub> and NO<sub>x</sub> (and some PM) BART determinations. In light of the large number (and percentage) of SO<sub>2</sub> and NO<sub>x</sub> emissions reductions that other states relied on, we do not believe that it is necessary at this time to do any other analysis to further support our partial disapproval of the visibility component of Arkansas's Interstate Transport SIP since Arkansas has promised emissions reductions for subject to BART sources, and included them in the CENRAP modeling that other states are relying on in developing their RPGs and RH SIPs, but the emissions reductions for the disapproved BART determinations will not occur.

*Comment:* None of the BART determinations in the Arkansas RH SIP should be approved by EPA, and accordingly EPA should fully disapprove the Arkansas Interstate Transport SIP for visibility protection. In 2018, the contribution from Arkansas sources to visibility impairment in other states (including Missouri and Oklahoma) are projected to increase from 2002 levels. In recognition of this, the State of Oklahoma asked for additional emission reductions from Arkansas sources, but Arkansas did not agree that any further emissions reductions were necessary (2007 Letter from ADEQ to ODEQ, Appendix 11.2 of Arkansas RH SIP). Therefore, it is unlikely that the BART emission limits adopted by Arkansas are sufficient to ensure that sources in Arkansas will not interfere with Oklahoma's ability to ensure reasonable progress toward attaining the national visibility goal at the Wichita Mountains Class I area.

*Response:* Arkansas proposed to comply with the requirements of the Interstate Transport SIP for visibility protection through reductions in emissions from BART eligible sources. This is in keeping with the CAA and is acceptable to EPA. As explained above, we are partially disapproving Arkansas's Interstate Transport SIP for visibility protection because Arkansas proposed to meet these requirements

through the BART determinations that we are disapproving and therefore the relied-upon emissions reductions will not occur. The comment is right that in 2018, the contribution from Arkansas sources to visibility impairment in other states (including Oklahoma and Missouri) is projected to increase from 2002 levels though minimally. However, those projected emissions increases are due to Arkansas's planned building of new facilities which will emit visibility impairing pollutants. The EPA does note that one of the proposed plants included in this projection has recently been cancelled and thus Arkansas projected emissions increases for 2018 will be less than projected in their RH SIP.

For purposes of noninterference with other states' visibility programs, Arkansas met with other regional states and promised that it would contribute a certain portion of the emissions reductions to address RH for the region. Although Oklahoma initially believed that emissions from Arkansas sources are impacting visibility at Wichita Mountains and that it might be necessary for Arkansas to commit to additional emissions reductions, Arkansas responded to ODEQ's concerns with a letter dated August 17, 2007, explaining that based on photochemical modeling, ADEQ had calculated that the total visibility impact from all sources in Arkansas at Wichita Mountains is 0.2 dv.<sup>229</sup> Furthermore, in section X.A. of the Oklahoma RH SIP submitted to EPA, ODEQ references the August 17, 2007 letter sent by ADEQ and states that it is in agreement with the projected emissions reductions from Arkansas and all other states with which it consulted with regard to visibility impairment at Wichita Mountains. For Missouri's consultation with Arkansas regarding emissions reductions, Arkansas and Missouri met in a joint consultation (see our TSD and Arkansas RH SIP), where both states agreed upon the amount of emission reductions each state would provide in order for both states to meet the visibility requirements of the CAA. All the states Arkansas consulted with accepted Arkansas's committed emissions reductions and have based their RPGs and RH SIPs accordingly with the idea that regional states can attain natural visibility conditions for class I areas within their boundaries by 2064 based off of this information. This

<sup>229</sup> See letter from Mike Bates, Air Division Director, Arkansas Department of Environmental Quality, to Eddie Terrill, Air Division Director, Oklahoma Department of Environmental Quality, dated August 17, 2007. This letter is found in Appendix 10.3 of the Arkansas RH SIP.

is consistent with the intent of the visibility program under the CAA to allow the states under a regional planning committee to determine the best way to address visibility impairment for the region. Therefore, we find that partially approving and partially disapproving Arkansas's Interstate Transport SIP with regards to interference with other states' visibility measures is appropriate since Arkansas, working in conjunction with other states in the regional planning organization, committed to certain emissions reductions of subject to BART sources which Arkansas can no longer meet because we are disapproving a portion of Arkansas's BART determinations, and therefore the relied-upon emissions reductions will not occur.

#### H. Other Comments

*Comment:* EPA did not propose a FIP concurrently with its proposal to partially disapprove the Arkansas RH SIP, thus being inconsistent with what EPA has recently proposed for other states. When EPA proposed to partially approve and partially disapprove the RH SIPs of North Dakota and Oklahoma, at the same time EPA proposed FIP requirements for the components of the RH SIP that EPA proposed to disapprove (see 76 FR 58570 and 76 FR 16168). Arkansas submitted its RH SIP earlier than most other states, including at least 18 months before North Dakota and Oklahoma, yet EPA did not propose a FIP concurrently with its proposed partial disapproval of the Arkansas RH SIP and it appears it will be several years before the facilities in the State that are contributing to regional haze install pollution controls and reduce emissions. The residents and visitors to the State of Arkansas are getting the short shrift from EPA compared to the residents and visitors of these other states. This is very important considering that the majority of Arkansas's coal-fired power plants have absolutely no SO<sub>2</sub> controls, and at this point it is not clear that the units will be subject to any regulations other than BART that would require the installation of scrubbers. EPA should not delay any longer in proposing a FIP to address RH in Arkansas.

*Response:* While we appreciate the concerns described in the comment regarding visibility impairment in Arkansas's Class I areas, we note that the CAA section 110(c) requires that EPA promulgate a FIP at any time within 2 years after EPA disapproves a SIP in whole or in part. As explained in our proposed rulemaking, at this time we are not promulgating a FIP for the portions of the Arkansas RH SIP we are

disapproving because ADEQ has expressed its intent to revise the Arkansas RH SIP by correcting the deficiencies in the SIP. We are electing to not promulgate a FIP at this time in order to provide Arkansas time to correct these deficiencies. While EPA has promulgated FIPs concurrently to address the deficiencies of states' RH SIPs, there is no statutory requirement for EPA to do so. Unless we receive a SIP revision from the State that addresses the flaws we identified in our proposed rulemaking and in this final action and satisfies all the regulatory and statutory requirements and we approve it within 2 years of our final partial disapproval of the Arkansas RH SIP, EPA is required to promulgate a FIP within 2 years of our final partial disapproval of the SIP to address the components of the SIP we disapproved.

*Comment:* The State is required to document the technical basis, including modeling, monitoring, and emissions information, on which the State is relying to determine its apportionment of emission reduction obligations necessary for achieving reasonable progress in each mandatory Class I Federal area it affects (see 40 CFR 51.308(d)(3)(iii)). Arkansas relied on the CENRAP modeling and emission inventories to meet this requirement, and therefore Arkansas itself did not provide much of the technical basis for the modeling and emission inventories. EPA has posted some of the relevant CENRAP documents to its docket for the Arkansas RH rulemaking, but not all relevant documents have been provided. There is one document of facility-specific emission projections for 2018 we wanted to evaluate but were unable to locate. Only graphical representations of each state's emissions by source category are provided in the Technical Support Document for the CENRAP modeling. The CENRAP Web site is no longer being maintained and no emission inventory documents are available on that site. We contacted EPA Region 6 to obtain this document, but EPA was unable to locate it. A review of the 2018 facility-specific emission inventory is imperative in reviewing the 2018 modeling projections and the LTS for Arkansas as well as the LTS of other CENRAP states to determine if the LTS for those states include enforceable emission limitations that correspond to the 2018 emissions projections for each facility. A review of the 2018 facility-specific emissions inventory is also necessary to determine whether all visibility-impairing sources were modeled and whether the emissions modeled for all sources were reasonable

given the emission reduction requirements on the books and forthcoming by 2018. EPA should not approve the Arkansas RH SIP because it does not include the technical basis that Arkansas is relying on to show that it will achieve reasonable progress towards reaching natural background visibility conditions at its Class I areas. Also, EPA should not be proposing to find the 2018 emissions inventory "acceptable," when it does not have the facility-specific emission projections for 2018.

*Response:* The full reference to 40 CFR 51.308(d)(3)(iii) is the following:

"The State must document the technical basis, including modeling, monitoring and emissions information, on which the State is relying to determine its apportionment of emission reduction obligations necessary for achieving reasonable progress in each mandatory Class I Federal area it affects. The State may meet this requirement by relying on technical analyses developed by the regional planning organization and approved by all State participants. The State must identify the baseline emissions inventory on which its strategies are based. The baseline emissions inventory year is presumed to be the most recent year of the consolidated periodic emissions inventory."

A full reading of 40 CFR 51.308(d)(3)(iii) demonstrates that the requirement for the State to document the technical basis on which it is relying to determine its apportionment of emission reduction obligations necessary for achieving reasonable progress in each mandatory Class I Federal area it affects is to ensure that potentially affected states have all the technical information they need to be able to determine whether they agree with the State's apportionment of emission reduction obligations. As pointed out in the comment, Arkansas elected to meet the requirement under 40 CFR 51.308(d)(3)(iii) to document the technical basis for its RH SIP by relying on technical analyses developed by the CENRAP and approved by all State participants. Through the CENRAP process, all affected states agreed with Arkansas's apportionment of emission reduction obligations and these were included in the CENRAP 2018 emissions inventory modeling on which all the CENRAP member states are relying on to develop their RPGs and LTS. Since the technical analyses developed by the RPOs are often very extensive, it would be unreasonable to expect states to include all these documents as part of their RH SIPs. Since Arkansas relied on technical analyses developed by the CENRAP and approved by all State participants and properly identified the baseline

emissions inventory on which its strategies are based, the State satisfied the requirements under 40 CFR 51.308(d)(3)(iii). This is supported by 2018 CENRAP modeling data results indicating that two Class I areas outside of Arkansas (Missouri Class I areas—Mingo Wilderness Area and Hercules Glades Wilderness Area), where Arkansas sources have a significant impact, are projected to achieve the RPGs in 2018.

During the comment period, we provided the commenter with most of the information requested (including all the emission summary spreadsheet files we had), with the exception of two emission inventory summary files. Unfortunately, the document of facility-specific emission projections for 2018 referenced in the comment consists of two SMOKE electronic emissions processing reports that can be viewed in a very large electronic database using database software. However, these reports are too large to export to a spreadsheet, as had been done to generate other reports within the database, because it includes the daily point emissions by facility projected in 2018 for all the facilities in the CENRAP states. We had most of the SMOKE emission reports, which we did provide to the commenter's contractor. We did not consider these few missing emission reports to be critical or necessary to our review because we realized for reasons outside of the data contained in the missing reports that we would have to propose partial disapproval of the Arkansas RH SIP (including LTS and BART determinations). It is not practical to require that the State submit or include every possible electronic file that supports the RPO modeling as this is several Terabytes of data and most of the data has been submitted or is posted on Web sites or ftp sites or available on request. We believe this is the only practical way to address the large volumes of data necessary for the development of multistate regional haze modeling analysis. Unfortunately, as noted in the comment, the CENRAP Web site is no longer being maintained and no emission inventory documents are available on that site. In general, the former CENRAP members have been very supportive in providing information when requested. It was only due to specific issues that we were not able to provide the information for these two SMOKE emission reports when requested. We will continue to work to address this issue as we work with Arkansas on development of an approvable Regional Haze SIP. Again we do not believe that these particular files

were critical or necessary to our conclusion that the Arkansas SIP should be partially approved and partially disapproved.

#### *I. Comments Requesting an Extension to the Public Comment Period*

We received several comments requesting that the comment period be extended by an additional 60 days.

*Response:* Originally the comment period for our proposal was scheduled to close on November 16, 2011. In response to requests we extended the public comment period to December 22, 2011. In doing so, we took into consideration how an extension might affect our ability to consider comments received on the proposed action and still comply with the terms of a consent decree we have with Sierra Club.<sup>230</sup>

#### **IV. Statutory and Executive Order Reviews**

Under the Clean Air Act, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to act on state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law.

##### *A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review*

This action is not a "significant regulatory action" under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011).

##### *B. Paperwork Reduction Act*

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, because this SIP action under section 110 of the CAA will not in-and-of itself create any new information collection burdens but simply approves or disapproves certain State requirements for inclusion into the SIP. Burden is defined at 5 CFR 1320.3(b).

##### *C. Regulatory Flexibility Act*

The Regulatory Flexibility Act (RFA) generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment

rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions. For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's rule on small entities, I certify that this action will not have a significant impact on a substantial number of small entities. This rule does not impose any requirements or create impacts on small entities. This SIP action under section 110 of the CAA will not in-and-of itself create any new requirements but simply approves or disapproves certain State requirements for inclusion into the SIP. Accordingly, it affords no opportunity for EPA to fashion for small entities less burdensome compliance or reporting requirements or timetables or exemptions from all or part of the rule. The fact that the CAA prescribes that various consequences (*e.i.* emission limitations) may or will flow from this action does not mean that EPA either can or must conduct a regulatory flexibility analysis for this action. Therefore, this action will not have a significant economic impact on a substantial number of small entities.

##### *D. Unfunded Mandates Reform Act*

This action contains no Federal mandates under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531–1538 for State, local, or tribal governments or the private sector. EPA has determined that the disapproval action does not include a Federal mandate that may result in estimated costs of \$100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector. This action merely approves or disapproves pre-existing requirements under State or local law, and imposes no new requirements. Accordingly, no additional costs to State, local, or tribal governments, or to the private sector, result from this action.

<sup>230</sup> *Sierra Club v. Lisa Jackson*, Case No. 1:10-CV-02112-JEB.

### E. Executive Order 13132, Federalism

Executive Order 13132, entitled “Federalism” (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure “meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.” “Policies that have federalism implications” is defined in the Executive Order to include regulations that have “substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.”

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132, because it merely approves or disapproves certain State requirements for inclusion into the SIP and does not alter the relationship or the distribution of power and responsibilities established in the CAA. Thus, Executive Order 13132 does not apply to this action.

### F. Executive Order 13175, Coordination With Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000), because the SIP submittals EPA is approving or disapproving would not apply in Indian country located in the state, and EPA notes that it will not impose substantial direct costs on tribal governments or preempt tribal law. Thus, Executive Order 13175 does not apply to this action.

### G. Executive Order 13045, Protection of Children From Environmental Health Risks and Safety Risks

EPA interprets Executive Order 13045 (62 FR 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the Executive Order has the potential to influence the regulation. This action is not subject to Executive Order 13045 because it is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997). This SIP action under section 110 of the CAA will not in-and-of itself create any new regulations but simply approves or disapproves certain

State requirements for inclusion into the SIP.

### H. Executive Order 13211, Actions That Significantly Affect Energy Supply, Distribution or Use

This action is not subject to Executive Order 13211 (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

### I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”), Public Law 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

The EPA believes that this action is not subject to requirements of section 12(d) of NTTAA because application of those requirements would be inconsistent with the CAA.

### J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629 (Feb. 16, 1994)) establishes Federal executive policy on environmental justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA lacks the discretionary authority to address environmental justice in this action. In reviewing SIP submissions, EPA’s role is to approve or disapprove state choices, based on the criteria of the CAA. Accordingly, this action merely approves or disapproves certain State requirements for inclusion into the SIP under section 110 of the CAA and will not in-and-of itself create any new requirements. Accordingly, it does not provide EPA with the discretionary

authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898.

### K. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a “major rule” as defined by 5 U.S.C. 804(2). This rule will be effective on April 11, 2012.

### L. Judicial Review

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by May 11, 2012. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. See CAA section 307(b)(2).

### List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur dioxides, Visibility, Interstate transport of pollution, Regional haze, Best available retrofit technology.

Dated: February 13, 2012.

**Al Armendariz**,  
Regional Administrator, Region 6.

40 CFR part 52 is amended as follows:

### PART 52—[AMENDED]

■ 1. The authority citation for part 52 continues to read as follows:

**Authority:** 42 U.S.C. 7401 *et seq.*

**Subpart E—[Amended]**

■ 2. Section 52.170 is amended:  
 ■ a. In paragraph (c), under the first table entitled “EPA-Approved Regulations in the Arkansas SIP,” by revising the heading for Chapter 15 under Regulation No. 19 to read “Regional Haze”; by revising the entry for Reg. 19.1501; and by adding new

entries in numerical order for Reg. 19.1502, Reg. 19.1503, Reg. 19.1504, Reg. 19.1505, Reg. 19.1506, and Reg. 19.1507.

■ b. In paragraph (e), under the third table entitled “EPA-Approved Non-Regulatory Provisions and Quasi-Regulatory Measures in the Arkansas SIP”, by adding at the end of the table

a new entry for “Interstate Transport for the 1997 ozone and PM<sub>2.5</sub> NAAQS” immediately followed by a new entry for “Regional Haze SIP”.

The amendments read as follows:

**§ 52.170 Identification of plan.**

\* \* \* \* \*  
 (c) \* \* \*

**EPA-APPROVED REGULATIONS IN THE ARKANSAS SIP**

State citation	Title/subject	State approval/ effective date	EPA approval date	Explanation
<b>Regulation No. 19: Regulations of the Arkansas Plan of Implementation for Air Pollution Control</b>				
* * * * *				
Chapter 15: Regional Haze				
Reg. 19.1501 .....	Purpose .....	1/25/2009	3/12/2012 [Insert <i>FR</i> page number where document begins].	
Reg. 19.1502 .....	Definitions .....	1/25/2009	3/12/2012 [Insert <i>FR</i> page number where document begins].	
Reg. 19.1503 .....	BART Eligible Sources.	1/25/2009	3/12/2012 [Insert <i>FR</i> page number where document begins].	
Reg. 19.1504 .....	Facilities Subject-to-BART.	1/25/2009	3/12/2012 [Insert <i>FR</i> page number where document begins].	Under (A): The identification of sources subject to BART is approved, except for not identifying the 6A and 9A Boilers at the Georgia Pacific Crossett Mill, which we find are subject to BART. Under (B): The requirement for BART installation and operation as expeditiously as practicable, but no later than 5 years after EPA approval is partially approved and partially disapproved, such that the partial approval is for the BART determinations we are approving and the partial disapproval is for the BART determinations we are disapproving; and the requirement for BART installation and operation no later than 6 years after the effective date of the State regulation is disapproved.
Reg. 19.1505 .....	BART Requirements ..	1/25/2009	3/12/2012 [Insert <i>FR</i> page number where document begins].	The following portions of Reg. 19.1505 are disapproved: (A)(1) and (2), (B), (C), (D)(1) and (2), (E), (F)(1) and (2), (G)(1) and (2), (H), (I)(1) and (2), (J)(1) and (2), (K), (L), (M)(1), and (N).
Reg. 19.1506 .....	Compliance Provisions.	1/25/2009	3/12/2012 [Insert <i>FR</i> page number where document begins].	The requirement to demonstrate compliance with the BART limits listed in Reg. 19.1505 (A)(1) and (2), (B), (C), (D)(1) and (2), (E), (F)(1) and (2), (G)(1) and (2), (H), (I)(1) and (2), (J)(1) and (2), (K), (L), (M)(1), and (N) is disapproved.
Reg. 19.1507 .....	Permit Reopening .....	1/25/2009	3/12/2012 [Insert <i>FR</i> page number where document begins].	
* * * * *				

\* \* \* \* \*  
 (e) \* \* \*  
 \* \* \* \* \*



EPA-APPROVED NON-REGULATORY PROVISIONS AND QUASI-REGULATORY MEASURES IN THE ARKANSAS SIP

Name of SIP provision	Applicable geographic or nonattainment area	State submittal/ effective date	EPA approval date	Explanation
Interstate Transport for the 1997 ozone and PM <sub>2.5</sub> NAAQS (Non-interference with measures required to protect visibility in any other State).	Statewide .....	3/28/2008	3/12/2012 [Insert FR page number where document begins].	Noninterference with measures required to protect visibility in any other State partially approved 3/12/12.
Regional Haze SIP .....	Statewide .....	9/23/2008, 8/3/2010	3/12/2012 [Insert FR page number where document begins].	The following portions are partially approved and partially disapproved: (a) Identification of best available retrofit technology (BART) eligible sources and subject to BART sources; (b) requirements for best available retrofit technology (BART); (c) the Arkansas Regional Haze Rule; and (d) Long Term Strategy. (See § 52.173(a)).
(a) Identification of affected Class I areas.				
(b) Determination of baseline and natural visibility conditions.				
(c) Determination of the Uniform Rate of Progress.				
(d) Reasonable progress goal consultation and long term strategy consultation.				
(e) Coordination regional haze and reasonably attributable visibility impairment.				
(f) Monitoring Strategy and other implementation requirements.				
(g) Commitment to submit periodic Regional Haze SIP revisions and periodic progress reports describing progress towards the reasonable progress goals.				
(h) Commitment to make a determination of the adequacy of the existing SIP at the time a progress report is submitted.				
(i) Coordination with States and Federal Land Managers.				
(j) The following best available retrofit technology (BART) determinations: PM BART determination for the AEP Flint Creek Plant Boiler No. 1; SO <sub>2</sub> and PM BART determinations for the natural gas firing scenario for the Entergy Lake Catherine Plant Unit 4; PM BART determinations for both the bituminous and sub-bituminous coal firing scenarios for the Entergy White Bluff Plant Units 1 and 2; and PM BART determination for the Domtar Ashdown Mill Power Boiler No. 1.				

■ 3. Section 52.173 is added to read as follows:

**§ 52.173 Visibility protection.**

(a) *Regional haze.* The regional haze State Implementation Plan (SIP) revisions submitted on September 23, 2008 and August 3, 2010, and supplemented on September 27, 2011

are partially approved and partially disapproved.

(1) The identification of sources that are eligible for Best Available Retrofit Technology (BART) is approved, with the exception of the 6A Boiler at the Georgia-Pacific Crossett Mill, which is BART eligible.

(2) The identification of sources subject to BART is approved, with the exception of the 6A and 9A Boilers at the Georgia-Pacific Crossett Mill, which are both subject to BART.

(3) The following BART determinations are disapproved:

(i) The sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>x</sub>), and particulate matter

(PM) BART determinations for the Arkansas Electric Cooperative Corporation Bailey Plant Unit 1 and the AECC McClellan Plant Unit 1;

(ii) The SO<sub>2</sub> and NO<sub>x</sub> BART determinations for the American Electric Power Flint Creek Plant Boiler No. 1;

(iii) The NO<sub>x</sub> BART determination for the natural gas firing scenario and the SO<sub>2</sub>, NO<sub>x</sub>, and PM BART determinations for the fuel oil firing scenario for the Entergy Lake Catherine Plant Unit 4;

(iv) The SO<sub>2</sub> and NO<sub>x</sub> BART determinations for both the bituminous and sub-bituminous coal firing scenarios for the Entergy White Bluff Plant Units 1 and 2;

(v) The BART determination for the Entergy White Bluff Plant Auxiliary Boiler;

(vi) The SO<sub>2</sub> and NO<sub>x</sub> BART determinations for the Domtar Ashdown Mill Power Boiler No. 1; and

(vii) The SO<sub>2</sub>, NO<sub>x</sub> and PM BART determinations for the Domtar Ashdown Mill Power Boiler No. 2.

(4) The Arkansas Regional Haze Rule, (APCEC Regulation 19, Chapter 15), is partially approved and partially disapproved such that:

(i) The requirement under Reg. 19.104(B) for BART installation and operation as expeditiously as practicable, but no later than 5 years after EPA approval of the Arkansas Regional Haze State Implementation Plan is partially approved and partially

disapproved, such that the partial approval is for the BART determinations we are approving and the partial disapproval is for the BART determinations we are disapproving;

(ii) The requirement under Reg. 19.1504(B) for BART installation and operation no later than 6 years after the effective date of the State regulation is disapproved;

(iii) Reg. 19.1505 (A)(1) and (2), (B), (C), (D)(1) and (2), (E), (F)(1) and (2), (G)(1) and (2), (H), (I)(1) and (2), (J)(1) and (2), (K), (L), (M)(1), and (N) are disapproved;

(iv) the Reg. 19.1506 requirement to demonstrate compliance with the BART limits listed in Reg. 19.1505 (A)(1) and (2), (B), (C), (D)(1) and (2), (E), (F)(1) and (2), (G)(1) and (2), (H), (I)(1) and (2), (J)(1) and (2), (K), (L), (M)(1), and (N) is disapproved; and

(v) The remaining portions are approved.

(5) The regional haze long term strategy under 40 CFR 51.308(d)(3) is partially approved and partially disapproved.

(6) The reasonable progress goals are disapproved.

(b) *Interstate Transport*. The portion of the SIP pertaining to adequate provisions to prohibit emissions from interfering with measures required in another state to protect visibility, submitted on March 28, 2008, and supplemented on September 27, 2011, is partially approved and partially disapproved.

(1) The Arkansas Regional Haze Rule, (APCEC Regulation 19, Chapter 15), is partially approved and partially disapproved such that:

(i) The requirement under Reg. 19.104(B) for BART installation and operation as expeditiously as practicable, but no later than 5 years after EPA approval of the Arkansas Regional Haze State Implementation Plan is partially approved and partially disapproved, such that the partial approval is for the BART determinations we are approving and the partial disapproval is for the BART determinations we are disapproving;

(ii) The requirement under Reg. 19.1504(B) for BART installation and operation no later than 6 years after the effective date of the State regulation is disapproved;

(iii) Reg. 19.1505 (A)(1) and (2), (B), (C), (D)(1) and (2), (E), (F)(1) and (2), (G)(1) and (2), (H), (I)(1) and (2), (J)(1) and (2), (K), (L), (M)(1), and (N) are disapproved;

(iv) The Reg. 19.1506 requirement to demonstrate compliance with the BART limits listed in Reg. 19.1505 (A)(1) and (2), (B), (C), (D)(1) and (2), (E), (F)(1) and (2), (G)(1) and (2), (H), (I)(1) and (2), (J)(1) and (2), (K), (L), (M)(1), and (N) is disapproved; and

(v) The remaining portions are approved.

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