6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R06-OAR-2016-0520; EPA-R06-OAR-2017-0129;

FRL-9971-85-Region 6]

Approval and Promulgation of Implementation Plans; Louisiana; Regional Haze State Implementation Plan

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Pursuant to the Federal Clean Air Act (CAA or the Act), the Environmental Protection Agency (EPA) is finalizing an approval of revisions to the Louisiana State Implementation Plan (SIP) submitted by the State of Louisiana through the Louisiana Department of Environmental Quality (LDEQ) that address regional haze for the first planning period. LDEQ submitted these revisions to address the requirements of the Clean Air Act (CAA) and the EPA's rules that require states to prevent any future and remedy any existing anthropogenic impairment of visibility in mandatory Class I areas (national parks and wilderness areas) caused by emissions of air pollutants from numerous sources located over a wide geographic area (also referred to as the "regional haze program"). To address the Best Available Retrofit Technology (BART) requirement for sulfur dioxide (SO_2), oxides of nitrogen (NO_X) and particulate matter (PM), the EPA is finalizing approval of source-by-source BART determinations for certain electric generating and non-electric generating units. To address the BART requirement for NO_X for electric generating units, we are finalizing our proposed determination that Louisiana's participation in the Cross-State Air Pollution Rule's (CSAPR) trading program for ozone-season NO_X qualifies as an alternative to BART.

DATES: This rule is effective on **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].**

ADDRESSES: The EPA has established dockets for this action under Docket ID No. EPA-R06-

OAR-2016-0520 for non-electric generating units and Docket ID No. EPA-R06-OAR-2017-0129 for electric generating units (EGUs). All documents in the dockets are listed on the *http://www. regulations.gov* web site. Although listed in the index, some information is not publicly available, *e.g.,* Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *http://www. regulations.gov* or in hard copy at the EPA Region 6, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202-2733.

FOR FURTHER INFORMATION CONTACT: Jennifer Huser, 214-665-7347.

SUPPLEMENTARY INFORMATION: Throughout this document "we," "us," and "our" means the EPA.

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I. Background

A. The Regional Haze Program

Regional haze is visibility impairment that is produced by a multitude of sources and activities that are located across a broad geographic area and emit fine particulates ($PM_{2.5}$) (e. g., sulfates, nitrates, organic carbon (OC), elemental carbon (EC), and soil dust), and their precursors (e. g., sulfur dioxide (SO_2), nitrogen oxides (NO_X), and in some cases, ammonia (NH_3) and volatile organic compounds (VOCs)). Fine particle precursors react in the atmosphere to form $PM_{2.5}$, which impairs visibility by scattering and absorbing light. Visibility impairment reduces the clarity, color, and visible distance that can be seen. $PM_{2.5}$ can also cause serious adverse health effects and mortality in humans; it also contributes to environmental effects such as acid deposition and eutrophication.

Data from the existing visibility monitoring network, "Interagency Monitoring of Protected Visual Environments" (IMPROVE), shows that visibility impairment caused by air pollution occurs virtually all of the time at most national parks and wilderness areas. In 1999, the average visual range in many Class I areas (i.e., national parks and memorial parks, wilderness areas, and international parks meeting certain size criteria) in the western United States was 100-150 kilometers, or about one-half to two-thirds of the visual range that would exist without anthropogenic air pollution. In most of the eastern Class I areas of the United States, the average visual range was less than 30 kilometers, or about one-fifth of the visual range that would exist under estimated natural conditions. CAA programs have reduced some haze-causing pollution, lessening some visibility impairment and resulting in partially improved average visual ranges.

CAA requirements to address the problem of visibility impairment continue to be implemented. In Section 169A of the 1977 Amendments to the CAA, Congress created a program for

protecting visibility in the nation's national parks and wilderness areas. This section of the CAA establishes as a national goal the prevention of any future, and the remedying of any existing, man-made impairment of visibility in 156 national parks and wilderness areas designated as mandatory Class I Federal areas. On December 2, 1980, the EPA promulgated regulations to address visibility impairment in Class I areas that is "reasonably attributable" to a single source or small group of sources, i.e., "reasonably attributable visibility impairment." These regulations represented the first phase in addressing visibility impairment. The EPA deferred action on regional haze that emanates from a variety of sources until monitoring, modeling, and scientific knowledge about the relationships between pollutants and visibility impairment were improved.

Congress added section 169B to the CAA in 1990 to address regional haze issues, and the EPA promulgated regulations addressing regional haze in 1999. The Regional Haze Rule[1] revised the existing visibility regulations to add provisions addressing regional haze impairment and established a comprehensive visibility protection program for Class I areas. The requirements for regional haze are included in our visibility protection regulations at 40 CFR 51.300–309. The requirement to submit a regional haze SIP applies to all 50 states, the District of Columbia, and the Virgin Islands. States were required to submit the first implementation plan addressing regional haze visibility impairment no later than December 17, 2007.

Section 169A of the CAA directs states to evaluate the use of retrofit controls at certain larger, often under-controlled, older stationary sources in order to address visibility impacts from these sources. Specifically, section 169A(b)(2)(A) of the CAA requires states to revise their SIPs to contain such measures as may be necessary to make reasonable progress toward the natural visibility goal, including a requirement that certain categories of existing major stationary sources built between 1962 and 1977 procure, install and operate the "Best Available Retrofit Technology" (BART). Larger "fossil-fuel fired steam electric plants" are one of these source categories. Under the

[1] Here and elsewhere in this document, the term "Regional Haze Rule," refers to the 1999 final rule (64 FR 35714), as amended in 2005 (70 FR 39156, July 6, 2005), 2006 (71 FR 60631, October 13, 2006), 2012 (77 FR 33656, June 7, 2012), and January 10, 2017 (82 FR 3078).

Regional Haze Rule, states are directed to conduct BART determinations for "BART-eligible" sources that may be anticipated to cause or contribute to any visibility impairment in a Class I area. The evaluation of BART for electric generating units (EGUs) that are located at fossil-fuel fired power plants having a generating capacity in excess of 750 megawatts must follow the "Guidelines for BART Determinations Under the Regional Haze Rule" at appendix Y to 40 CFR Part 51 (hereinafter referred to as the "BART Guidelines"). Rather than requiring source-specific BART controls, states also have the flexibility to adopt an emissions trading program or other alternative program as long as the alternative provides for greater progress towards improving visibility than BART.

B. Our Previous Actions

On June 13, 2008, Louisiana submitted a SIP to address regional haze ("2008 Louisiana Regional Haze SIP" or "2008 SIP revision"). We acted on that submittal in two separate actions. Our first action was a limited disapproval[2] because of deficiencies in the state's regional haze SIP submittal arising from the remand by the U. S. Court of Appeals for the District of Columbia of the Clean Air Interstate Rule (CAIR). Our second action was a partial limited approval/partial disapproval[3] because the 2008 SIP revision met some but not all of the applicable requirements of the CAA and our regulations as set forth in sections 169A and 169B of the CAA and 40 CFR 51. 300-308, but as a whole, the 2008 SIP revision strengthened the existing SIP. In that action we disapproved Louisiana's long-term strategy, finding that it was deficient given our finding that certain of Louisiana's BART determinations were not fully approvable.[4] We found that Louisiana followed the requirements with regards to reasonable progress goals, but that the goals did not reflect appropriate emissions reductions for BART. We found that the long term strategy satisfied most requirements of 40 CFR 51.308(d)(3), but was deficient since it relied on BART determinations which we disapproved.

[2] 77 FR 33642 (June 7, 2012).
[3] 77 FR 39425 (July 3, 2012).
[4] 77 FR 39426 (July 3, 2012).

On August 11, 2016, Louisiana submitted a SIP revision to address the deficiencies related to BART for four non-EGU facilities: Sid Richardson, Phillips 66 Company – Alliance Refinery, Mosaic, and EcoServices, LLC. Based on the BART analysis and modeling provided by Sid Richardson, LDEQ concluded that the facility is not subject to BART because its model visibility impact was less than 0.5 deciviews (dv). We proposed to approve this determination. We also proposed approval of LDEQ's determination that the current controls installed and operating conditions at the Phillips 66 Company - Alliance Refinery subject to BART units constitute BART. The emission limits which reflect current controls and operating conditions at the facility for all subject to BART units are included in Administrative Order on Consent (AOC) No. AE-AOC-14-00211A between LDEQ and Phillips 66 in accordance with 40 CFR 51.308(e), and were provided in the August 11, 2016 SIP revision. We further proposed approval of LDEQ's determination that the current controls and operating conditions at the Mosaic facility constitute BART. The emission limits for Mosaic under current controls and operating conditions are included in AOC No. AE-AOC-14-00274A which was included in the August 11, 2016 SIP revision. Finally, we proposed approval of LDEQ's determination that the current controls and operating conditions at the EcoServices LLC facility constitute BART. The emission limits for EcoServices are included in AOC No. AE-AOC-14-00957 between LDEQ and EcoServices. We proposed to approve that August 11, 2016 revision in its entirety on October 27, 2016.[5] We received no comments on our October 27, 2016 proposal and we are finalizing that approval here.

On February 10, 2017, Louisiana submitted a SIP revision intended to address the deficiencies related to BART for EGU sources. On May 19, 2017, we proposed to approve that revision, with the exception of the portion related to Entergy's Nelson facility. We proposed to approve the LDEQ determination that the BART-eligible units at the following facilities do not cause or contribute to visibility impairment and are not subject to BART: Terrebonne Parish Consolidated Government Houma Generating Station (Houma), Louisiana Energy and Power Authority

[5] 81 FR 74750 (October 27, 2016).

Plaquemine Steam Plant (Plaquemine), Lafayette Utilities System Louis "Doc" Bonin Generating Station, Cleco Teche, Entergy Sterlington, NRG Big Cajun I, and NRG Big Cajun II. We also proposed to approve the LDEQ BART determinations for subject to BART units at the following facilities: Cleco's Brame Energy Center, and Entergy's Willow Glen, Little Gypsy, Ninemile Point, Waterford and Michoud facilities. We proposed to approve the AOCs for Brame, Willow Glen, Little Gypsy, and Ninemile Point. We are now finalizing our approval that BART has been addressed for these units.

We note that Entergy applied for a permit for Michoud, which included the decommissioning of the subject to BART Units 2 and 3, and the construction of new units. We proposed to approve the BART determination for Units 2 and 3 based on the draft permit indicating the units would no longer be operational. We expected the permit would be finalized before we took final action but it has not yet been finalized. We addressed this possibility by also proposing that LDEQ could submit another enforceable document to ensure that Units 2 and 3 cannot restart without a BART determination and emission limits, or otherwise demonstrate that the units have been decommissioned to the point that they cannot restart without obtaining a new NSR permit. LDEQ provided additional information from Entergy indicating that the units are in the process of being decommissioned, and are non-operational, as reflected in an e-mail dated October 9, 2017, submitted by LDEQ to supplement its February 2017 SIP revision. We received no comments on our proposed approach for the Michoud BART units. As a result, we approving the SIP's finding that BART is addressed because the units are no longer in operation and are in the process of being decommissioned.

On June 20, 2017, LDEQ submitted a SIP revision for parallel processing related to Entergy's Nelson facility. On July 13, 2017, we proposed to approve this SIP revision along with the remaining portion of the February 2017 SIP revision that addressed BART for the Nelson facility. Specifically, we proposed to approve the LDEQ BART determinations for Nelson Units 6 and 4, and the Unit 4 auxiliary boiler, and the AOC that makes the emission limits that represent BART permanent and enforceable for the purposes of regional haze. We also solicited comment with respect to any

information that would support or refute the costs in Entergy's evaluation of SO_2 controls for Unit 6. On June 21, 2017, Entergy submitted a comment to LDEQ on its proposed SIP revision requesting a three-year compliance deadline to achieve the proposed SO_2 BART limit for Nelson Unit 6. Entergy's letter explained that the company has coal contracts in place for the next three years, so the revised compliance date would provide the company sufficient time to transition to new mines with lower sulfur coal. Additionally, Entergy stated that it did not have the necessary equipment to blend varying fuel supplies. On August 24, 2017, we received a letter from LDEQ explaining their intent to revise the compliance date in the SIP revision for Nelson Unit 6 based on Entergy's comment letter. On September 26, 2017, we supplemented our proposed approval of the SO_2 BART determination for Nelson by proposing to approve the three-year compliance date. On October 26, 2017, we received LDEQ's final SIP revision addressing Nelson, including a final AOC with emission limits and a SO_2 compliance date three years from the effective date of the EPA's final approval of the SIP revision.

C. CSAPR as an Alternative to Source-Specific NO_X BART

In 2005, the EPA promulgated CAIR, which required 28 states and the District of Columbia to reduce emissions of SO_2 and NO_X that significantly contribute to non-attainment or interfere with maintenance of the 1997 national ambient air quality standards (NAAQS) for fine particulates and/or 8-hour ozone in any downwind state. [6] EPA demonstrated that CAIR would achieve greater reasonable progress toward the national visibility goal than would BART and determined that states participating in CAIR could rely on CAIR as an alternative to EGU BART for SO_2 and NO_X.[7]

Louisiana's 2008 Regional Haze SIP relied on participation in CAIR as an alternative to meeting the source-specific EGU BART requirements for SO_2 and NO_X.[8] Shortly after Louisiana submitted its SIP to us, however, the D. C. Circuit remanded CAIR (without vacatur).[9] The court

[6] 70 FR 25161 (May 12, 2005).
[7] 70 FR 39104, 39139 (July 6, 2005).
[8] *See* 40 CFR 51.308(e)(4) (2006).
[9] The court decided to vacate CAIR on July 11, 2008, and revised its decision, so as to remand the rule without vacatur, on December 23, 2008. *North Carolina* v. *EPA,* 531 F. 3d 896, 901 (D. C. Cir. 2008), *modified,* 550 F. 3d 1176 (D. C. Cir. 2008). Louisiana's initial Regional Haze SIP was submitted on June 13, 2008. 77 FR 39425.

thereby left CAIR and CAIR Federal Implementation Plans (FIPs) in place in order to "temporarily preserve the environmental values covered by CAIR" until we could, by rulemaking, replace CAIR consistent with the court's opinion.[10] In 2011, we promulgated the Cross-State Air Pollution Rule (CSAPR) to replace CAIR.[11] While EGUs in Louisiana were required to participate in CAIR for both SO_2 and NO_X, Louisiana EGUs are only included in CSAPR for ozone-season NO_X.[12]

In 2012, we issued a limited disapproval of Louisiana's and several other states' regional haze SIPs because of reliance on CAIR as an alternative to EGU BART for SO_2 and/or NO_X.[13] We also determined that CSAPR would provide for greater reasonable progress than BART and amended the Regional Haze Rule to allow CSAPR participation as an alternative to source-specific SO_2 and/or NO_X BART for EGUs, on a pollutant-specific basis.[14] Because Louisiana EGUs are included in CSAPR for NO_X, Louisiana can rely on CSAPR to satisfy the EGU BART requirement for NO_X.

CSAPR has been subject to extensive litigation, and on July 28, 2015, the D. C. Circuit issued a decision generally upholding CSAPR but remanding without vacating the CSAPR emissions budgets for a number of states.[15] On October 26, 2016, we finalized an update to CSAPR that addresses the 1997 ozone NAAQS portion of the remand as well as the CAA requirements addressing interstate transport for the 2008 ozone NAAQS.[16] Additionally, three states, Alabama, Georgia, and South Carolina, have adopted or committed to adopt SIPs to replace the remanded FIPs and will continue their participation in the CSAPR program on a voluntary basis with the same budgets. On November 10, 2016, we proposed a rule intended to address the remainder of the court's remand as it relates to Texas.[17] This separate proposed rule included an assessment of the impacts of

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[10] 550 F. 3d at 1178.
[11] 76 FR 48207 (August 8, 2011).
[12] 76 FR 82219, at 82226 (December 30, 2011).
[13] The limited disapproval triggered the EPA's obligation to issue a FIP or approve a SIP revision to correct the relevant deficiencies within 2 years of the final limited disapproval action. CAA section 110(c)(1); 77 FR 33642, at 33654 (August 6, 2012).
[14] While that rulemaking also promulgated FIPs for several states to replace reliance on CAIR with reliance on CSAPR as an alternative to BART, it did not include a FIP for Louisiana. 77 FR 33642, 33654.
[15] Louisiana's ozone season NO_X budgets were not included in the remand. *EME Homer City Generation* v. *EPA,* 795 F. 3d 118, 138 (D. C. Cir. 2015).
[16] 81 FR74504 (October 26, 2016).
[17] 81 FR 78954 (November 10, 2016).

the set of actions that the EPA had taken or expected to take in response to the D. C. Circuit's remand on our 2012 demonstration that participation in CSAPR provides for greater reasonable progress than BART. Based on that assessment, the EPA proposed that states may continue to rely on CSAPR as an alternative to BART on a pollutant-specific basis. On September 29, 2017, we finalized our proposed finding that the EPA's 2012 analytical demonstration remains valid and that participation in CSAPR, as it now exists, meets the Regional Haze Rule's criteria for an alternative to BART.[18] LDEQ's February 2017 SIP revision relies on CSAPR as an alternative to BART for control of NO_X from EGUs.

II. Summary of Final Action

This action finalizes our proposed approval of the BART determinations for non-EGU facilities,[19] our proposed approval of the BART determinations for EGU facilities,[20] our proposed approval of the BART determination for Nelson Unit 6,[21] our proposed approval of the reliance on CSAPR by EGUs for NO_X BART requirements, and our proposed approval that the BART eligible sources[22] at the following facilities do not cause or contribute to visibility impairment and are not subject to BART: Terrebonne Parish Consolidated Government Houma Generating Station (Houma), Louisiana Energy and Power Authority Plaquemine Steam Plant (Plaquemine), Lafayette Utilities System Louis "Doc" Bonin Generating Station, Cleco Teche, Entergy Sterlington, NRG Big Cajun I, and NRG Big Cajun II. With the exception of the change in compliance date for Nelson Unit 6, we note that we are finalizing the proposed rules referenced above as proposed. [23] A brief summary of the SIP submittal provisions being finalized is included below.

We are finalizing our approval of the Louisiana Regional Haze SIP as we have found it to meet the applicable provisions of the Act and EPA regulations and it is consistent with EPA

[18] 82 FR 45481 (September 29, 2017).
[19] 81 FR 74750 (August 16, 2016).
[20] 82 FR 22936 (May 19, 2017).
[21] 82 FR 32294 (July 13, 2017).
[22] The BART-eligible source is the collection of BART-eligible units at a stationary source. 40 CFR Appendix Y, II. A. 4
[23] On September 26, 2017, we published a proposed rule amending our July 13, 2017 proposal. This amended proposed rule proposed a new compliance date of three years from the date the rule becomes final. See, 82 FR 32294 (July 13, 2017) and 82 FR 44753 (September 26, 2017).

guidance. We find that the core requirements for regional haze SIPs found in 40 CFR 51.308(d) such as: the requirement to establish reasonable progress goals, the requirement to determine the baseline and natural visibility conditions, and the requirement to submit a long-term strategy; the BART requirements for regional haze visibility impairment with respect to emissions of visibility impairing pollutants from non-EGUs and EGUs in 40 CFR 51.308(e); and the requirement for coordination with state and Federal Land Managers in 51.308(i) are met. This final action includes, among other things, the approval of the following: the determination that the emission limits reflected in the AOC between LDEQ and Phillips 66 meet the BART requirements, the determination that the sources listed in Tables 1, 2, and 3 below are not subject to BART, the determination that the sources listed in Table 4 below are subject to BART, the determination that the emission limits and operating conditions reflected in the AOC for Mosaic Fertilizer, LLC meet the BART requirements, the determination that the emission limits and operating conditions reflected in the AOC for EcoServices, LLC meet the BART requirements, the determination that emission limits and operating conditions listed in the AOC for Louisiana Generating, LLC meet the applicable BART requirements for Big Cajun II, the determination that the emission limits and operating conditions listed in the AOC for Cleco meet BART requirements for Cleco Brame Energy Center, and the determination that the emission limits and operating conditions in the AOCs for Entergy meet the applicable BART requirements for Waterford, Willow Glen, Ninemile, Little Gypsy, and Nelson. This final rule renders the limits and conditions included in the AOCs mentioned above federally enforceable. We are also finalizing approval of the three-year compliance date for Nelson Unit 6 in this final rule. [24]

Additionally, this final action fully approves the 2008, 2016, and the two 2017 SIP revisions as supplemented with respect to 51. 308(e), and addresses all deficiencies identified in our previous partial disapproval and partial limited approval of the 2008 SIP submission.[25]

Table 1. Retired Sources

[24] *Id.*
[25] 77 FR 39425 (July 3, 2012).

Facility Name	Units	Parish
Louisiana Energy and Power Authority Morgan City Steam Plant	Units 1, 2, 3, and 4 boilers	St. Mary/St. Martin
City of Ruston Ruston Electric Generating Plant	Boilers 1, 2, and 3	Lincoln
City of Natchitoches Utility Department	3 boilers	Natchitoches

Table 2. BART-Eligible Sources Screened Out Using Model Plant Analysis

Facility Name	Units	Parish
Louisiana Energy and Power Authority Plaquemine Steam Plant	Boilers 1 and 2	Iberville
Lafayette Utilities System Louis "Doc" Bonin Electric Generating Station	Units 1, 2, and 3	Lafayette
Terrebonne Parish Consolidated Government Houma Generating Station	Units 15 and 16	Terrebonne

Table 3. BART-Eligible Sources Screened Out with Visibility Impact of Less Than 0. 5 dv

Facility Name	Units	Parish
Cleco Teche	Unit 3	St. Mary
Entergy Sterlington	Unit 7	Ouachita
Louisiana Generating (NRG) Big Cajun I	Units 1 and 2	Point Coupee
Louisiana Generating (NRG) Big Cajun II	Units 1 and 2	Pointe Coupee

Table 4. Subject to BART EGU Sources

Facility Name	Units	BART Determination[1]		Parish
		SO_2	PM	
Cleco Brame Entergy Center	Nesbitt I (Unit 1)	3. 0 lb/hr	37. 3 lb/hr	Rapides
	Rodemacher II (Unit 2)	0. 30 lb/MMBtu	545 lb/hr	
Entergy Waterford	Units 1, 2, and	Fuel oil with a sulfur content of 1% or less	Fuel oil with a sulfur content of 1% or less	St. Charles
	auxiliary boiler	No additional control	No additional control	
Entergy Willow Glen	Units 2, 3, 4, 5, and auxiliary boiler	No additional controls when burning natural gas. [2]	No additional controls when burning natural gas. [2]	Iberville

Entergy Ninemile Point	Units 4 and 5	Fuel oil with a sulfur content of 0. 0015%	Fuel oil with a sulfur content of 0. 0015%	Jefferson
Entergy Little Gypsy	Units 2, 3, and	Fuel oil with a sulfur content of 0.0015%	Fuel oil with a sulfur content of 0. 0015%	St. Charles
	auxiliary boiler	No additional control	No additional control	
Entergy Nelson	Unit 4 and auxiliary boiler	No additional controls when burning natural gas. [2]	No additional controls when burning natural gas. [2]	Calcasieu
	Unit 6	0.6 lb/MMBtu	317.61 lb/hr	

[1] Numeric BART limits are on a 30-day rolling basis.

[2] Before fuel oil firing is allowed to take place at the Willow Glen BART units, Nelson Unit 4 or the auxiliary boiler, a revised BART determination for that unit must be promulgated for SO_2 and PM for the fuel oil firing scenario through a FIP or an action by the LDEQ as a SIP revision and approved by the EPA such that the action will become federally enforceable.

We received comments from several commenters on our proposed approval of the BART determinations for EGU facilities,[26] our proposed approval of the BART determination for Nelson Unit 6,[27] and our proposed approval of LDEQ's revised SIP, which changed the effective date of the emission limits for Nelson Unit 6. [28] We did not receive comments on our proposed approval of the BART determinations for the four subject to BART non-EGU facilities. [29] Our response to the substantive comments are summarized in Section III. We note that we received a comment letter from Cleco Brame Energy Center on August 2, 2017. This comment letter was received outside of the applicable comment period. [30] Additionally, the comments contained in the letter did not raise any issues with our proposal. They were submitted in response to issues raised by another commenter in a separate comment letter. [31]

We are approving the 2008, 2016, February 2017, and the October 2017 LA RH SIPs (as

[26] 82 FR 22936 (May 19, 2017).

[27] 82 FR 32294 (July 13, 2017).

[28] 82 FR 44753 (September 26, 2017).

[29] 81 FR 74750 (October 27, 2016).

[30] The comment period closed on June 19, 2017.

[31] See August 2, 2017 letter from William Matthews (Cleco Corporation) to Jennifer Huser (EPA), Document ID EPA-R06-OAR-2017-0129-003. Cleco submitted its comment letter on August 2, 2017 in response to a comment letter previously submitted by Earthjustice, National Parks Conservation Association, and Sierra Club (the Conservation Organizations) on June 19, 2017. In its letter, Cleco addressed the concerns raised by the Conservation Organizations in their letter.

supplemented by the October 9, 2017 e-mail[32]) submitted by Louisiana as we have determined that they meet all of the regional haze SIP requirements, including the BART requirements in §51. 308(e). We have fully considered all significant comments on our proposed actions on the four RH SIP revision submittals as supplemented by the October 9, 2017 e-mail, and have concluded that no changes are warranted.

III. Response to Comments

We received written comments by the internet and the mail. The full text of comments received from these commenters is included in the publicly posted docket associated with this action at *www. regulations. gov.* We reviewed all public comments that we received on the proposed actions. Below, we provide a summary of certain comments and our responses. First, we provide a summary of the more significant/relevant modeling related comments with a summary of our responses. The entirety of the modeling comments and our responses thereto are contained in a separate document titled the Modeling RTC document. Second, we provide a summary of all of the relevant technical comments we received and our responses to these comments. Third, we provide a summary below of all of the relevant legal comments and our responses.

A. Modeling

Comment: Cleco and Entergy assert that their BART-eligible sources were shown through their initial Comprehensive Air Quality Model with Extensions (CAMx) modeling analysis not to have significant impacts above the 0. 5 dv threshold and are therefore, not subject to BART. After EPA's initial review of Entergy and Cleco's CAMx modeling[33] provided to EPA and LDEQ before LDEQ proposed its SIP, EPA provided additional guidance to LDEQ and Entergy/Cleco/Trinity. Even though the commenters disagreed with the technical basis of EPA's requests for revised modeling, in response to this guidance, revised modeling analyses[34] were completed for these sources

[32] Email from Vivian Aucoin (LDEQ) forwarding email from Richie Corvers (Entergy) detailing the current status of decommissioning Entergy Michoud Units 2 and 3.
[33] See Updated BART Applicability Screening Analysis Prepared by Trinity Consultants, November 9, 2015. Available in Appendix D of the 2017 Louisiana Regional Haze SIP.
[34] See October 10, 2016 Letter from Cleco Corporation to Vivian Aucoin and Vennetta Hayes, LDEQ, RE: Cleco Corporation Louisiana BART CAMx Modeling, included in Appendix B of the 2017 Louisiana Regional Haze SIP

and the commenters maintain that based on their revised modeling analyses, these units are not subject to BART. The commenters state that EPA's CAMx and CALPUFF modeling, which show that these sources are subject to BART, contain significant defects, making the modeling far less reliable than the initial CAMx modeling analyses submitted by Cleco and Entergy. They assert that CAMx modeling is clearly superior to CALPUFF modeling when there are relatively long distances between the modeled source and the Class I areas. The commenters state that the CAMx modeling protocol followed in their initial modeling analysis was proper, minimizes potential bias and shows that the BART-eligible units at Cleco Brame Energy Center and the Entergy Nelson, Waterford, Willow Glen, Ninemile Point, and Little Gypsy facilities have insignificant impacts at all Class I areas. Therefore, the commenters believe that all of these units should have been characterized as not subject to BART by LDEQ and EPA.

The commenters state that EPA should reconsider its evaluation of the submitted CAMx modeling, as the EPA's concerns about the accuracy of these modeling results are unfounded. Commenters provide additional specific comments addressing technical issues related to EPA's assessment of Cleco and Entergy's CAMx modeling analyses, refutes EPA's criticism in the proposed rule and TSD of this modeling, as well as comments concerning problems with EPA's own CAMx modeling methodology and performance evaluation. These specific comments also address deficiencies with the CALPUFF modeling system, including limitations on modeling at distances greater than 300km and the ability of the CALPUFF model to assess visibility impacts.

Response: We disagree with the comments, and we agree with LDEQ that the CALPUFF modeling following the reviewed protocol is an appropriate tool for evaluating visibility impacts and benefits to inform a BART determination. Relying on the CALPUFF modeling results submitted by Cleco[35] and Entergy,[36] as well as EPA's review and additional CALPUFF modeling,

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submittal; CAMx Modeling Report, prepared for Entergy Services by Trinity Consultants, Inc. and All 4 Inc, October 14, 2016, included in Appendix D of the 2017 Louisiana Regional Haze SIP submittal.

[35] CALPUFF Modeling Report BART Applicability Screening Analysis: Cleco Corporation, Brame Energy Center, Teche Power Station, Prepared by Trinity Consultants, July 30, 2015. Available in Appendix B of the 2017 Louisiana Regional Haze SIP submittal.

[36] Updated BART Applicability Screening Analysis Prepared by Trinity Consultants, November 9, 2015. Available in

[37] included in the February 2017 and October 2017 SIP revisions, LDEQ concluded that the BART-eligible sources at Cleco Brame Energy Center and the Entergy Nelson, Waterford, Willow Glen, Ninemile Point, and Little Gypsy facilities have visibility impacts greater than 0. 5 dv and are therefore subject to BART. We are finalizing our approval of LDEQ's subject to BART determinations for these EGU sources. Accordingly, LDEQ performed the required five-factor analyses and made BART determinations for these subject to BART sources. We agree with the commenters that CAMx provides a scientifically defendable platform for assessing visibility impacts over a wide range of source-to-receptor distances and is also more suited than some other modeling approaches for evaluating the impacts of SO_2, NO_X, VOC, and PM emissions, as it has a more robust chemistry mechanism. As we discuss below, we utilized CAMx to provide additional data and analysis for some large emission sources. However, CALPUFF is an appropriate tool for BART evaluations and remains the recommended model for BART. [38] We are confident that CALPUFF distinguishes the relative contributions from sources such that the differences in source configurations, sizes, emission rates, and visibility impacts are well-reflected in the model results. We address specific comments concerning limitations on modeling distance and the ability of CALPUFF to assess visibility impacts from these sources in detail in the Modeling RTC. As discussed in the Modeling RTC document, EPA and FLM representatives have utilized CALPUFF results in a number of different situations when the range was between 300-450 km or more.[39] We

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Appendix D of the 2017 Louisiana Regional Haze SIP submittal.

[37] DRAFT Technical Support Document for Louisiana Regional Haze: CALPUFF Best Available Retrofit Technology Modeling Review, April 2017 (revised May 2017 to include Entergy Nelson) Available in Appendix F of the 2017 Louisiana Regional Haze SIP submittal. EPA performed additional modeling for Entergy Nelson to address identified errors in some emission estimates.

[38] 82 FR 5182, 5196 (Jan. 17, 2017). "As detailed in the preamble of the proposed rule, it is important to note that the EPA's final action to remove CALPUFF as a preferred appendix A model in this *Guideline* does not affect its use under the FLM's guidance regarding AQRV assessments (FLAG 2010) nor any previous use of this model as part of regulatory modeling applications required under the CAA. Similarly, this final action does not affect the EPA's recommendation [See 70 FR 39104, 39122-23 (July 6, 2005)] that states use CALPUFF to determine the applicability and level of best available retrofit technology in regional haze implementation plans."

[39] For example, South Dakota used CALPUFF for Big Stone's BART determination, including its impact on multiple Class I areas further than 400 km away, including Isle Royale, which is more than 600 km away. See 76 Fed. Reg. 76656. Nebraska relied on CALPUFF modeling to evaluate whether numerous power plants were subject to BART where the "Class I areas [were] located at distances of 300 to 600 kilometers or more from" the sources. See Best Available Retrofit Technology Dispersion Modeling Protocol for Selected Nebraska Utilities, p. 3. EPA Docket ID No. EPA-R07-OAR-2012-0158-0008. In our 2014 proposed action and the 2016 final action on Texas regional haze we approved the use of CALPUFF to screen BART-eligible non-EGU sources at distances of 400 to 614 km for some sources. 79 FR 74818 (Dec. 16, 2014), 81 FR 296 (Jan. 5, 2016).

note that the Entergy Waterford, Willow Glen, Ninemile Point, and Little Gypsy facilities are located 217 km or less from the nearest Class I area. Therefore, the commenters concern regarding the use of CALPUFF modeling for distances greater than 300km is not relevant to the subject-to-BART determinations for these sources.

As we noted in our May 19, 2017 proposed action and CALPUFF Modeling TSD[40], the CALPUFF model is typically used for distances less than 300-400 km. Some of the BART-eligible sources in Louisiana are far away from Class I areas, yet have high enough emissions that they may significantly impact visibility at Class I areas in Louisiana and surrounding states. We performed additional modeling using CAMx to evaluate the visibility impacts and benefits of controls for the Entergy Nelson, Cleco Brame, and Big Cajun II sources to address possible concerns with utilizing CALPUFF to assess visibility impacts at Class I areas located far from these large emission sources. LDEQ included this modeling in Appendix F of the October 26, 2017 SIP revision. [41] Our CAMx modeling supports the determination made by LDEQ that Entergy Nelson and Cleco Brame cause or contribute to visibility impairment at nearby Class I areas and are therefore subject to BART. Entergy Nelson has a maximum modeled impact of 2.22 dv at Caney Creek, with 31 days out of the 365 days modeled exceeding 0.5 dv, and 9 days exceeding 1.0 dv. Similarly, Cleco Brame has a maximum modeled impact of 2.833 dv at Caney Creek, with 30 days out of a maximum 365 days modeled exceeding 0.5 dv and 10 days exceeding 1.0 dv. We disagree with the commenters and find that our CAMx modeling is consistent with the BART Guidelines and a previous modeling protocol we developed for the use of CAMx modeling for BART screening for sources in Texas. [42,43] We

[40] 82 FR 32294 (May 19, 2017).

[41] DRAFT Technical Support Document for Louisiana Regional Haze: CAMx Best Available Retrofit Technology Modeling April 2017 (Revised May 2017 to include Entergy Nelson) Available in Appendix F of the 2017 Louisiana Regional Haze SIP submittal.

[42] Texas had over 120 BART-eligible facilities located at a wide range of distances to the nearest class I areas in their original Regional Haze SIP. Due to the distances between sources and Class I areas and the number of sources, Texas worked with EPA and FLM representatives to develop a modeling protocol to conduct BART screening of sources using CAMx photochemical modeling. Texas was the only state that screened sources using CAMx and had a protocol developed for how the modeling was to be performed and what metrics had to be evaluated for determining if a source screened out. See Guidance for the Application of the CAMx Hybrid Photochemical Grid Model to Assess Visibility Impacts of Texas BART Sources at Class I Areas, ENVIRON International, December 13, 2007, available in the docket for this action.

[43] EPA, the Texas Commission on Environmental Quality (TCEQ), and FLM representatives verbally approved the approach in 2006 and in email exchange with TCEQ representatives in February 2007 (see email from Erik Snyder

respond to specific comments concerning our CAMx modeling, including model inputs, model performance, our modeling protocol and the use of direct model results in detail in the Modeling RTC document.

As we discuss in detail in our May 19, 2017 proposed action and CAMx Modeling TSD,[44] the initial CAMx modeling, as well as the revised modeling submitted by Cleco and Entergy[45] was not conducted in accordance with the BART Guidelines and the previous modeling protocol developed for the use of CAMx modeling for BART screening for sources in Texas and does not properly assess the maximum baseline impacts. We disagree with the commenters and consider this CAMx modeling in the February 2017 LA RH SIP, Appendices B and D, to be invalid for supporting any determination of visibility impacts below 0. 5 dv. As discussed in the CAMx Modeling TSD and in our Preliminary Review Response letter to Entergy and Cleco,[46] the initial modeling deviated from the BART guidelines because it did not utilize emissions representative of maximum 24-hr actual emissions from the baseline period, did not evaluate the maximum modeled impact for all days, and did not calculate the deciview visibility impact based on a natural visibility background approach. We also review the revised modeling in detail in the CAMx Modeling TSD, identify a number of short comings in the revised approach, and conclude that it does not properly assess the maximum baseline impacts and is inconsistent with the BART Guidelines. We respond to specific comments concerning the CAMx modeling analyses developed by Trinity Consultants for Cleco and Entergy included in the February 2017 LA RH SIP at Appendices B and D in detail in the Modeling RTC.

B. NRG Big Cajun II

Comment: NRG stated that it supports EPA's proposed approval of Louisiana's SIP revision, which determined that the Big Cajun II units are not subject to BART. NRG stated that Big Cajun II is not subject to BART, but even if it were, no further controls would be needed because the

(EPA) to Greg Nudd of TCEQ Feb. 13, 2007 and response email from Greg Nudd to Erik Snyder Feb. 15, 2007, available in the docket for this action).

[44] 82 FR 32294, (May 19, 2017).

[45] February 10, 2017 LA RH SIP, Appendices B (Cleco) and D (Entergy).

[46] Technical Support Document for EPA's Proposed Action on the Louisiana Regional Haze State Implementation Plan, April 2017.

compliance actions NRG has taken for Mercury and Air Toxics Standards (MATS) and a consent decree,[47] including installation of the existing dry sorbent injection (DSI) system, would be sufficient to meet BART. NRG asserted that, if the requirements set forth in the Consent Decree between Louisiana Generating[48] and EPA do not satisfy BART, Louisiana Generating's five-factor analysis, which used a baseline based on operation of the existing DSI and represents a realistic depiction of anticipated annual emissions, indicates that no further controls are cost-effective and Big Cajun II's current configuration and emission controls satisfies BART.

Response: We agree that Big Cajun II is not subject to BART. Prior to the submittal of the February 2017 Regional Haze SIP, the LDEQ and Louisiana Generating entered into an AOC that made the existing control requirements and maximum daily emission limits permanent and enforceable for BART. The AOC is included in Louisiana's February 2017 SIP revision. The modeling included in the February 10, 2017 SIP submittal (Appendix C) demonstrates that, with these existing controls and enforceable emission limits, Big Cajun II has modeled visibility impacts less than 0. 5 dv at all impacted Class I areas, and therefore the facility is not subject to BART. We are finalizing our approval of Louisiana's determination in the SIP that the source is not subject to BART. Because the source was determined to not be subject to BART, LDEQ and EPA have made no determination of what controls, if any, would be necessary to satisfy BART had the source not screened out.

C. Cleco Brame Energy Center

Comment: Cleco stated that it disagrees with the EPA that there is uncertainty in the cost-effectiveness of the enhanced DSI system for the Rodemacher 2 unit. Cleco stated that cost-effectiveness is calculated by adding annual operation and maintenance costs to the annualized

[47] The Consent Decree was agreed to and entered in *U. S. of America and Louisiana Department of Environmental Quality vs. Louisiana Generating LLC*, Civil Action No. 09-100-JJB-DLD (M. D. La.). Among other things, the CD requires Louisiana Generating to refuel Big Cajun II Unit 2 to natural gas, and install and continuously operate dry sorbent injection (DSI) at Big Cajun II Unit 1 while maintaining a 30-day rolling average SO2 emission rate of no greater than 0. 380 lb/MMBtu by no later than April 15, 2015. The CD also requires Louisiana Generating to retire, refuel, repower, or retrofit Big Cajun II Unit 1 by no later than April 1, 2025.

[48] NRG is the corporate entity that owns Louisiana Generating (LA Gen), which operates two plants in Louisiana, Big Cajun I and Big Cajun II.

capital cost of an option and then dividing by the reduction in annual emissions from a baseline period. Cleco asserted that, as the EPA acknowledged in its proposal, there are no capital costs associated with upgrading to an enhanced DSI system at Rodemacher 2. Rather, the only costs that Cleco will incur relate to additional reagent and associated waste disposal. Cleco stated that the cost of reagent that the company used in its five-factor analysis was based on actual contracts (currently in place) between the reagent supplier and Cleco. In addition, Cleco determined the reduction in emissions from the baseline period during actual unit testing. Therefore, Cleco believes that there is a high degree of certainty that the cost-effectiveness value for an enhanced DSI system is $967/ton.

Cleco also disagrees with the EPA that there is "uncertainty" with respect to the cost-effectiveness estimates for the dry scrubbing (Spray Dry Absorption or SDA) and wet scrubbing (wet Flue Gas Desulfurization, or wet FGD) options. The estimates were prepared for Cleco by the engineering firm Sargent & Lundy (S&L). S&L is a full-service engineering consulting firm providing expertise in all areas of power plant engineering and design. S&L has considerable experience with the federal and state environmental regulations affecting power plant operations, as well as the specification, evaluation selection, and implementation of emission control technologies for both gas and coal-fueled utility power facilities, including extensive experience with various FGD technologies. For example, since 2000, S&L has provided, or is currently providing, engineering services for the implementation of over 40 wet FGD projects, 30 dry FGD projects, and 25 DSI projects, all of which are technologies that were analyzed as part of the Five-Factor Analysis. As such, S&L is qualified to develop capital and O&M cost estimates for these control analyses. Cost estimates for the Rodemacher 2 unit were prepared in accordance with the BART Guidelines and the methodology described in EPA's Control Cost Manual and represent study-level cost estimates. Capital costs for major equipment were developed using equipment costs for similarly sized units (adjusted for actual equipment sizing), site-specific balance-of plant (BOP) project-specific indirect cost factors. Where possible, default factors from EPA's Control Cost Manual were used to calculate indirect costs.

The capital cost estimates were provided to LDEQ and EPA for both the wet FGD and SDA options identifying the major cost categories, including civil work, concrete, steel, mechanical equipment, material handling, electrical, piping, controls and instrumentation. In addition, detailed cost effectiveness worksheets were provided to LDEQ and EPA identifying the variable O&M costs (e. g. , reagent, waste disposal, auxiliary power and water), indirect operating costs (e. g. , property taxes, insurance, and administrative services) and fixed O&M costs (e. g. , operating personnel, maintenance material and labor) for both the SDA and wet FGD options. The indirect and fixed operating costs were based on factors provided in EPA's Control Cost Manual.

Cleco, however, agrees with EPA that the Total Capital Cost figure for the SDA option should be $378,318,000. The capital cost for the fabric filter and associated auxiliaries were inadvertently included twice in the Total Capital Cost figure line item. As such, the cost effectiveness for the SDA option should be $6,893/ton, not $8,589/ton. See attachment *Cleco RPS2 S02 Worksheets_2010-2014 Baseline - Rev I.* Regardless, the cost-effectiveness of the SDA and wet FGD options are significantly higher in comparison to the enhanced DSI option with minimal incremental

visibility improvement. Cleco nevertheless agrees with LDEQ and EPA that an enhanced DSI system meets BART for the Rodemacher 2 unit.

Response: We agree that the cost effectiveness figures presented in Cleco's Five Factor Analysis included in the February 2017 LA RH SIP, Appendix B, are reasonable, as we stated in our April 2017 Technical Support Document (April 2017 TSD). [49] "However, because DSI and a fabric filter baghouse are already installed and operational, the cost-effectiveness of Cleco's enhanced DSI is based only on the cost of the additional reagent and no additional capital costs are involved. Consequently, we believe that the uncertainty of Cleco's enhanced DSI cost-effectiveness figures is low and that Cleco's estimated cost-effectiveness of $967/ton is reasonable. "[50]

[49] Technical Support Document for EPA's Proposed Action on the Louisiana Regional Haze State Implementation Plan, April 2017.
[50] *Id.* at 19

We agree with Cleco's correction to the capital costs provided for SDA, and that the total capital cost figure based on Cleco's cost estimate should have been $378,318,000. The estimated cost effectiveness for SDA in their analysis is $6,893/ton, rather than $8,589/ton as stated in the Cleco cost analysis. [51]

As discussed in the April 2017 TSD, Cleco did not supply complete documentation for its cost analysis for SDA and wet FGD for Rodemacher 2, including details to support total direct cost and total capital cost figures. Based on our experience reviewing and conducting control cost analyses for many other similar types of facilities, Cleco's estimates appear high and without complete documentation, some uncertainty exists with respect to Cleco's cost-effectiveness estimates for SDA and wet FGD—$6,893/ton and $5,580/ton, respectively. For example, our estimated cost-effectiveness for similar equipment at Nelson Unit 6 is approximately $3000/ton.

We noted, however, that because DSI and a fabric filter baghouse are already installed and operational, the cost-effectiveness of Cleco's enhanced DSI is based only on the cost of the additional reagent and no additional capital costs are involved. In contrast to enhanced DSI, SDA and wet FGD, require the installation of controls and significant capital costs. We recognize the low cost effectiveness value of enhanced DSI. We also recognize the potentially high incremental costs of obtaining 0. 1-0. 2 dv of visibility improvement through SDA or wet FGD. Therefore, we are finalizing our approval of LDEQ's conclusion that enhanced DSI is SO_2 BART for the Rodemacher 2, with a SO_2 emission limit of 0. 30 lbs/MMBtu on a 30 day rolling basis.

Comment: EPA's proposed determination [for Cleco's Brame Unit 2 (Rodemacher 2)] that enhanced DSI constitutes BART due to it being more cost-effective than FGD or scrubber given the small amount of additional visibility improvement that would be achieved with FGD or SDA is incorrect. EPA admitted it did not know the cost of scrubbers and therefore could not make the determination that scrubbers were not cost effective. Additionally, EPA recognized in its proposal

[51] See Appendix B of the February 2017 LA RH SIP

that the costs submitted by Cleco were likely too high. EPA provided no discussion concerning the range of cost-effectiveness values for wet FGD that the agency would deem sufficient to justify the incremental visibility improvement relative to enhanced DSI. Nothing in the guidance, statute, or federal rules indicates that incremental costs should be dispositive in a BART determination. EPA must correct the State's mistakes and provide an accurate estimate of the costs and cost-effectiveness of controls, including enhanced DSI, dry FGD, and wet FGD.

Had EPA or Louisiana developed an accurate cost analysis, it is clear that either a wet or dry FGD at Rodemacher 2 would be well within the range of controls that EPA has previously determined are cost effective. First, with respect to dry FGD systems, it does not appear that Louisiana or EPA evaluated accurate removal efficiencies of various dry FGD systems, especially with the low sulfur coal that is used. SDAs can achieve emission rates lower than 0. 06 lb/MMBtu and SO2 removal efficiencies greater than 95% control. [52] Indeed, Louisiana failed entirely to evaluate dry FGD systems, such as circulating dry scrubbers (CDS) that are commonly used in the industry and vastly understated the removal efficiencies associated with those controls. The Alstom Novel Integrated Desulfurization system (NID™), has been selected as the most cost effective scrubber option when compared to other technologies in several recent evaluations. Second, with respect to the dry FGD systems that the State did evaluate, it significantly overstated the costs of such control technologies. Together, these errors significantly overstated the cost-effectiveness of dry FGD systems. When those errors are corrected the cost-effectiveness of dry FGD control technology is well within the range of costs that EPA has previously found reasonable. [53] SDA at a

[52] For example, the Newmont Nevada power plant (aka TS Power Plant), equipped with a dry lime FGD system, has achieved an annual average SO2 rate of 0. 034 lb/MMBtu over 2009 to 2016. The Wygen II power plant is also equipped with a dry lime scrubber and burns low sulfur coal, and is achieving annual average SO2 rates of 0. 048 lb/MMBtu. The Dry Fork Station which began operation in 2011 and is equipped with a dry lime scrubber is achieving an annual average SO2 rate of 0. 050 lb/MMBtu. See Technical Support Document to Comments of Conservation Organizations, Prepared by Victoria R. Stamper, June 18, 2017.

[53] BART controls have been approved that have an average cost-effectiveness of more than $5,500 per ton. See 77 FR 31,692, 31,711 (May 29, 2012) and 77 FR 61478, 61506 (Oct. 9, 2012) (requiring SO2 BART controls with an average cost-effectiveness of $5,587, $5,583, and $5,583 for the Kanoelehua, Puna, and Shipman power plants). Other final BART determinations have been only slightly less expensive than the costs here. See, e. g., 77 FR 18052, 18082, 18084, 18087 (Mar. 26, 2012) (approval of Colorado's SIP) and 77 FR 76871 (Dec. 31, 2012) (requiring NOX BART controls with an average cost- effectiveness of $4,887 for Craig Unit

controlled emission rate of 0. 06 lb/MMBtu is estimated to be $2,908/ton. SDA or NID™ CDS is estimated to be $2,808/ton with a controlled emission rate of 0. 04 lb/MMBtu.

These supplemental cost analyses, using the same IPM cost spreadsheets used by EPA in its proposed Texas BART analysis,[54] demonstrate that Louisiana's cost analyses for a dry FGD system are greatly overstated.

Louisiana's cost calculations for wet FGD controls at Rodemacher 2 are also erroneous. Contrary to Louisiana's evaluation, wet FGDs can achieve much lower SO_2 emission rates than the 0. 04 lb/MMBtu assumed by the State. Indeed, coupled with low sulfur Powder River Basin coal, new wet FGD scrubbers can achieve emission reductions greater than 95%, and are capable of achieving SO_2 emission rates of 0. 02 lb/MMBtu. Even assuming a 0. 04lb/MMBtu emission rate, an accurate cost effectiveness evaluation demonstrates that a wet FGD system could be installed for $2,947/ton of SO_2 removed, which is well within the range of costs that EPA has found reasonable—most recently in the agency's proposed BART determinations for Texas. Moreover, BART controls have been approved that would lead to equal, or less, visibility improvement than achievable with wet or dry scrubbers at Rodemacher 2.

The commenter states that their supplemental cost analyses of either wet FGD or dry FGD at Brame Unit 2 (Rodemacher 2) show that the costs of either a wet or a dry FGD system are very reasonable, in that other similar sources have had to bear similar costs for pollution control to address BART and regional haze requirements. The incremental costs of installing a dry FGD or a wet FGD system at Brame Unit 2 compared to DSI plus a baghouse are very reasonable and thus should not be the basis for rejecting a dry or wet FGD system at Brame Unit 2. Considering the additional SO_2 reductions and improved visibility benefits of installing the more effective controls of a dry or wet scrubber compared to DSI, EPA should have based its SO_2 BART determination on either wet or dry FGD for Brame Unit 2.

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3).

[54] 82 FR 912 (January 4, 2017).

Response: We agree with the comment that in some cases SDA and wet FGD may achieve lower emission rates than those evaluated. We evaluated the control capabilities of SDA and wet FGD in our action on Oklahoma BART. [55] There we determined that reduction efficiencies of up to 95% or as low as 0. 06 lb/MMBtu SO_2 for dry scrubbers and 97% - 98% removal efficiency or an outlet SO_2 of 0. 04 lb/MMBtu for wet scrubbers are appropriate levels for the BART evaluation for units when burning low sulfur coals. [56] These limits are a reasonable estimate of potential control and we have consistently used these emission limits in our evaluation of controls for similar units in Texas and Arkansas. [57] We disagree with the comment that the analysis in the February 2017 SIP is deficient because CDS was not evaluated. CDS is a variation on SDA with similar costs and reduction efficiency as the more widely used SDA design. As the commenters note, CDS annual costs are estimated to only be about 1-2% lower than the annual costs of an SDA.

We disagree with the comment concerning consideration of incremental costs. The BART Guidelines state that while the average costs (total annual cost/total annual emission reductions) for two control options each may be deemed to be reasonable, the incremental cost of the additional emission reductions to be achieved by option 2 may be very great. In such an instance, it may be inappropriate to choose option 2, based on its high incremental costs, even though its average cost may be considered reasonable. [58] LDEQ reviewed all the available information and determined that the amount of visibility benefit achieved from SDA or wet FGD over enhanced DSI was not large enough to justify the additional cost of these controls at Rodemacher 2. EPA's regulations under the CAA "do not require uniformity between . . . actions in all circumstances and instead 'allow for some variation' in actions taken in different regions." 81 FR at 326 (quoting Amendments to Regional Consistency Requirements, 80 FR 50250, at 50258 (Aug. 19, 2015)). Some variation is to be expected because SIP actions are highly fact-dependent. The state weighed the factors considering

[55] 76 FR 16168 (March 22, 2011); 76 FR 81728 (Dec. 28, 2011).

[56] See Appendix C to the Oklahoma TSD, available at regualations. gov, Document ID: EPA-R06-OAR-2010-0190-0018.

[57] 82 FR 912 (January 4, 2017), 80 FR 18943 (April 8, 2015).

[58] 40 CFR part 51, Appendix Y, IV(D)(e)(5).

all available information, in the February 10, 2017 SIP, and concluded that enhanced DSI is BART for this unit. The CAA allows EPA to review all the information in the SIP submittal and any other publicly available information to make its decision whether it agrees the state's determination meets the applicable requirements. After reviewing the relevant information, we determined that the State's SIP meets the requirements of the Act and the applicable regulations and guidance.

In our review of the cost estimates, we noted a lack of documentation and uncertainty in the Cleco cost-estimates for SDA and wet FGD. We noted, however, that because DSI and a fabric filter baghouse are already installed and operational, the cost-effectiveness of Cleco's enhanced DSI is based only on the cost of the additional reagent and no additional capital costs are involved. The cost-effectiveness of enhanced DSI was estimated to be $967/ton. [59] In contrast to enhanced DSI, SDA and wet FGD require the installation of controls and significant capital costs. Cleco's cost-effectiveness estimates for SDA and wet FGD are $6,893/ton and $5,580/ton, respectively, while the commenter's estimate the costs of SDA, NID™ CDS and wet FGD to be approximately $2,800/ton or greater[60]. When the already sunk capital costs of the existing DSI system are removed, the incremental annual cost of enhanced DSI is estimated to be only $1,695,300/yr. Even accounting for the potential issues in Cleco's SDA and wet FGD cost analyses and considering the commenter's cost estimates, we are cognizant of the enhanced DSI's low cost-effectiveness, and the incremental costs of obtaining the additional 0. 1-0. 2 dv of visibility improvement that can be achieved by SDA, CDS or wet FGD over enhanced DSI are high. Therefore, we are finalizing our approval of LDEQ's conclusion that the amount of visibility benefit achieved from SDA or wet FGD over enhanced DSI was not large enough to justify the additional cost of these controls and enhanced DSI is SO_2 BART for the Rodemacher 2, with a SO_2 emission limit of 0. 30 lbs/MMBtu on a 30 day rolling basis.

Comment: With respect to the analysis for the Rodemacher 2 unit, EPA stated the following concerning enhanced DSI:

In considering enhanced DSI, Cleco relied upon on-site testing it had conducted

[59] LA RH SIP (February 2017), Appendix B.
[60] Technical Support Document to Comments of Conservation Organizations (Stamper Report), Prepared By: Vivian R Stamper (June 18, 2017).

> to determine the performance potential of an enhanced DSI system. The testing was conducted to evaluate the effectiveness of the DSI system to control hydrochloric acid for compliance with the Mercury and Air Toxics Standards (MATS), but the continuous emissions monitor system (CEMS) was operating and capturing SO_2 emissions data during the test, which provided the necessary information to determine the control efficiency of DSI and enhanced DSI for SO_2.

82 FR 22936. On page 19 of the related TSD, EPA further stated:

> Cleco also did not provide the DSI testing information, which creates a degree of uncertainty concerning the potential control level of its current DSI system and the enhanced DSI system it reviews. Another concern was that the DSI testing that Cleco relied on was not intended to evaluate DSI for SO_2 control efficiency, which caused some uncertainty concerning the potential control level of DSI and enhanced DSI.

Cleco disagrees that there is a "degree of uncertainty" concerning the potential SO_2 control level of the current DSI system or the enhanced DSI system. Although the testing conducted was based on operating the system to determine removal of hydrogen chloride (HCl), the Rodemacher 2 unit operated a SO_2 continuous emission monitoring system (CEMS) that gathered valid, real-time SO_2 emissions data that demonstrated the achievable reductions. The data gathered by the SO_2 CEMS is the same data submitted to EPA's Air Markets Program Data on a quarterly basis. Cleco, therefore, does not believe that a degree of uncertainty exists with respect to the SO_2 control level.

As stated in the BART Five-Factor Analysis submitted to LDEQ,[61] two performance tests were conducted at very high injection rates to determine the removal that could be achieved while operating the DSI system at close to the maximum design injection rate. The first test was performed at 12,000 lb/hr, which showed an average removal of 66% SO_2 and the second test was conducted at 4,000 lb/hr, which showed an average removal of 63% SO_2. Both tests were conducted at injection rates significantly higher than the current DSI rate of 1,500 lb/hr. Although the system is designed to inject up to 17,800 lb/hr of Trona, there would be close to no benefit in additional SO_2 reduction since increasing the injection rate by 300% (from 4,000 lb/hr to 12,000 lb/hr) only provided an additional 3% SO_2 reduction on average. Based on the foregoing, Cleco believes there is a high

[61] LA RH SIP (February 2017), Appendix B.

degree of certainty regarding the control levels achievable for the current DSI and enhanced DSI systems.

We also received comments from environmental groups[62] stating that Cleco evaluated two levels of control with DSI: DSI to meet an SO_2 limit of 0.41 lb/MMBtu and "enhanced DSI" to meet an SO_2 limit of 0.30 lb/MMBtu. These proposed limits were based on testing done on-site that Cleco conducted to determine the performance potential of enhanced DSI. However, Cleco did not submit the testing as part of the record for the BART determination. Further, the testing was not done to evaluate SO_2 removal efficiency and was instead done to optimize hydrogen chloride control efficiency. Presumably, Cleco did not concurrently evaluate uncontrolled SO_2 emissions, and thus the accuracy of the assumed SO_2 removal efficiencies with DSI and enhanced DSI of 39% and 63% is questionable.

Further, Brame Unit 2 (Rodemacher 2) is already achieving the assumed "enhanced DSI" level of control of 0.30 lb/MMBtu SO_2 rate with the current DSI operations which are being implemented to meet the MATS hydrogen chloride limit. Based on data in EPA's Air Markets Program Database, the average monthly SO_2 emission rate at Brame Unit 2 was 0.26 lb/MMBtu from June 2015 through the first quarter of 2017. While there have been a few months with monthly SO_2 emission rates in excess of 0. 30 lb/MMBtu, the large majority of monthly SO_2 emission rates at Brame Unit 2 have been at or well below 0. 30 lb/MMBtu. Thus, there does not seem to be much if any enhancement needed to achieve 0. 30 lb/MMBtu with DSI and a baghouse. Cleco should therefore have assumed a 0. 30 lb/MMBtu SO_2 limit, or even lower, as achievable with the currently operated DSI and baghouse. Given that the unit is already achieving a 0. 30 lb/MMBtu level, it does appear likely any lower SO_2 emission rates could be achieved with DSI "enhancements."

Response: We agree with the commenter that the available testing data demonstrates that increasing the injection rate beyond 4,000 lb/hr (63% removal) results in minimal increased removal efficiency. As we discussed in our TSD and identified by the commenter above, because the DSI

[62] See Stamper Report (attached as Technical Support Document to Conservation Organizations June 18, 2017 comment letter).

testing was not performed to examine optimization of SO_2 removal and Cleco did not provide sufficient detail with regard to how the testing was conducted, we noted "some uncertainty" in the potential control levels for DSI and enhanced DSI. For example, it is unclear if the testing evaluated a range of fuel sulfur content or heat input rates. We therefore reviewed available emissions data from the unit from when the DSI became operational in March 2015 through the end of 2016 and found that based on that information[63] covering a range of actual operations, as well as the provided testing data, Louisiana's selection of 0.30 lbs/MMBtu on a rolling 30-day basis for SO_2 is reasonable for an enhanced DSI system on the Rodemacher 2 unit.

We agree with the comment that recent emission data from June 2015 through the first quarter of 2017 demonstrates the ability to emit at or below 0. 3 lb/MMBtu on a monthly basis. However, as also noted by the commenter, monthly emission rates with the current operation of the existing DSI system have also exceeded 0.3 lb/MMBtu at times during that same period. For example, the average monthly emission rate in December 2016 was 0. 39 lb/MMBtu. The available testing data demonstrates that the unit is already equipped to operate the existing DSI and fabric filter at a range of injection rates, including the higher injection rates evaluated in the BART analysis, as "enhanced DSI." In order to achieve the emission rate specified in Louisiana's BART determination of 0. 30 lbs/MMBtu for SO_2, made permanent and enforceable in the AOC, Cleco will have to operate the existing DSI system at higher injection rates to maintain future emissions below 0. 3 lb/MMBtu on a rolling 30-day basis.

D. Entergy Nelson

Comment: LDEQ commented that EPA's cost analysis did not alter its initial conclusion presented in its February 2017 RH SIP submittal that BART was "no further control."

Response: In its October 2017 Regional Haze SIP submittal, LDEQ stated that, after a weighing of the five factors and after a review of both Entergy's and EPA's information, "BART is the emission limit of 0. 6 lbs/MMBtu based on a 30 day rolling average as defined in the AOC. . .

[63] See Figure 1 and accompanying discussion on page 18 of the TSD associated with our May 2017 proposed approval.

LDEQ believes, at present, that the use of lower sulfur coal presents the appropriate SO_2 control based on consideration of economics, energy impacts, non-air quality environmental impacts, and impacts to visibility."[64]

Comment: Entergy supports the proposed limit for Nelson Unit 6 but disagrees that the Control Cost Manual disallows certain costs such as escalation during construction and owner's costs. [65] These are actual costs that will be incurred during construction and that should have been included in the costs for each add-on control technology evaluated. Entergy also disagrees with EPA's reduction in the contingency factor from 25% to 10%. EPA has provided no justification for its use of 10% for the contingency factor, over than that it is "in the middle of the range employed in the Control Cost Manual. "[66] The costs that Entergy submitted in its BART Five-Factor Analysis for Nelson[67] are a more accurate estimate of the *actual* costs for controls at Nelson Unit 6 than the more generic costs that EPA assumed. However, even accepting EPA's cost calculations, the costs of installing SO_2 controls are too high to constitute BART in light of the distance of Nelson from the nearest Class I areas and the minor visibility benefit expected to be achieved by such controls. Based on an evaluation of the five statutory factors required for a BART analysis, LDEQ appropriately concluded that low sulfur coal constitutes SO_2 BART for Nelson 6. As Entergy concluded in the Nelson Five-Factor analysis, "no visibility improvement can reasonably be anticipated to result from the installation of [SO_2] controls. Furthermore, the cost of each of the add-on [SO_2] control options for Unit 6 is estimated as $3 billion or more per dv improvement."[68]

Response: We disagree with commenters' assertions that Allowance for Funds Used During Construction (AFUDC) should be incorporated into our cost analysis, as the practice of incorporating AFUDC is contradictory to the Cost Control Manual (CCM) methodology. [69] The utility industry

[64] Louisiana Regional Haze SIP, October 2017.
[65] 82 FR at 32298.
[66] TSD for EPA's Proposed Action on the Louisiana State Implementation Plan for the Entergy Nelson Facility, at page 18 (June 2017), Docket No. EPA-R06-OAR-2017-0129-0025.
[67] Nelson Five-Factor Analysis.
[68] Nelson Five-Factor Analysis, at 4-6.
[69] EPA Air Pollution Control Cost Manual, Sixth Edition, EPA/452/B-02-001, January 2002 available at http://www. epa. gov/ttncatc1/dir1/c_allchs. pdf.

uses a method known as "levelized costing" to conduct its internal comparisons, which is different from the methods specified by the CCM. Utilities use "levelized costing" to allow them to recover project costs over a period of several years and, as a result, realize a reasonable return on their investment. The CCM uses an approach sometimes referred to as overnight costing, which treats the costs of a project as if the project were completed "overnight," with no construction period and no interest accrual. Since assets under construction do not provide service to current customers, utilities cannot charge the interest and allowed return on equity associated with these assets to customers while under construction. Under the "levelized costing" methodology, AFUDC capitalizes the interest and return on equity that would accrue over the construction period and adds them to the rate base when construction is completed and the assets are used. Although it is included in capital costs, AFUDC primarily represents a tool for utilities to capture their cost of borrowing and return on equity during construction periods. AFUDC is not allowed as a capitalized cost associated with a pollution control device under CCM's overnight costing methodology and is specifically disallowed for SCRs (ie., set to zero) in the CCM.[70] Therefore, in reviewing other BART determinations, EPA has consistently excluded AFUDC.[71] EPA's position regarding exclusion of AFUDC has been upheld in the United States Ninth Circuit Court of Appeals.[72]

In the TSD we discuss Entergy's selection of contingency factor. There, we state that we are not aware of any characteristics of Nelson Unit 6 that would present any unusual difficulty distinguishing it from any other scrubber retrofit, and thus justifying a high estimate for contingency. The CCM uses contingency values ranging from 5 to 15%, depending upon the control device in question and the precise nature of the factors requiring contingency. Entergy has not provided any additional information to support the use of a contingency factor outside of this range. The CCM clarifies that a contingency factor should be reserved (and applied to) only those items that could

[70] CCM (Tables 1. 4 and 2. 5 show AFUDC value as zero).
[71] See, e. g. , 77 FR 20894, 20916-17 (Apr. 6, 2012) (explaining in support of the North Dakota Regional Haze FIP, "we maintain that following the overnight method ensures equitable BART determinations * * *. "); 76 FR 52388, 52399-400 (August 22, 2011) (explaining in the New Mexico Regional Haze FIP that the Manual does not allow AFUDC)
[72] *Ariz. ex. rel. Darwin v. U. S. EPA*, 815 F,3d 519 (9th Cir. 2016).

incur a reasonable but unanticipated increase but are not directly related to the demolition, fabrication, and installation of the system. We used a contingency value of 10% for our analysis and adjustment of Entergy's costs, which lies in the middle of the range employed in the CCM. We believe this value is appropriate for mature technologies such as SDA and wet FGD.[73]

We disagree with the commenter's conclusion that no visibility improvement can reasonably be anticipated to result from the installation of SO_2 controls and that visibility benefits of scrubbers cost $3 billion/dv or more. This conclusion and estimate in Entergy's Nelson Five-Factor analysis, is based on its CAMx modeling analysis. As we discuss in detail in the CAMx Modeling TSD and in our Modeling RTC document, we consider this submitted CAMx modeling to be invalid for supporting any determination of visibility impacts. The results of Entergy's CALPUFF modeling and EPA's CALPUFF and CAMx modeling assessing the visibility benefits of controls on this unit are included in Appendix D and F of the October 2017 LA RH SIP.

LDEQ reviewed all the available information including the modeling provided by EPA and determined "that additional visibility benefits may be available through the use of FGD." The state, however, weighed the factors considering all available information contained in the SIP submittal, and concluded that "the use of lower sulfur coal presents the appropriate SO_2 control based on consideration of economics, energy impacts, non-air quality environmental impacts, and impacts to visibility."

We also note that we disagree with the use of the dollar per deciview metric as the only cost effectiveness metric in BART determinations. We discuss this in detail in our Response to Comments on our final action on Oklahoma Regional Haze.[74] Our decision to not rely on a $/dv metric was reviewed and upheld in by the Tenth Circuit.[75]

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[73] "EIA lists 748 SO_2 scrubber installations in operation in 2015. Of these, 296 are listed as being spray type wet scrubbers, with an additional 42 listed as being tray type wet scrubbers. An additional 269 are listed as being spray dry absorber types." See pg 8 of Technical Support Document for EPA's Proposed Action on the Louisiana State Implementation Plan for the Entergy Nelson Facility, June 2017.

[74] Response to Technical Comments for Sections E. through H. of the Federal Register Notice for the Oklahoma Regional Haze and Visibility Transport Federal Implementation Plan, Docket No. EPA-R06-OAR-2010-0190, 12/13/2011, pdf 116.

[75] *Oklahoma v. EPA*, 723 F. 3d 1201 (10th Cir. 2013)

Comment: The State makes the claim that a scrubber should be rejected because of the environmental impacts of waste generated by a scrubber. EPA reached the opposite conclusion, stating that FGD and DSI "do not present any significant or unusual environmental impacts." Moreover, the State ignores that the cost to dispose of scrubber wastes is included in the cost model for a scrubber, as EPA points out. Allowing Nelson to emit 0. 6 lb/MMBtu of SO_2 is a ten-fold increase in the SO_2 emissions rate relative to the 0. 06 lb/MMBtu which a scrubber can achieve.[76] In the name of considering environmental impacts, the State chose the option that will lead to the *greatest amount of air pollution*. This is not rational decision making, it runs counter to the statutory mandate for the haze program, and it is not approvable. We are unaware of any similar state or EPA decision for a haze SIP. EPA has cited no precedent for approving a State's selection of the least-effective pollution control on the basis that more effective pollution controls allegedly are worse for the environment.

In addition, the State fails to consider that a dry scrubber generates far less waste than a wet scrubber. And scrubber wastewater can be treated with available technologies to dramatically reduce environmental impacts. *See* 80 FR 67838 (Nov. 3, 2015). The State's rejection of a scrubber because of the auxiliary power needed to run a scrubber is without merit. All of the cost calculations for a scrubber reviewed by the State—both EPA's and Entergy's—included the energy cost to run the scrubber. Thus, the energy cost is not a separate consideration, and is not a separate basis for rejecting a scrubber. Just as we are aware of no example of EPA approving the rejection of a scrubber on the basis of scrubber wastes, we are not aware of any EPA decision approving the rejection of a scrubber because of the auxiliary power costs.

Response: We disagree with the commenter's characterization of the State's consideration of the energy and non-air quality environmental impacts. The consideration of these impacts is required as part of the BART determination. LDEQ stated in the October 2017 SIP:

While additional visibility benefits may be available through the use of FGD, the

[76] See Stamper Report at 6-7, 9-10 (attached as Technical Support Document to Conservation Organizations June 18, 2017 comment letter).

> lower sulfur coal option results in visibility benefits at a lower annual cost. In addition, FGD use results in additional waste due to spent reagent and has some power demands to run the equipment. LDEQ believes, at present, that the use of lower sulfur coal presents the appropriate S02 control based on consideration of economics, energy impacts, non-air quality environmental impacts, and impacts to visibility.[77]

LDEQ did not reject additional controls solely on the basis of the non-air quality environmental impacts or energy impacts associated with those controls. LDEQ identified the impacts associated with each control level as required, noting the difference between the lower sulfur coal option and additional add-on controls. LDEQ considered all of the available information, including EPA's analysis of the associated impacts and costs, and weighed all the factors in making the BART determination for Nelson Unit 6.

Comment: EPA cannot possibly have discharged its obligation to ensure that the State's BART determination is "reasonably moored to the Act's provisions," *Alaska Dep't of Envtl. Conservation*, 540 U. S. at 485, because EPA claims it was "unable to verify any of the company's costs," 82 FR at 32298, and could review only the "general description of the modeling protocol" that Entergy used. *See* Appendix F, CAMx Modeling TSD at 30. It is axiomatic that EPA cannot approve a plan where the agency is unable to review and verify the accuracy of the analysis on which the plan is based. *See Motor Vehicle Mfrs. Ass'n of U. S. , Inc. v. State Farm Mut. Auto. Ins. Co.* , 463 U. S. 29, 43 (1983) ("[T]he agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made. '") (emphasis added) (quoting *Burlington Truck Lines v. United States*, 371 U. S. 156, 168 (1962)).

Response: We disagree with the comment. While we noted in our proposal that we were unable to verify the company's costs and that we reviewed a general description of Entergy's modeling protocol, we also noted that we conducted our own independent cost analysis and CAMx modeling.[78] EPA's cost and visibility analyses were included by LDEQ as a part of its October 2017

[77] October 2017 LA RH SIP submission.
[78] 82 FR 32294 (August 14, 2017).

SIP submission (Appendix F) and were included in the information considered by the State in making its BART determination. LDEQ considered all the information contained in the SIP submittal, including information submitted by Entergy, EPA's review of that information, and EPA's additional analyses. As a result, LDEQ had adequate information upon which to base its determination.[79]

Comment: Neither the State nor EPA offered a rational basis for rejecting a scrubber and EPA did not offer a rational basis for approving the State's decision. The State did not explain why it rejected a control with cost-effectiveness and visibility improvement values which so many other states, and EPA, have found reasonable for BART determinations. And EPA has not explained how it can approve the rejection of a scrubber when the cost-effectiveness and visibility improvement values are within the range that EPA has found reasonable in so many other haze rulemakings. *See generally* 42 U. S. C. § 7410(k)(3) (requiring EPA to review each SIP submission to ensure compliance with the Act), *id.* § 7410(l) (barring EPA approval of a SIP submission that interferes with any applicable requirement of the Act); *Oklahoma v. EPA*, 723 F. 3d at 1208-09 (holding that "the statute mandates that the EPA must ensure SIPs comply with the statute" and upholding EPA's disapproval of the Oklahoma regional haze plan because Oklahoma "failed to follow the [BART] guidelines").

EPA cannot approve the State's plan because EPA concluded that the analysis the State relied on is riddled with errors; approving such a plan is arbitrary and capricious**.** EPA identified multiple errors in Entergy's cost and visibility analyses—errors which Entergy and the State refused to correct, e. g., escalation during construction and owner's costs, a contingency of 25 %, and the inability to verify any of the company's costs. EPA's submission of its own analyses to the State does not cure this defect since EPA's analysis is limited by the same lack of access to data from

[79] In response to comments from the Conservation Groups and inquiries from EPA regarding its cost analysis, Entergy submitted a Technical Memorandum clarifying the approach used in its cost analysis. See, Technical Memorandum from Ken Snell, Dated December 6, 2017, Subject: Nelson Unit 6 BART Cost Estimates. Entergy stated although the specific details in the cost estimate are generated from proprietary databases, EPA could do a meaningful review of the cost estimates based on the information included in the submitted analysis.

which the State's analysis suffers.

Response: As explained in previous responses, EPA reviewed the State's entire submission, including any attached appendices and supporting documentation, and any publicly available information as a whole in determining whether the State's submission is approvable. Though we identified errors in Entergy's cost and visibility analyses, EPA conducted its own cost and visibility analyses in accordance with the applicable regulations and guidelines. EPA's cost and visibility analyses are part of the SIP submission (Appendix F) and were included in the information considered by the State in making its BART determination. We do not believe that our modeling or cost analysis were limited by the lack of access to data. Our cost estimates rely on algorithms designed to use readily available data[80] that provide reasonable estimates of costs. Furthermore, we had all the data necessary to make estimates of visibility impairment. We only noted that there was limited access to documentation to explain the difference between our cost estimates and those provided by Entergy. As stated previously, LDEQ considered all the information contained in the SIP submittal. LDEQ reviewed this information as is evidenced by its SIP submission. LDEQ states, "LDEQ has weighed the five factors and after a review of both Entergy's and EPA's information…"[81] This indicates that the State reviewed the information it received from both Entergy and the EPA, and thus had adequate information upon which to base its determination. After reviewing the relevant information contained in LDEQ's SIP, we determined that the State's SIP meets the requirements of the Act and the applicable regulations and guidance.

Comment: Though EPA stated that the State "weighed the statutory factors,"[82] there is no evidence that the State weighed two of the statutory factors, the remaining useful life of the source and the existing controls in use at the source. BART must be based on a consideration of the five factors. The State's BART analysis appears in a single paragraph, which does not mention two of the five factors: the "remaining useful life of the source" and "existing pollution controls in use at the

[80] See Cost Analysis in LA RH SIP, October 2017, Appendix F.
[81] LA RH SIP Revision Addendum, June 19, 2017, p. 6.
[82] 82 FR at 32300 (July 13, 2017).

source," 42 U. S. C. § 7491(g)(2). The State's failure to consider existing pollution controls for SO_2 emissions is significant, given that the State treats its BART determination of low-sulfur coal as requiring Nelson to do something new, despite evidence that Nelson is already using low-sulfur coal. As EPA acknowledged, the RS Nelson Plant has already been burning low sulfur Powder River Basin coal for many years. [83]

Similarly, it is important that states consider the "remaining useful life" factor. Cost calculations typically assume that costs will be recovered over the remaining useful life of a source. As a result, the remaining useful life is a key variable in cost analyses.

Whether Entergy or EPA considered these two factors is irrelevant legally, because the statute requires the State, not the plant owner, to determine BART. There is no evidence in the SIP that the State actually considered and relied on any analysis which Entergy or EPA may have conducted of the remaining useful life and existing pollution controls in use at the source. In particular, there is no passage in the State's SIP narrative in which the State discusses how it considered and weighed the remaining useful life and existing pollution controls in use at Nelson. [84] EPA cannot approve a BART determination which fails to consider two factors, the remaining useful life and the existing controls in use at the source, which the statute requires states to consider.

Response: As explained in previous responses above, EPA reviews the final SIP document and any accompanying supplementary information or appendices that have been submitted by the State. In the October 2017 LA RH SIP at Appendix D, Entergy's BART analysis for Nelson unit 6 includes a description of existing control equipment at the unit[85] and a statement that remaining useful life does not impact the cost analysis. [86] In our analysis, we conducted a five-factor analysis and addressed both remaining useful life and the existing controls in use at the source. As discussed in our draft Technical Support Document provided to LDEQ and included in its October 2017 LA

[83] *See* EPA Technical Assistance Document at 6-7. *See also* EPA TSD at 9.
[84] By contrast, the State expressly considers and weighs annual costs, visibility improvement, and environmental impacts of controls. See LA RH SIP, October 2017, p. 6.
[85] See Page 1-1 of Entergy Nelson five-factor BART analysis, November 9, 2015, revised April 15, 2016. Available in Appendix D of the LA RH SIP.
[86] See Page 4-4 of Entergy Nelson five-factor BART analysis, November 9, 2015, revised April 15, 2016. Available in Appendix D of the LA RH SIP.

RH SIP, Appendix F, in evaluating the cost of switching to lower sulfur coal to meet an emission limit of 0. 6 lb/MMBtu, we began by noting that Entergy has purchased both higher and lower sulfur coals. To account for the existing use of low sulfur coal, we applied the premium[87] associated with purchasing only low sulfur coal to the fraction of higher sulfur coal purchased. In making their decision, the State evaluated all available information regarding the remaining useful life of the source and the existing controls in use at the source. LDEQ submitted the analyses conducted by EPA and Entergy as appendices to the LA RH SIP. As such, we took all the information contained in the LA RH SIP into account in making our determination to approve the State's SIP submittal.

Comment: The State unreasonably and unlawfully failed to consider the cost-effectiveness of controls in violation of the BART Guidelines. The State stated it selected low-sulfur coal over a scrubber even though additional visibility benefits may be achievable with the use of FGD because the lower sulfur coal option results in visibility benefits at a lower annual cost. The State's BART analysis violates the BART Guidelines by focusing the cost analysis solely on annual costs and by failing to consider cost-effectiveness at all. EPA's proposed approval fails to mention the applicable portions of EPA's own BART Guidelines and to discuss how the State's analysis is inconsistent with the Guidelines. In keeping with the statute, the regulations indicate that it is the total generating capacity of the plant—not any particular unit—that determines whether the BART Guidelines are mandatory.

Nelson began operation in 1960. [88] Nelson Units 1 and 2 each have a nameplate capacity of approximately 114 MW, Unit 3 is 163 MW, Unit 4 is 592 MW, and Unit 6 is 615 MW. Although Units 1 and 2 have been spun off into a separate permit, the current Title V permit provides that the "facility capacity" is 1,204 MW. [89] Given that Nelson's total capacity exceeds 750 MW, BART for

[87] We estimate the low sulfur coal premium based on 2016 coal purchases for coals above and below 0. 6 lb/MMBtu. See Nelson TAD in Appendix F of the LA RH SIP, October 2016, Section 3. 2. 9.

[88] Louisiana Department of Environmental Quality, Statement of Basis, Proposed Part 70 Operating Permit 0520-00014-V2, Roy S. Nelson Electric Generating Plant, Entergy Gulf States Louisiana, L. L. C. Westlake, Calcasieu Parish, Louisiana, Agency Interest (AI) No. 19588, Activity No. PER20100003 (Oct. 17, 2012), Attached as Exhibit 7 to Sierra Club's August 14, 2017 comment letter.

[89] Louisiana Department of Environmental Quality, Part 70 Operating Permit 0520-00014-V2, Roy S. Nelson Electric Generating Plant, Entergy Gulf States Louisiana, L. L. C. Westlake, Calcasieu Parish, Louisiana, Agency Interest (AI) No. 19588, Activity No. PER20100003 (issued Oct. 4, 2013). By letters dated May 1, 2015, and August 24, 2015,

Nelson must be determined in accordance with the BART Guidelines. [90]

The BART Guidelines recommend the use of cost-effectiveness "to assess the potential for achieving an objective in the most economical way." The BART Guidelines specifically caution states not to consider annual costs without also considering cost-effectiveness. The SO_2 BART determination violates the requirements in the BART Guidelines to consider cost-effectiveness of controls. Given that Nelson Unit 6 is located at a plant with a total generating capacity greater than 750 MW, the State is required to determine BART pursuant to the BART Guidelines—which the State failed to do, by failing to consider the cost-effectiveness of controls. The State should have followed the BART Guidelines and considered the cost-effectiveness of controls, which weigh in favor of selecting a scrubber as BART.

It is both irrational and contrary to the purpose of the haze provisions for the State to reject a very cost-effective control, a scrubber, on the ground that the annual cost is higher than the least-effective control, low-sulfur coal. If a state were permitted to reject more effective controls solely on the basis that annual costs are higher, then more effective controls would rarely, if ever, be required. If the State's rationale were approved by EPA, it would be difficult, if not impossible, to require the very pollution controls necessary to achieve the statutory mandate to eliminate haze pollution. The State's rationale must be rejected because it is incompatible with achieving the goal of the Clean Air Act to ultimately eliminate all human-caused haze pollution.

Response: We agree with the comment that the total capacity of the Nelson facility exceeds 750 MW and that the State was therefore required to determine BART pursuant to the BART Guidelines for this source. However, we disagree that LDEQ failed to consider cost-effectiveness.

Entergy confirmed that Units 4 and 6 are BART eligible. LA059-006-_4_4_Entergy Nelson_6_BART_Survey. pdf; LA059-006-_4_7Ltr_2015-08-24_from_FHyman_to_VAucoin_re_N4-WG3-LG3_Aux_Boilers_BART_eligibility. pdf. Attached as Exhibit 8 to Sierra Club's August 14, 2017 comment letter.

[90] To determine whether the total capacity exceeds 750 MW, EPA's policy is to add the generating capacity of all the units at a power plant, so long as one of the units is subject to BART. *See, e. g.,* 77 FR 12770, 12778 (Mar. 2, 2012) ("[I]t is reasonable to interpret the RHR to mean that if the plant capacity is greater than 750 MW at the time the BART determination is made by the State . . . then the power plant is a facility 'having a total generating capacity in excess of 750 [MW]' and any unit at the plant greater than 200 MW is subject to presumptive BART. "); 76 FR 58570, 58596 (Sept. 21, 2011) (concluding that the BART Guidelines are mandatory for Milton R. Young Station because Unit 1 is 277 MW and Unit 2 is 517 MW, which sums to 794 MW).

LDEQ included estimates of annual costs, cost-effectiveness, and incremental costs for the control options for Nelson Unit 6 in Appendices D and F of its SIP revision. LDEQ considered all information in the record, including all cost information provided by the EPA and Entergy. LDEQ weighed the five factors and concluded that "the use of lower sulfur coal presents the appropriate SO_2 control based on consideration of economics, energy impacts, non-air quality environmental impacts, and impacts to visibility. " EPA has reviewed all the information in the SIP submittal and finds that the state's determination is approvable.

Comment: EPA's proposed approval of Entergy's 2012-2016 emissions baseline for the purposes of evaluating costs is arbitrary and contrary to law. As an initial matter, the cost analyses for other Louisiana BART sources, including Little Gypsy Unit 2, the Waterford units, and the Ninemile units, relied on a 2000-2004 emission baseline for the purposes of determining the cost effectiveness of controls. Neither Entergy nor EPA provide any reasoned explanation for treating Nelson differently. Instead, Entergy relied on an unenforceable, more recent operational profile in its BART analysis. Indeed, Entergy's BART analysis (and its conclusion that no additional controls are cost-effective) is based on baseline emissions from 2012-2014, during which Nelson 6 happened to be operating far less frequently than in earlier years. [91] This is important because using a 2000-2004 baseline, a scrubber is even more cost-effective. The commenter estimates that a dry scrubber would cost $1,712 to $1,750 per ton and a wet scrubber would cost $1,728 to $1,748 using a 2000-2004 baseline. EPA's proposed approval of Entergy's emission baseline skews the cost analysis.

EPA has repeatedly concluded that states should determine BART using emissions data from 2000-2004. If projected operations will differ from past practice, and the state's BART determination is based on that emission baseline, the state "must make these parameters or assumptions into enforceable limitations" in the SIP itself. *See* 40 CFR part 51, App'x. Y § (IV)(D)(4)(d) LDEQ's proposed SIP contains no such enforceable limitation requiring Entergy to comply with 2012-2014 emissions, and is therefore unapprovable.

[91] *See* Dec. 30 Comments, Ex. C, Entergy Nelson Emissions and Hours of Operation from 2000 through 2016, available at https://ampd. epa. gov/ampd/, attached as Exhibit 9.

Response: We disagree with the comment regarding the use of baseline emissions in estimating annual costs and cost-effectiveness. Annual emissions used in evaluating cost effectiveness of controls are based on annual emissions representative of future anticipated annual emissions. [92] The BART guidelines state that in the absence of enforceable limitations, baseline emissions should be based upon continuation of past practice. [93] In many cases, in order to represent future anticipated annual emissions from the source EPA has used actual annual emissions from the most recent five-year period as being consistent with past practice for the purposes of the cost evaluation. EPA typically uses the most recent five years of annual emissions, eliminating the maximum and minimum annual emissions when evaluating cost impacts. For Nelson Unit 6, the cost analysis[94] developed by EPA and included in the October 2017 SIP submittal in appendix F, utilized a baseline based on average emissions from 2011 through 2015, excluding the maximum and minimum values. This analysis was later updated to using 2012-2016, excluding the maximum and minimum values. As stated in the Nelson Technical Assistance Document (Nelson TAD),[95] EPA concluded that using the average annual emissions over the most recent five years, excluding the maximum and minimum years, was a reasonable compromise between simply selecting the maximum value from 2011 – 2015, or using the average of the values from 2011 – 2015. We discuss our review of the Entergy cost analysis for Nelson Unit 6 elsewhere in the response to comment section. The commenter is incorrect concerning the baseline used for cost analysis for Little Gypsy Unit 2, the Waterford units, and the Ninemile units. For the Waterford units, we utilized 2015 fuel oil prices and determined cost-effectiveness based on costs and tons reduced per 1,000 barrels of fuel burned. We also identified the highest annual emissions during the 2011-2015 period as part of our review of the BART determination for this source. For Little Gypsy and Ninemile, consideration of

[92] 40 CFR part 51 app. Y § IV. D. 4. d. "The baseline emissions rate should represent a realistic depiction of anticipated annual emissions for the source."
[93] 40 CFR part 51 app. Y § IV. D. 4. d.
[94] "Nelson Technical Assistance Document" (Nelson TAD) in the Louisiana State Implementation Plan for the Entergy Nelson Facility, June 2017, Available in Appendix F of the October 2017 LA RH SIP submittal.
[95] See Technical Assistance Document for the Louisiana State Implementation Plan for the Entergy Nelson Facility, June 2017, Available in Appendix F of the October 2017 LA RH SIP submittal.

cost-effectiveness of controls was not necessary as the sources adopted the most stringent control level available. In addition, we note there are additional differences besides the choice of baseline emissions that we disagree with that resulted in lower estimated costs by the commenter than those estimated by EPA. [96] We discuss the inputs we selected in our cost evaluation in the Nelson TSD.

Comment: The SIP is not approvable because it unlawfully fails to require at least presumptive BART for SO_2 emissions as required by the BART Guidelines. For SO_2, presumptive BART is an emission limit of 0. 15 lb/MMBtu. 40 CFR part 51, App. Y § (IV)(E)(4) ("You must require 750 MW power plants to meet specific control levels for SO_2 of either 95 percent control or 0. 15 lbs/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."). The State's BART determination for SO_2 is an emission limit of 0. 6 lb/MMBtu, which achieves nowhere near a 95% reduction in SO_2 emissions and is four times higher than the presumptive BART rate of 0. 15 lb/MMBtu. The State's failure to require at least the minimum emissions reductions mandated by the BART Guidelines violates the Clean Air Act requirement that BART be determined "pursuant to" the BART Guidelines for plants larger than 750 MW, 42 U. S. C. § 7491(b)(2). EPA cannot approve a SIP which violates the Clean Air Act, and thus EPA must disapprove the SO_2 BART determination Nelson Unit 6.

Response: We disagree with the comment that the State must require at least a level of control consistent with the presumptive limit for SO_2 of either 95 percent control or 0. 15 lbs/MMBtu. As identified by the commenter, the BART Guidelines state that the presumptive limit applies "unless you determine that an alternative control level is justified based on a careful consideration of the statutory factors. " LDEQ considered all information in the record, including all estimates of visibility benefits, annual costs, cost-effectiveness, and incremental cost provided by EPA and Entergy. The state weighed the factors and concluded that "the use of lower sulfur coal presents the appropriate SO_2 control based on consideration of economics, energy impacts, non-air

[96] For example, gross heat rate and SO_2 rate

quality environmental impacts, and impacts to visibility. " EPA has reviewed all the information in the SIP submittal and finds that the state's determination meets the applicable requirements and therefore is approvable.

Comment: EPA's CALPUFF modeling shows that a scrubber would improve visibility by more than 1 deciview at Caney Creek, and slightly less than 1 deciview at Breton. Draft SIP, Appendix F at 41, Table 4-8. EPA's CAMx modeling indicated that a scrubber would improve visibility by 0. 831 deciviews at Caney Creek and 0. 663 deciviews at Upper Buffalo. 82 FR at 32299-300. These are significant amounts of visibility improvement, as indicated by the BART Guidelines instructions on determining which sources are subject to BART; the Guidelines state that a source which causes 1 deciview of impairment "causes" visibility impairment, and a source which leads to 0. 5 deciviews of impairment "contributes" to impairment, 40 CFR part 51, App. Y § (III)(A)(1). This visibility improvement is well within the range of values for previous final BART determinations. In addition to being comparable to other BART determinations, the visibility improvement from a new scrubber is necessary as BART to move both affected Class I areas closer to natural visibility conditions. [97]

EPA's cost and visibility analyses only undermine the State's proposed BART determination, by demonstrating that the cost and visibility improvement from a scrubber are within the range of values which states and EPA routinely find to be reasonable, and on a case-specific basis, warranted as BART based on a five-factor analysis. EPA's own analysis concluded that the average cost-effectiveness is $2,706 per ton for SDA and $2,743 per ton for wet FGD. 82 FR at 32299. As the chart below indicates, these values are well within the range of average cost-effectiveness values for final BART determinations. [98] EPA has not explained how it can approve the rejection of a scrubber

[97] The Cost Effectiveness spreadsheet and related documents used to develop the following charts are attached as Exhibit 5. "At a single Class I area" refers to either the benefit at the most impacted Class I area or the highest benefit at any single Class I area (these are often but not always the same Class I area).

[98] See also Dec. 30 Comments, Ex. D Letter from Guy Donaldson to Entergy Services (May 20, 2015) (describing deficiencies in modeling); Letter from Kelly McQueen to Guy Donaldson (Apr. 15, 2016), EPA Doc. No. LA059-006-_4_11_Reply_to_EPA_on_LA_BART_Issues_Final_4-15-16. pdf (purporting to address EPA concerns about modeling and cost methodology, but declining to correct errors and deficiencies).

when the cost-effectiveness and visibility improvement values are within the range that EPA has found reasonable in so many other haze rulemakings.

The commenter estimates the costs of a dry scrubber would cost $2,272 to $2,335 per ton and a wet scrubber would cost $2,328 to $2,361 per ton. [99] And while the commenter states that it does not believe that incremental cost-effectiveness[100] should be a determining factor, it notes that EPA found that the incremental cost-effectiveness of a dry scrubber relative to DSI is $1,671. Both the average and incremental cost-effectiveness of a scrubber are well-within the range of cost-effectiveness values that states and EPA have found reasonable. *See* "Cost Effectiveness and Visibility in BART Determinations" spreadsheet (showing that many final BART determinations have an average cost-effectiveness exceeding $2,700 per ton of SO_2 removed), Attached as Exhibit 5 ("Cost Effectiveness Spreadsheet"). Given the degree to which Nelson contributes to impairment at Class I areas, and the statutory mandate to restore natural conditions to these skies, the cost of a scrubber is justified as BART for this facility.

Response: The charts provided by the commenter give the ranges of cost-effectiveness and visibility benefits of controls identified by EPA and states in previous BART determinations for both NOx and SO_2. However, these charts do not provide information on the visibility benefits, costs of controls, or incremental costs and benefits for technologies that were rejected in each of these determinations or in other situations where no additional controls were required to meet BART. Each BART determination is dependent on the specific situation and requires consideration of a number of factors including, the characteristics of the fuel burned at the source, the existing controls, the control efficiency of available control technologies, the remaining useful life, the costs and incremental costs of controls and the anticipated visibility benefit of each potential control. The Regional Haze Rule and BART Guidelines do not require the state to select as BART a more effective technology merely because it has visibility benefits or cost-effectiveness that fall within the range of previous cases, nor

[99] See Stamper Report (attached as Technical Support Document to Conservation Organizations June 18, 2017 comment letter).
[100] EPA defines "incremental cost-effectiveness" as the difference between the cost-effectiveness of one pollution control and the cost-effectiveness of the next-most-effective pollution control. See 40 CFR part 51, App. Y § (IV)(D)(4)(E).

do they prohibit the state from choosing as BART a less effective technology measure that falls outside the range of previous cases. The state must consider all 5 statutory factors.

The Clean Air Act gave EPA the power to identify pollutants and set air quality standards. Congress gave states "the primary responsibility for implementing those standards." *Luminant Generation Co. v. EPA*, 675 F. 3d 917, 921 (5th Cir. 2012). (internal quotation marks omitted); *see* 42 U. S. C. §7407(a) ("Each State shall have the primary responsibility for assuring air quality within [its] entire geographic area."); *id.* § 7401(a)(3) ("[A]ir pollution prevention . . . is the primary responsibility of States and local governments.") The states have "wide discretion" in formulating SIPs. *Union Elec. Co. v. EPA*, 427 U. S. 246, 250 (1976). The Clean Air Act provides that EPA "shall approve" a SIP "if it meets the applicable requirements of this chapter." 42 U. S. C. § 7410(k)(3). EPA's regulations under the CAA "do not require uniformity between . . . actions in all circumstances and instead 'allow for some variation' in actions taken in different regions." 81 FR at 326 (quoting *Amendments to Regional Consistency Requirements*, 80 FR 50250, at 50258 (Aug. 19, 2015)). Some variation is to be expected because SIP actions are highly fact-dependent. Though we identified errors in Entergy's cost and visibility analyses, EPA conducted its own cost and visibility analyses in accordance with the applicable regulations and guidelines. EPA's cost and visibility analyses are part of the SIP submission (Appendix F) and were included in the information considered by the State in making their BART determination. LDEQ considered all information in the record, including all estimates of visibility benefits, annual costs, cost-effectiveness, and incremental cost provided by EPA and Entergy. The state weighed the factors considering all available information included in the SIP, and concluded that "the use of lower sulfur coal presents the appropriate SO_2 control based on consideration of economics, energy impacts, non-air quality environmental impacts, and impacts to visibility." EPA has reviewed all the information in the SIP submittal and finds that the state's determination is approvable.

Comment: EPA arbitrarily ignores the impact that errors in the cost and modeling analyses relied on by the State had on the State's BART determination. The State rejected a scrubber in favor

of low-sulfur cost based on comparing the relative costs and visibility benefits of the two controls. . Yet EPA found that the factors on which the State based its decision, cost and visibility benefits, are thoroughly inaccurate. EPA failed to explain how the Entergy analyses the State relied on can be incorrect, but the State's ultimate BART determination can be approvable.

Response: As explained in previous responses, EPA reviewed the State's entire submission, including any attached appendices and supporting documentation in determining whether the State's submission is approvable. EPA conducted its own cost and visibility analyses and submitted these analyses to the State for review in its determination. LDEQ reviewed this information as is evidenced by its SIP submission. LDEQ states, "LDEQ has weighed the five factors and after a review of both Entergy's and EPA's information…" This indicates that the State reviewed the information it received from both Entergy and the EPA in making its determination. After reviewing the relevant information contained in the State's SIP, we determined that the State's SIP is approvable.

Comment: The record indicates that EPA Region 6 has, on multiple occasions, expressed concerns with Entergy's modeling and cost analyses, as well as the Company's proposed baseline emission rates. [101] Those documents—including Entergy's October 14, 2016 analysis, EPA's underlying March 16, 2016 *Preliminary Review Response* letter explaining its concerns with Entergy's modeling methodology, and any EPA response to Entergy's letter—do not appear to be included in the administrative record. Moreover, Louisiana's final BART analysis for Nelson does not address, let alone correct, many of the flaws EPA identified. As a result, the public has been deprived of information relevant to the legal and factual basis for Entergy's BART analysis, and is therefore unable to comment meaningfully on EPA's proposed approval of the BART analysis.

Response: The letters referenced by the commenter were made available by LDEQ on its website during its comment period. The final February 2017 SIP EPA received from LDEQ did not

[101] See, e. g. , Trinity Consultants, Inc. , CAMx Modeling Report Prepared for Entergy Services (Oct. 14, 2016), available at http://edms. deq. louisiana. gov, LDEQ AI No. 174156, Doc. Nos. 10369532_6of7. pdf and 10369532_7of7. pdf (describing EPA critique of CAMx modeling platform, but excluding underlying letter), attached as Exhibit 4; see also Dec. 30 Comments, Ex. D, Letter from EPA Air Planning Chief Guy Donaldson to Firdina Hyman, Response to Deviations Request for Best Available Retrofit Applicability Screening Modeling (May 20, 2015); Letter from Kelly

contain these letters as attachments, so they were inadvertently left out of the EPA docket, but they have since been placed in the docket. We note that the commenter cited to these letters in its comment, indicating that the commenter had the opportunity to review them. We also note that Entergy's response letter was included in the docket. This response letter included the questions raised by EPA in its initial letter verbatim. [102] EPA did not rely on the Entergy's CAMx analysis in the October 2017 LA RH SIP, Appendix D, which is referred to by the commenter for our proposed approval of the State's SIP. While we found Entergy's modeling and methodology to be flawed, we also conducted our own CAMx modeling which LDEQ included in its SIP submission as an appendix. [103]

E. Legal

Comment: LDEQ stated it disagreed with EPA's use of the phrase "adopted and incorporated" when referring to the analysis provided to LDEQ by EPA. It stated that it places all documents and information submitted to it in connection with the development of the SIP in an administrative record. Such placement in the record does not indicate that LDEQ agrees with or has adopted positions, conclusions, or decisions, nor has incorporated them into the SIP revisions submitted to EPA. The final SIP document and any enforceable conditions included therein encompass the final decision by LDEQ.

Response: EPA recognizes that LDEQ independently reached the final determination presented in its Nelson RH SIP. We did not intend to imply that we substituted our own judgment for LDEQ's. When reviewing a SIP to determine whether it meets the applicable statutory and regulatory requirements, EPA considers the final SIP document as well as any accompanying supporting documents or appendices that have been submitted by the State. Reviewing the supporting documents and appendices assists EPA in determining how the State reached its final conclusion, and thus, helps determine whether the final conclusion meets the applicable statutory and

[102] Letter dated April 15, 2016, from Kelly McQueen to Guy Donaldson Re Supplement to BART-Related Submittals Provided in Response to CAA Section 114(a) Information Requests for Entergy Louisiana, Entergy New Orleans, and Entergy Gulf States.
[103] October 2017 LA RH SIP, Appendix F.

regulatory requirements. We also note that in the SIP revision submitted to EPA in October 2017, LDEQ stated that the "…SIP is being revised to include the EPA information. "[104] This indicates that LDEQ considered the information provided by EPA when making its determination. It is thus appropriate for EPA to similarly rely on this information in our final rule.

Comment: LDEQ disagreed with the solicitation of comments on Entergy's cost per ton figure by EPA. LDEQ stated that it conducted its own public comment period and any comments submitted on this point are procedurally improper.

Response: While it is correct that LDEQ conducted its own public comment period, this does not relieve EPA of its duty under the Administrative Procedure Act to provide the public with notice of its proposed rulemaking and an opportunity to comment.

Comment: After finding that the Entergy analysis on which the State relies is unverifiable and unsupported by the facts before the agency—which demonstrate that a new scrubber would be both cost effective and significantly improve visibility—EPA inexplicably proposed to approve the State's BART determination. EPA's proposal is the quintessential example of an agency decision that is inconsistent with the evidence before the agency, and it would be arbitrary and capricious for EPA to finalize its proposal. *See North Dakota v. EPA*, 730 F. 3d 750, 761 (8th Cir. 2013) (*citing Ala. Dep't of Envtl. Conservation v EPA*, 540 U. S. 461, 485, 490 (2004)) (EPA must ensure that the state's regional haze plan is "reasonably moored to the Act's provisions" and based on "reasoned analysis" of the facts).

Response: In our proposal we noted that we were unable to verify the cost analysis submitted by Entergy because it was based on a propriety database. [105] However, as stated in our proposed rule, we developed our own BART analysis, including a control cost analysis, which was reviewed by LDEQ and submitted as an appendix to LDEQ's SIP submission[106] and considered in LDEQ's weighing of the five factors in reaching its determination regarding controls at Nelson. Thus, LDEQ

[104] Louisiana Regional Haze State Implementation Plan: EGU BART Analysis, June 19, 2017, p. 3.
[105] 82 FR 32294, 32298 (July 13, 2017).
[106] *Id.*

included in its SIP and considered information adequate to provide a basis for its decision. As stated in a previous response, EPA reviews all information submitted by the State along with any other relevant publicly available information in determining whether its SIP submission is approvable, including any appendices or other supporting documentation.

Comment: The State also failed to consult with the Federal Land Managers regarding the proposed BART determination for Nelson Unit 6. This violates the statutory and regulatory requirements that each state consult with the Federal Land Managers prior to holding a public hearing on the SIP and that the State include in the public notice a summary of the Federal Land Managers' recommendations. EPA must disapprove the SIP submission based on the State's violation of the BART Guidelines and the consultation requirements. "Before holding the public hearing on the proposed revision of an applicable implementation plan to meet the requirements of this section, the State . . . shall consult in person with the appropriate Federal land manager or managers and shall include a summary of the conclusions and recommendations of the Federal land managers in the notice to the public." 42 U. S. C. § 7491(d). EPA may not approve a plan which violates applicable Clean Air Act requirements, and therefore EPA must disapprove the plan based solely on the State's violation of the consultation requirements.

Response: As evidenced by the letter sent to LDEQ by the Fish and Wildlife Service,[107] LDEQ consulted with the appropriate Federal Land Mangers regarding its RH SIP submission. In its general comments, the Fish and Wildlife Service stated that more information was needed to determine the validity of LDEQ's conclusions and recommended that LDEQ include the information it relied upon in reaching its decision. In reference to Nelson, the Fish and Wildlife Service stated that it was aware that more information was available and that it would be interested in reviewing this information. Subsequently, LDEQ submitted an addendum to its SIP to include the analyses conducted by EPA. LDEQ provided the updated information, as requested, to the Fish and Wildlife Service via e-mail on July 12, 2017.[108]

[107] *See*, Letter from the U. S. Department of Interior Fish and Wildlife Service to Vivian Aucoin, December 14, 2016.
[108] Appendix A of the October 2017 Louisiana Regional Haze SIP.

Comment: The only outcome consistent with EPA's findings in the record is for EPA to disapprove the State's analysis and issue a federal implementation plan for SO_2 BART setting emission limits consistent with the operation of a new scrubber.

Response: As explained in previous responses, EPA reviewed the State's entire submission, including any attached appendices and supporting documentation, as a whole in determining whether the State's submission is approvable. After reviewing the relevant information, we determined that the State's SIP is approvable. [109]

Comment: The State expressly notes that in reaching its decision, it relied on Entergy's analysis. [110] EPA has an independent obligation to ensure that the State's analysis complies with the Clean Air Act. *See Ala. Dep't of Envtl. Conservation v. EPA*, 540 U. S. at 485 (upholding EPA's interpretation of the Clean Air Act as authorizing EPA to "review permits to ensure that a State's BACT determination is reasonably moored to the Act's provisions"); *North Dakota v. EPA*, 730 F. 3d at 761 (extending the holding of *Alaska Dep't of Envtl. Conservation* to EPA's role under the haze provisions of the Clean Air Act); *Oklahoma v. EPA*, 723 F. 3d 1201, 1208 (10th Cir. 2013) ("Given that the statute mandates that the EPA must ensure SIPs comply with the statute, we fail to see how the EPA would be without the authority to review BART determinations for compliance with the guidelines. ")

Response: In its SIP, LDEQ states, "LDEQ has weighed the five factors and after a review of both Entergy's and EPA's information…"[111] This indicates that the State reviewed all the information it received from both Entergy and the EPA. As stated in a previous response, LDEQ indicated in its SIP that it was revising its previous submission to include the additional information provided by EPA. This further indicates that the State considered this information in its determination. While we did note the errors that were present in Entergy's analysis, we also stated that we conducted our own analysis in accordance with the applicable regulations and provisions of the Act, and provided this

[109] See our proposed rule for our full analysis. 82 FR 32294 (July 13, 2017).
[110] LA RH SIP October 2017 at p. 6.
[111] LA RH SIP Revision Addendum, June 19, 2017, p. 6.

information to LDEQ. [112] With the inclusion of the information from EPA, LDEQ had adequate information to make its decision.

Comment: EPA's proposal violates the procedural requirement of the Clean Air Act that EPA place in the public rulemaking docket the data on which the proposed rule relies. The Act requires that a proposed rule include a summary of the "factual data on which the proposed rule is based," 42 U. S. C. § 7607(d)(3)(A), and such "data . . . on which the proposed rule relies shall be included in the docket on the date of publication of the proposed rule." *Id.* § 7607(d)(3). EPA proposed to approve the State's BART determination, which relies on Entergy's BART analyses. Therefore, EPA's proposed rule also relies on Entergy's BART analyses, yet factual data from Entergy's BART analyses are not included in the docket, namely, the proprietary database for calculating scrubber costs, 82 FR at 32298, and "model inputs, such as emissions or stack parameters" and "worksheets utilized for post-processing, or any of the actual CAMx modeling files. " Appendix F, CAMx Modeling TSD at 30. By failing to include this data in the rulemaking docket, EPA has violated 42 U. S. C. § 7607(d)(3). *See Kennecott Corp. v. EPA*, 684 F. 2d 1007, 1018 (D. C. Cir. 1982) ("If that argument be factually based, the financial analyses clearly form a basis for the regulations and should properly have been included in the docket. In all events, absence of those documents, or of comparable materials showing the nature and scope of its prior practice, makes impossible any meaningful comment on the merits of EPA's assertions."). Entergy's consultant, Trinity, failed to provide fundamental information concerning its visibility modeling. "Trinity did not provide model inputs, such as emissions or stack parameters, or provide worksheets utilized for post-processing, or any of the actual CAMx modeling files so our review is limited only to general description [sic] of the modeling protocol provided in the various CAMx modeling reports provided by Entergy. " Draft SIP, Appendix F, CAMx Modeling TSD at 30.

Response: As stated in previous responses, EPA conducted its own cost and modeling analyses and submitted them to LDEQ for its consideration. LDEQ considered the information

[112] 82 FR 32294, 32298-32299 (July 13, 2017)

provided by EPA[113] as well as that provided by Entergy[114] in making its final BART determination based upon weight of evidence. LDEQ stated in its February 2017 SIP submission that it did not have the expertise with which to review the summary of the CAMx modeling analysis provided by Entergy. [115] LDEQ further stated in its June 2017 parallel processing proposed submission that it did not use the results of the CAMx modeling provided by Entergy to determine whether the units in question have satisfied the BART requirements. [116] EPA reviewed the modeling inputs, approach and the model results that were available in Entergy's submitted analysis that were part of the LDEQ's June 2017 proposal. With this information, EPA was able to determine that the modeling was not consistent with the BART guidelines and should not be relied upon. [117] Thus, the underlying information used to generate the CAMx modeling summary in Entergy's analysis is not required to be placed in the docket. [118] After reviewing the relevant information, we determined that the State's SIP is approvable. All of the information EPA relied on its determination was made available in the docket during the comment period.

F. CSAPR-Better-than-BART

Comment: Louisiana's proposal unlawfully exempts sources from installing BART controls without going through the exemption process Congress prescribed. The visibility protection provisions of the Clean Air Act include a "requirement" that certain sources "install, and operate" BART controls. 42 U. S. C. § 7491(b)(2)(A). Congress specified the standard by which sources could be exempted from the BART requirements, which is that the source is not "reasonably anticipated to cause or contribute to a significant impairment of visibility" in any Class I area. Id. § 7491(c)(1). Appropriate federal land managers must concur with any proposed exemption. Id. § 7491(c)(3). Neither EPA nor Louisiana has demonstrated that the Louisiana EGUs subject to BART

[113] LA RH SIP, October 2017, Appendix F.
[114] *Id.* at Appendix D.
[115] LA RH SIP EGU BART Analysis, February 2017, p. 16.
[116] LA RH SIP Revision Addendum, June 19, 2017, p. 5.
[117] See the CAMx Modeling TSD and the Modeling RTC for additional information
[118] We note that the summary of the CAMx modeling conducted by Entergy was included as part of LA's SIP submission and was available in the docket for review. The summary contained sufficient information for EPA to review Entergy's analysis.

meet the standards for an exemption. Nor has EPA or the state obtained the concurrence of federal land managers. Therefore, Louisiana must require source-specific BART for each power plant subject to BART.

Response: To the extent the comment is directed to the prior rules that determined and re-determined that CSAPR is better than BART and may be relied upon as an alternative to BART, we disagree that relying on CSAPR is in conflict with the CAA provision regarding exemptions from BART. In addition, the commenter's objection does not properly pertain to this action, but instead to our past action that established 40 CFR 51. 308(e)(4). We believe this comment to fall outside of the scope of our action here. To the extent the comment objects to BART alternatives generally, we also disagree. In addition, that objection does not properly pertain to this action, but instead to our past regulatory action that provided for BART alternatives.

Comment: Even if Louisiana could meet a BART statutory exemption test, the state cannot rely on CSAPR because of flaws in the rule that purport to show that CSAPR makes more reasonable progress than BART (the "Better than BART" rule). EPA's regulations purport to allow the use of an alternative program in lieu of source-specific BART only if the alternative makes "greater reasonable progress" than would BART. 40 CFR § 51. 308(e)(2). To demonstrate greater reasonable progress, a state or EPA must show that the alternative program does not cause visibility to decline in any Class I area and results in an overall improvement in visibility relative to BART at all affected Class I areas. *Id.* § 51. 308(e)(3)(i)-(ii). Here, EPA claims that its 2012 "Better than BART" rule demonstrated that CSAPR achieves greater reasonable progress than BART. *See* 77 FR 33642.

EPA compared CSAPR to BART in the Better than BART rule by using CSAPR allocations that are more stringent than now required as well as by using presumptive BART limits that are less stringent than required under the statute. [119] These assumptions tilted the scales in favor of CSAPR. It would be arbitrary and capricious for EPA to rely on such an inaccurate, faulty comparison to

[119] See 2011 Comments at 20-32

conclude that CSAPR will achieve greater reasonable progress than will BART. Even under EPA's skewed comparison, CSAPR achieves barely more visibility improvement than BART at the Breton and Caney Creek National Wilderness Areas. If EPA had modeled accurate BART limits and up-to-date CSAPR allocations, then EPA would likely find that CSAPR would lead to less visibility improvement than BART.

As explained in detail in the attached briefing regarding the still-pending litigation challenging EPA's Better than BART rule, the Better than BART rule not only fails to meet the Clean Air Act's statutory requirements for a BART exemption but also fails to account for the geographic and temporal uncertainties in emissions reductions under CSAPR. [120] We also submit and incorporate our February 28, 2011 comments and our supplemental March 27, 2012 comments on the Better than BART Rule, which are relevant to EPA's proposal to rely on CSAPR as a BART alternative.

Moreover, EPA's Better than BART determination fails to account for the inherent uncertainties in emissions reductions under CSAPR. BART is a technology that must be installed and operated year-round, and a corresponding emission limit that must also be met year-round. BART emissions limits must be met on a "*continuous basis.*" *See* 42 U. S. C. § 7602(k) (emphasis added). By contrast, CSAPR allows trading of emissions allowances between sources, including between sources in difference states, rather than imposing a fixed emission limit for each source. EPA's assessment of CSAPR Better than BART does not and cannot assess the unknown impact of complex trading under CSAPR on the Class I areas affected by Louisiana sources.

EPA cannot lawfully rely on the Better than BART rule because the rule is based on a version of CSAPR that no longer exists. Accordingly, any conclusion that EPA made in the 2012 Better than BART rule regarding whether CSAPR achieves greater reasonable progress than BART is no longer valid. Since 2012, EPA has significantly changed the allocations and

[120] See Conservation Groups' Opening Brief, Util. Air Regulatory Grp. v. EPA, No. 12-1342, ECF Doc. 1666640 (D. C. Cir. filed Mar. 17, 2017), Exhibit 3 of Sierra Club's June 19, 2007 comment letter.

the compliance deadlines for CSAPR. Of particular relevance here, after 2012, EPA increased the total ozone season CSAPR allocations for every covered EGU in Louisiana. 77 FR 34830, 34835 (June 12, 2012). EPA also extended the compliance deadlines by three years, such that the phase 1 emissions budgets take effect in 2015-2016 and the phase 2 emissions budgets take effect in 2017 and beyond. 79 FR 71663 (Dec. 3, 2014).

In addition to EPA's increased emissions budgets and extended compliance timeline, the D. C. Circuit's decision in *EME Homer City Generation v. EPA*, 795 F. 3d 118, 130-32 (D. C. Cir. 2015), which invalidated the SO_2 or NO_X emission budgets for thirteen states, has fundamentally undermined the rationale underlying EPA's Better than BART rule. Specifically, the Court invalidated the 2014 SO_2 emission budgets for Alabama, Georgia, South Carolina, and Texas, and the 2014 NO_X emission budgets for Florida, Maryland, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Texas, Virginia, and West Virginia. *Id.* at 124. Of particular relevance here, the D. C. Circuit invalidated the CSAPR budgets for Texas, Alabama, and Georgia, which most impact visibility at Louisiana's Class I area. As explained in our initial brief in the still-pending challenge to the CSAPR Better than BART rule, the effect of *Homer City* is to pull the rug out from under EPA's BART exemption rule. This remains true even though some states have, in the wake of *Homer City*, opted in to CSAPR in lieu of issuing source-specific BART determinations. Texas, the state with the most SO_2emissions, has not opted in to CSAPR after the *Homer City* court remanded the CSAPR SO_2 budgets for Texas, and therefore the CSAPR Better than BART Rule rests on facts which no longer exist. These assumptions underpinned EPA's finding that CSAPR was Better than BART. It would be arbitrary and capricious for EPA to now rely on the same assumptions, a blatantly inaccurate, outdated, faulty comparison to conclude that CSAPR will achieve greater reasonable progress than will BART. Even under EPA's skewed comparison, CSAPR barely achieved more visibility improvement than BART at the Breton and Caney Creek National Wilderness Areas. If EPA had modeled accurate BART limits and the modified CSAPR allocations as per the D. C. Circuit decision, then EPA would likely find that CSAPR would lead to

less visibility improvement than BART.

Response: As we had proposed, our finalized determination that CSAPR participation will resolve NOx BART requirements for Louisiana EGUs is based on a separately proposed and finalized action. This comment falls outside of the scope of our action here.

Comment: Louisiana's reliance on CSAPR Better than BART is unlawful because the emissions reductions achieved by CSAPR in Louisiana are limited to five months of the year—the ozone season. Given that any controls that might be installed to meet CSAPR are not required to be operated year-round, CSAPR does nothing to protect the affected Class I areas during the remaining seven months of each year. In fact, as noted in EPA's Technical Support Document and in the National Park Service's comments on EPA's proposed disapproval of Louisiana's 2008 SIP, the adverse impacts of Louisiana NO_X emissions on visibility are highest in the winter months—*i. e.* , outside of the ozone season. Letter from Susan Johnson, Department of the Interior to Guy Donaldson, EPA Docket ID No. EPA-R06-OAR-2008-0510-0017, at 2 (Mar. 28, 2012), attached as Exhibit 4. Thus, NO_X emissions reductions that are effective only during the ozone season will not address the visibility impact due to wintertime ammonium nitrate at Breton Island or other Class I areas in neighboring states.

Even within the five-month ozone season, CSAPR allows for temporal variability such that a facility could emit at high levels within a shorter time period, creating higher than anticipated visibility impacts. Because of the high degree of variability and flexibility, power plants may exercise options that would lead to little or no emission reductions. For example, a facility in Louisiana might purchase emission credits from a source beyond the air shed of the Class I area the Louisiana source impairs. Because CSAPR requirements only pertain to the Louisiana source for a fraction of the year, that source may be even more incentivized to purchase emission credits from elsewhere than a source in a fully covered CSAPR state. Thus, without knowing which Louisiana EGUs will reduce pollutants by what amounts under CSAPR, or when they will do so, and because these emissions reductions are applicable for less than half

the year, Louisiana simply cannot know the impact of CSAPR upon Breton and other affected Class I areas.

For these reasons, reliance on CSAPR to satisfy the NO_X BART requirements is unlawful. EPA should disapprove Louisiana's reliance on CSAPR to satisfy the NO_X requirements, and issue a FIP with source-specific BART determinations for NO_X.

Response: We disagree with this comment, but also note that it should not be directed to this action but rather to the past rulemaking determination that provided BART coverage for pollutant trading under CSAPR as specified at 40 CFR 51. 308(e)(4). In any event, the argument that BART must be based on "continuous" control does not transfer to the application and operation of a BART alternative. Sources that would operate under an annual trading program that provides tons per year allocations for a unit are not necessarily applying "continuous" controls either. In fact, they are also free to operate seasonally or with intermittent use of controls so long as they operate within the allocation or purchase allowances whenever emissions may exceed that allocation. We necessarily disagree that EPA regulations would bar seasonal emissions reductions to satisfy requirements for a BART alternative.

Comment: Louisiana purports to satisfy the regulatory requirements for a BART alternative by relying on ozone-season budgets for NOx that no longer exist. To rely on CSAPR as an alternative to BART, Louisiana must demonstrate that the version of CSAPR that is now in effect, and will be in effect at the time of the final rule, makes greater reasonable progress than BART. Having failed to make that demonstration, Louisiana has not met its burden to show that CSAPR will achieve greater reasonable progress than source-specific BART. *See* 40 CFR § 51. 308(e)(2), (3). More troubling, Louisiana's reliance on the CSAPR "Better than BART" rule fails to account for, or even mention, the possibility that CSAPR or the "Better than BART" rule will not exist in any form when the SIP is finalized.

Response: As we had proposed, our finalized determination that CSAPR participation will resolve NOx BART requirements for Louisiana EGUs is based on a separately proposed and

finalized action. On September 29, 2017, we affirmed our proposed finding that the EPA's 2012 analytical demonstration remains valid and that participation in CSAPR, as it now exists, meets the Regional Haze Rule's criteria for an alternative to BART. [121] This comment falls outside of the scope of our action here.

Comment: EPA need not wait to finalize this element of the Proposed Rule until the Agency finalizes its proposed finding that CSAPR continues to be better than BART despite the removal of Texas from the annual NO_X and SO_2 trading programs. [122] EPA has performed technical analyses supporting its conclusion that the ozone season NO_X trading program remains "better than" BART despite the removal of Texas from the annual programs, which supports a final action in this rulemaking. [123] Further, this Proposed Rule provides sufficient public notice and opportunity to comment on whether CSAPR participation appropriately satisfies NOx BART requirements for Louisiana EGUs. In light of this, EPA should determine in this rulemaking that participation in CSAPR satisfies BART for NO_X emissions from Louisiana's EGUs. At the very least, EPA should finalize its proposal that CSAPR remains better than BART[124] in an expeditious manner, so that it can finalize this portion of the Proposed Rule.

Response: We have finalized our proposed rule finding that CSAPR continues to be better than BART despite the removal of Texas from the annual NO_X and SO_2 trading programs[125], so this comment is no longer relevant.

H. Long-Term Strategy and Reasonable Progress

Comment: The proposal unlawfully fails either to approve a corrected long-term strategy or to issue a federal implementation plan ("FIP") containing a proper long-term strategy as required by the CAA and federal regulations. Regardless of whether the previous version of the Regional Haze

[121] 82 FR 45481 (September 29, 2017).
[122] Proposed Rule, at 22938 (citing Proposed Rule, Interstate Transport of Fine Particulate Matter: Revision of Federal Implementation Plan Requirements for Texas, 81 FR 78954 (Nov. 10, 2016) (Proposed Texas Interstate Transport FIP)).
[123] Proposed Rule, Promulgation of Air Quality Implementation Plans; State of Texas; Regional Haze and Interstate Visibility Transport Federal Implementation Plan, 82 FR 912, 946 (Jan. 4, 2017) ("EPA's actions in response to the D. C. Circuit's remand would not adversely impact our 2012 demonstration that CSAPR is better than BART"); Proposed Texas Interstate Transport FIP at 78954.
[124] Proposed Texas Interstate Transport FIP, 81 FR 78954.
[125] 82 FR 45481 (September 29, 2017).

Rule or the Revised Regional Haze Rule governs this rulemaking, the requirements are the same: EPA is obligated to consider the four statutory factors to determine whether controls are needed at non-BART sources in order to make reasonable progress regardless of whether such measures are needed to attain reasonable progress goals or the uniform rate of progress. *See* 82 FR 3078, 3080, 3090-91 (Jan. 10, 2017); 79 FR 74818, 74828-30 (Dec. 16, 2014). EPA's proposal does not contain a reasonable progress analysis which considers these four factors for non-BART sources, such as Dolet Hills. The Revised Regional Haze Rule (82 FR 3078) explicitly brings the long-term strategy regulations in line with the statutory command to contain measures as necessary to make reasonable progress. Under the new requirements, "[t]he long-term strategy must include the enforceable emissions limitations, compliance schedules, and other measures that are necessary to make reasonable progress, as determined pursuant to (f)(2)(i) through (iv). "

EPA's proposal provides no evidence that the State submitted a revised submittal which "evaluate[d] and determine[d] the emission reductions measure that are necessary to make reasonable progress" by evaluating the four statutory factors. Nor is there any evidence of criteria the State used to evaluate which sources should be evaluated in the reasonable progress analysis, and how the four factors were considered. In comments we submitted to the State, we noted that under any reasonable criteria for screening sources, Dolet Hills should be evaluated under the long-term strategy requirements. *See* Letter from Joshua Smith, Sierra Club to Vivian Aucoin, Louisiana Department of Environmental Quality at 7-11 (Dec. 14, 2016), attached as Exhibit 5. Cleco Power's lignite-fired Dolet Hills Power Station is one of the largest sources of visibility-impairing SO_2 and NO_X emissions in Louisiana. States and EPA routinely use a Q/D analysis as an initial screening method for determining which sources should be analyzed using the four factors. Using this approach, EPA, the states, and federal land managers generally conduct modeling for any source that has a Q divided by D threshold of 10 or more. Using Dolet Hills's average annual SO_2 and NO_X emissions from 2000-2016, Dolet Hills easily meets the Q/D threshold for additional modeling based on impacts to Breton National Wilderness Area and Caney Creek National Wilderness Area. For example, the Q/D for

Dolet Hills based on annual SO_2 emissions (17,907 tpy) and distance to Breton (500 km) would be 35. 8.

Based on the Q/D analysis, EPA was required to issue a FIP applying the four factors to Dolet Hills to determine whether additional emissions reductions are necessary at Dolet Hills to make reasonable progress. EPA's failure to do so violates the statute and the implementing regulations. The Stamper Report also provides a rough estimate of what such a four-factor analysis would look like for Dolet Hills for SO_2. First, there is ample support for requiring reasonable progress controls at Dolet Hills within a reasonable amount of time—no more than five years—just as EPA did for similar sources in the Texas reasonable progress FIP. Second, as EPA has recognized, the SO_2 control technologies of wet and dry FGD systems are widely used at coal-fired power plants all over the United States, and any energy and non-air quality environmental impacts of these controls are vastly outweighed by the benefits of significant reductions of air pollutants. Third, the Dolet Hills Power Plant began operation in 1986, and Cleco Power has indicated that the expected lifetime of the unit is sixty years. In any event, because there is no enforceable requirement or deadline for retirement, EPA must assume that the remaining useful life of the plant is 30 years—*i. e.* , the life of the SO_2 pollution controls evaluated.

Finally, it is clear that a new wet FGD system at Dolet Hills would be cost effective. Assuming a 98% SO_2 removal efficiency, or a 0. 04 lb/MMBtu SO_2 emission rate, and applying EPA's standard cost assumptions (*i.e.,* a 7% interest rate; 30-year life, etc.), the cost of a new wet FGD scrubber at Dolet Hills would be approximately $1,710/ton, which is well within EPA's range of reasonable BART costs. Moreover, emissions from the lignite-fired Dolet Hills power plant are currently responsible for significant visibility impairment at a number of Class I areas, including a more than 1. 0 deciview ("dv") baseline impact at Caney Creek. Gray Report at 6, Table 5. The modeling also demonstrates that installation of SO_2 controls at Dolet Hills, such as a replacement wet FGD system, would dramatically improve the visibility at all modeled Class I areas. Indeed, the installation of a wet FGD scrubber at Dolet Hills would improve visibility at Caney Creek by 0. 799

dv, relative to baseline 2000-2004 emissions. Moreover, a wet FGD system would result in almost a 0. 5 dv improvement at Breton Island in Louisiana, and more than 0. 5 dv improvement at Wichita Mountains and the Upper Buffalo. Overall cumulative delta dv impacts across six Class I areas would be reduced from 4. 23 to 0. 93—a cumulative improvement of 3. 30 dv.

In sum, the installation of a new WFGD system at Dolet Hills would be well within the range of costs that EPA has deemed reasonable and cost effective. Moreover, the installation of a new wet FGD system a Dolet Hills would result in a significant and noticeable change in visibility on the peak impact days at several Class I areas. Consequently, EPA must evaluate whether additional emission reductions at Dolet Hills are necessary to ensure reasonable progress toward the national goal.

Response: In 2012, we proposed to find that Louisiana's Long Term Strategy (LTS) for the first planning period was deficient given our proposed finding that certain of Louisiana's BART determinations were not fully approvable. "In general, the State followed the requirements of 40 CFR 51. 308(d)(1), but these goals do not reflect appropriate emissions reductions from BART. "[126] We finalized that action, which specifically disapproved the State's LTS, but only insofar as it relied on deficient BART determinations. [127] With this final action, we are approving all of LDEQ's SIP submittals, including the ones submitted after the 2008 SIP submittal, which have cured the deficiencies in the 2008 SIP revision submittal as identified in our 2012 action that related to BART, thus correcting the deficiencies in the LTS portion of the SIP as well. We note that the Regional Haze Rule requires states to submit periodic comprehensive SIP revisions that will continue to assess measures needed to achieve reasonable progress; the next SIP revision is due in 2021. We also note that the Revised Regional Haze Rule referenced by the commenter makes changes to the requirements that states have to meet for the second and subsequent implementation periods, but the revised rule is not applicable to this SIP submittal. [128]

[126] 77 FR 11856 (Feb. 28, 2012).
[127] 77 FR 39426 (July 3, 2012).
[128] 82 FR 3078 (January 10, 2017).

I. Compliance Date for Nelson

Comment: The three-year compliance date for Nelson Unit 6 does not meet the Clean Air Act requirement that BART controls be installed as expeditiously as practicable. There is no specific technical or economic evidence in the record to support a three-year compliance date. The record indicates that Entergy is likely meeting the 0. 6 lbs/MMBtu limit now. On September 28, 2017, Entergy's counsel wrote to EPA that "You asked whether the Nelson plant currently is meeting an emission rate of 0. 6 lbs/MMBtu. The answer is that Nelson 6 generally is emitting at levels below that level, with periodic exceptions when the sulfur content is higher. "[129] In addition, Entergy's reported monthly emissions data over the last several years clearly indicate that "Entergy has been able to consistently purchase coal with a sulfur content that would enable the Nelson Unit to comply with the 0. 60 lbs. /MMBtu level. "[130]

Even if Nelson is not currently meeting the proposed SO_2 limit, Entergy's counsel represented to EPA that Nelson could meet the 0.6 lbs/MMBtu limit in 2018 and 2019 if the limit was an annual average rather than a 30-day rolling average. [131] In the same message, Entergy's counsel stated that Nelson could meet the 0.6 lbs/MMBtu limit, with a 30-day rolling average, "for 2020. "[132] EPA's stated rationale for the deadline extension—that Entergy needs three years to comply—is contradicted by Entergy's statement that it could meet a 30-day rolling average of 0. 6 lbs/MMBtu beginning in 2020. Entergy represents that it would "be *difficult* for Nelson to assure compliance with an emission limit of 0.6 lbs/MMBtu before 2020. "[133] Entergy stated that it was unable to blend fuel, yet this is contradicted by the record. The Company has been "consistently" purchasing low-sulfur coal and "blending them in its feed stream for a number of years. "[134] Entergy did not explain what equipment it had on site, what equipment it believes would be necessary to

[129] Email from William Bumpers to EPA (Sept. 18, 2017), EPA Docket ID No. EPA-R06-OAR-2017-0129-0041.
[130] *See* EPA, BART Modeling and Cost Information Technical Assistance Document at 15 (attached as App'x F to Louisiana SIP).
[131] Email from William Bumpers to EPA (Sept. 18, 2017), EPA Docket ID No. EPA-R06-OAR-2017-0129-0041 ("If Nelson were given an annual limit of 0. 6 lbs/MMBtu for 2018 and 2019, transitioning to a 30-day rolling average for 2020, Entergy Louisiana believes it could achieve such limits. ").
[132] *Id.*
[133] *Id.*
[134] See BART Modeling and Cost Information Technical Assistance Document at 6, 15.

blend coal, and how much the necessary equipment would cost.

Additionally, Entergy could accept penalties for cancelling portions of its 2018 and 2019 contracts. Entergy did not provide any information about the penalties of cancelling the contract. It would have been able to submit this information to EPA and claim it as confidential business information. Neither the State nor EPA considered any other alternatives to extending the compliance deadline by three years. There is no evidence in the record for this amendment that the State or EPA considered the costs for Entergy to purchase the low-sulfur coal and fuel blending equipment necessary to meet the compliance deadline before 2020. Nor is there any evidence that the State or EPA considered alternatives such as lengthening the averaging time for the 0. 6 lbs/MMBtu limit for 2018 and 2019. Inexplicably, no consideration was given to the proposal that Entergy itself made: an annual limit for 2018 and 2019, followed by a 30-day rolling average for 2020.

Response: In a letter dated October 26, 2017[135] sent to LDEQ and EPA during the respective comment periods, Entergy stated that though it had recently been receiving lower sulfur coal, the sulfur content can vary greatly since its current contract limits the sulfur coal delivered to 1. 2 lbs/MMBtu. Entergy further stated that it does not have the equipment necessary to blend fuel which limits its ability to manage variable fuel supplies. Thus, it would not be able to consistently meet the 0. 6 lbs/MMBtu emission limit that has been determined to be BART prior to the expiration of its current contracts. BART is required to be installed and operational as expeditiously as practicable, but in no event later than five years after the approval of the SIP. The State took the circumstances at Entergy into account and determined that a compliance period of three years met this requirement. Under the company's current contract, the company could potentially receive coal that violates the limit. Therefore, it is reasonable for company to have time to enter into new contracts with new specifications. Further, the commenter raises the possibility of an annual limit that would be in place sooner. Annual limits, however, are generally not considered appropriate for BART which targets

[135] Letter from Kelly McQueen to Samuel Coleman, Re: Proposed Approval and Promulgation of Implementation Plans; Louisiana; Regional Haze State Implementation Plan, EPA-R06-OAR-2017-0129, October 26. 2017.

improvements on the days of maximum impact from the source. EPA has reviewed all the information in the SIP submittal and finds that the state has made a reasoned determination that meets the applicable requirements and therefore is approvable.

IV. Final Action

We are approving revisions to the Louisiana SIP submitted on June 13, 2008, August 11, 2016, February 10, 2017, and October 26, 2017, as supplemented October 9, 2017, as meeting the regional haze requirements for the first planning period. This action includes the finding that the submittals meet the applicable regional haze requirements as set forth in sections 169A and 169B of the CAA and 40 CFR 51. 300-308. The EPA is approving the SIP submittals with the supplemental information as meeting the following: the core requirements for regional haze SIPs found in 40 CFR 51. 308(d) such as the requirement to establish reasonable progress goals, the requirement to determine the baseline and natural visibility conditions, and the requirement to submit a long-term strategy; the BART requirements for regional haze visibility impairment with respect to emissions of visibility impairing pollutants from non-EGUs and EGUs in 40 CFR 51. 308(e); and the requirement for coordination with state and Federal Land Managers in 51. 308(i). For the BART requirements, we are approving LDEQ's determination that the BART-eligible sources at the following facilities do not cause or contribute to visibility impairment and are not subject to BART: Terrebonne Parish Consolidated Government Houma Generating Station (Houma), Louisiana Energy and Power Authority Plaquemine Steam Plant (Plaquemine), Lafayette Utilities System Louis "Doc" Bonin Generating Station, Cleco Teche, Entergy Sterlington, NRG Big Cajun I, and NRG Big Cajun II. We are also approving LDEQ's reliance on CSAPR to meet the NO_X BART requirement for EGUs. We are approving the following Agreed Orders on Consent that make the source-specific BART emission limits enforceable for the subject to BART units at the following facilities:

- Phillips 66 Administrative Order on Consent (AOC) No. AE–AOC–14–00211A
- Mosaic AOC No. AE–AOC–14–00274A

- EcoServices AOC No. AE–14–00957 and through the applicability of the New Source Performance Standards for Sulfuric Acid Plants (40 CFR part 60, subpart H)
- Entergy Willow Glen AOC – February 2017 LDEQ submittal, Appendix D
- Cleco Brame Energy Center AOC – February 2017 LDEQ submittal, Appendix B
- Entergy Little Gypsy AOC – February 2017 LDEQ submittal, Appendix D
- Entergy Ninemile Point AOC – February 2017 LDEQ submittal, Appendix D
- Entergy Waterford AOC – February 2017 LDEQ submittal, Appendix D
- Entergy Nelson AOC – October 2017 LDEQ submittal, Appendix D

We are approving the following AOC that limits the emissions such that the units at the facility are not subject to BART:

- NRG Big Cajun II AOC – February 2017 LDEQ submittal, Appendix C

Our approval addresses all of the deficiencies identified in our previous actions on the 2008 SIP revision.

V. Incorporation by Reference

VI. 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, the EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. Accordingly, this action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Is not an Executive Order 13771 (82 FR 9339, February 2, 2017) regulatory action because

SIP approvals are exempted under Executive Order 12866;

- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U. S. C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U. S. C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U. S. C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- 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 (59 FR 7629, February 16, 1994).

In addition, the SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

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).

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. 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 section 307(b)(2).)

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Visibility, Interstate transport of pollution, Regional haze, Best available retrofit technology

Dated: December 14, 2017.

Samuel Coleman,
Acting Regional Administrator, Region 6.

40 CFR part 52 is amended as follows:

PART 52–APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

1. The authority citation for part 52 continues to read as follows:

Authority: 42 U. S. C. 7401 *et seq*.

Subpart T - Louisiana

2. In § 52. 970, paragraph (d) is amended by revising the heading for "Permit number" to "Permit or Order Number" in the table titled "EPA-Approved Louisiana Source-Specific Requirements" and by adding new entries at the end of the table and paragraph (e) is amended by adding a new entry for "Louisiana Regional Haze" at the end of the second table titled "EPA Approved Nonregulatory Provisions and Quasi-Regulatory Measures in the Louisiana SIP. "

3. In § 52. 985, paragraphs a and b are revised and paragraph c is removed.

The amendments read as follows:

§ 52. 970 Identification of plan.

* * * * *

(d) * * *

EPA-APPROVED LOUISIANA SOURCE-SPECIFIC REQUIREMENTS

Name of Source	Permit or Order Number	State approval/ effective date	EPA approval date	Comments
* * * * * * *				
Phillips 66 Alliance Refinery	Administrative Order on Consent No. AE–AOC–14–00211A	4/29/16	**[Insert date of publication in the Federal Register], [Insert Federal Register citation]**	

EcoServices LLC.	EcoServices AOC No. AE–14–00957 and through the applicability of the New Source Performance Standards for Sulfuric Acid Plants (40 CFR part 60, subpart H)	8/8/16	**[Insert date of publication in the Federal Register], [Insert Federal Register citation]**	
Mosaic	Mosaic AOC No. AE–AOC–14–00274A	6/6/16	**[Insert date of publication in the Federal Register], [Insert Federal Register citation]**	
NRG Big Cajun II	In the Matter of Louisiana Generating LLC, Point Coupee Parish, Big Cajun II Power Plant	2/9/17	**[Insert date of publication in the Federal Register], [Insert Federal Register citation]**	Units 1 and 2
Cleco Power, LLC Brame Energy Center	In the Matter of Cleco Power, LLC, Rapides Parish, Brame Energy Center	2/9/17	**[Insert date of publication in the Federal Register], [Insert Federal Register citation]**	Unit 1 (Nesbitt 1) and Unit 2 (Rodemacher 2)
Entergy Louisiana, LLC, Little Gypsy Generating Plant	In the Matter of Entergy Louisiana, LLC, Little Gypsy Generating Plant, St. Charles Parish	2/13/17	**[Insert date of publication in the Federal Register], [Insert Federal Register citation]**	Units 2, 3, and the Auxiliary Boiler

Entergy Louisiana, LLC, Ninemile Point Electric Generating Plant	In the Matter of Entergy Louisiana, LLC, Ninemile Point Electric Generating Plant, Jefferson Parish	2/9/17	**[Insert date of publication in the Federal Register], [Insert Federal Register citation]**	Units 4 and 5
Entergy Louisiana, LLC, Waterford	In the Matter of Entergy Louisiana, LLC, Waterford 1 & 2 Electrical Generating Plant, St. Charles Parish	2/9/17	**[Insert date of publication in the Federal Register], [Insert Federal Register citation]**	Units 1 and 2
Entergy Louisiana, LLC, Willow Glen Generating Plant	In the Matter of Entergy Louisiana, LLC, Willow Glen Generating Plant, Iberville Parish	2/9/17	**[Insert date of publication in the Federal Register], [Insert Federal Register citation]**	Units 2, 3, 4, 5, and the Auxiliary Boiler
Entergy Louisiana, LLC, R. S. Nelson Generating Plant	In the Matter of Entergy Louisiana, LLC, R. S. Nelson Generating Plant, Calcasieu Parish	10/26/17	**[Insert date of publication in the Federal Register], [Insert Federal Register citation]**	Units 4, 6, and the Unit 4 Auxiliary Boiler

(e) * * *

EPA APPROVED NONREGULATORY PROVISIONS AND QUASI-REGULATORY MEASURES IN THE Louisiana SIP

Name SIP provision	Applicable geographic or nonattainmen	State submitta l date/	EPA approva l date	Explanation

	t area	effective date		
* *	* *	*		

Louisiana Regional Haze	Statewide	6/13/2008 8/11/2016 2/10/2017 10/26/2017	**[Insert date of publication in the Federal Register], [Insert Federal Register citation**	Supplemental information provided 10/9/2017 regarding Entergy Louisiana, LLC, Michoud Electric Generating Plant, Units 1, 2, and 3, Permit no. 2140-00014-V4, effective 4/28/15.

§ 52. 985 Visibility protection.

(a) *Measures addressing best available retrofit technology (BART) for electric generating unit (EGU) emissions of nitrogen oxides (NO_X).* The BART requirements for EGU NO_X emissions are satisfied by 40 CFR 52. 984.

(b) *Other measures addressing BART.* The BART requirements for emissions other than EGU NO_X emissions are satisfied by the Louisiana Regional Haze SIP approved **[Insert date of publication in the Federal Register] [Insert Federal Register citation]**.