

annually and rates each agency's responsiveness to small business. If you wish to comment on actions by employees of the Coast Guard, call 1-888-REG-FAIR (1-888-734-3247). The Coast Guard will not retaliate against small entities that question or complain about this rule or any policy or action of the Coast Guard.

C. Collection of Information

This rule will not call for a new collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3520).

D. Federalism and Indian Tribal Governments

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial, direct effect on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. We have analyzed this rule under that order and have determined that it is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132.

Also, this rule does not have tribal implications under Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, because it does not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes. If you believe this rule has implications for federalism or Indian tribes, please contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section above.

E. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531-1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of \$100,000,000 (adjusted for inflation) or more in any one year. Though this rule will not result in such an expenditure, we do discuss the effects of this rule elsewhere in this preamble.

F. Environment

We have analyzed this rule under Department of Homeland Security Directive 023-01 and Environmental Planning COMDTINST 5090.1 (series), which guide the Coast Guard in

complying with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4370f) and have determined that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. This rule involves establishment of two temporary safety zones for navigable waters in the Gulf of Mexico and South Bay. The safety zones are needed to protect personnel, vessels, and the marine environment from potential hazards created by rocket launching activity that may include free falling debris and/or descending vehicles or vehicle components under various means of control. It is categorically excluded from further review under paragraph L60(c), in Appendix A, Table 1 of DHS Instruction Manual 023-01-001-01, Rev. 1. A Record of Environmental Consideration is available for viewing in the docket. For instructions on how to locate it, see the **ADDRESSES** section above.

G. Protest Activities

The Coast Guard respects the First Amendment rights of protesters. Protesters are asked to contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section to coordinate protest activities so that your message can be received without jeopardizing the safety or security of people, places, or vessels.

List of Subjects in 33 CFR Part 165

Harbors, Marine safety, Navigation (water), Reporting and recordkeeping requirements, Security measures, Waterways.

For the reasons discussed in the preamble, the Coast Guard amends 33 CFR part 165 as follows:

PART 165—REGULATED NAVIGATION AREAS AND LIMITED ACCESS AREAS

■ 1. The authority citation for part 165 continues to read as follows:

Authority: 46 U.S.C. 70034, 70051, 70124; 33 CFR 1.05-1, 6.04-1, 6.04-6, and 160.5; Department of Homeland Security Delegation No. 00170.1, Revision No. 01.3.

■ 2. Add § 165.T08-1021 to read as follows:

§ 165.T08-1021 Safety Zones; Gulf of Mexico and South Bay, Boca Chica Beach, TX.

(a) *Location.* The following areas are safety zones: Safety Zone A consists of all navigable waters of the Gulf of Mexico, from the surface to bottom, encompassed by a line connecting the following points beginning at Point 1: 26°2'36" N 097°9'8" W, thence to Point

2: 26°3'0" N 097°7'10" W, thence to Point 3: 26°7'0" N 097°57'0" W, thence to Point 4: 26°6'54" N 096°55'46" W, thence following the 12NM line to United States of America/Mexico Maritime Boundary Line, thence following the United States of America/Mexico Maritime Boundary Line to Point 5: 25°57'24.2" N 097°8'49" W, thence following the coast to Point 1. Safety Zone B consists of all navigable waters of South Bay, from the surface to bottom, encompassed by a line connecting the following points beginning at Point 6: 26°2'45" N 097°11'6.3" W, thence to Point 7: 26°2'45" N 097°10'53.4" W, thence following the coastline to Point 6. These coordinates are based on World Geodetic System (WGS) 84.

(b) *Enforcement period.* This section will be subject to enforcement from 2 p.m. to 6 p.m. each day from November 18, 2024, through November 22, 2024, and November 25, 2024, and from 11 a.m. to 3 p.m. each day from November 23, 2024, through November 24, 2025.

(c) *Regulations.* (1) In accordance with the general regulations in § 165.23, entry into the temporary safety zones is prohibited unless authorized by the Captain of the Port, Sector Corpus Christi (COTP) or a designated representative. They may be contacted on Channel 16 VHF-FM (156.8 MHz) or by telephone at 361-939-0450.

(2) If permission is granted, all persons and vessels shall comply with the instructions of the COTP or designated representative.

(d) *Information broadcasts.* The COTP or a designated representative will inform the public of the enforcement times and date for the safety zone through Broadcast Notices to Mariners and Safety Marine Information Broadcasts.

Dated: November 17, 2024.

T.H. Bertheau,

Captain, U.S. Coast Guard, Captain of the Port, Sector Corpus Christi.

[FR Doc. 2024-27454 Filed 11-20-24; 8:45 am]

BILLING CODE 9110-04-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R04-OAR-2022-0786; FRL-10405-02-R4]

Air Plan Partial Approval and Partial Disapproval; North Carolina; Second Period Regional Haze Plan

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is approving in part and disapproving in part a regional haze State Implementation Plan (SIP) revision submitted by the North Carolina Department of Environmental Quality, Division of Air Quality (DAQ), dated April 4, 2022 (“Haze Plan” or “2022 Plan”) under the Clean Air Act (CAA or Act) and EPA’s Regional Haze Rule (RHR) for the regional haze program’s second planning period. North Carolina’s 2022 SIP submission was submitted to address the requirement that states must periodically revise their long-term strategies for making reasonable progress toward the national goal of preventing any future, and remedying any existing, anthropogenic impairment of visibility, including regional haze, in mandatory Class I Federal areas (hereinafter referred to as “Class I areas”). The SIP submission also addresses other applicable requirements for the second planning period of the regional haze program. EPA is taking this action pursuant to sections 110 and 169A of the Act.

DATES: This rule is effective December 23, 2024.

ADDRESSES: EPA has established a docket for this action under Docket Identification No. EPA–R04–OAR–2022–0786. All documents in the docket are listed on the *regulations.gov* website. Although listed in the index, some information may not be publicly available, *i.e.*, 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 *www.regulations.gov* or in hard copy at the Air Regulatory Management Section, Air Planning and Implementation Branch, Air and Radiation Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street SW, Atlanta, Georgia 30303–8960. EPA requests that, if at all possible, you contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section to schedule your inspection. The Regional Office’s official hours of business are Monday through Friday 8:30 a.m. to 4:30 p.m., excluding Federal holidays.

FOR FURTHER INFORMATION CONTACT: Michele Notarianni, Multi-Air Pollutant Coordination Section, Air Planning and Implementation Branch, Air and Radiation Division, U.S. Environmental

Protection Agency, Region 4, 61 Forsyth Street SW, Atlanta, Georgia 30303–8960. Ms. Notarianni can be reached via telephone at (404) 562–9031 or electronic mail at *notarianni.michele@epa.gov*.

SUPPLEMENTARY INFORMATION:

I. Background

On April 4, 2022, the North Carolina DAQ submitted a revision to its SIP to address regional haze for the second planning period. DAQ made this SIP submission to satisfy the requirements of the CAA’s regional haze program pursuant to CAA sections 169A and 169B and 40 Code of Federal Regulations (CFR) 51.308.¹ Subsequently, North Carolina submitted a letter, dated July 30, 2024 (Commitment Letter), requesting partial conditional approval of its Haze Plan and committing to submit a SIP revision containing specific enforceable measures no later than one year from the effective date of a final conditional approval action.² Through a notice of proposed rulemaking published on August 20, 2024, (89 FR 67341) (hereinafter referred to as the NPRM), EPA proposed to approve in part and conditionally approve in part North Carolina’s April 4, 2022, SIP submission addressing the regional haze requirements for the second planning period contained in the CAA and 40 CFR 51.308. Comments on the NPRM were due on or before September 19, 2024. EPA received four sets of relevant comments on the NPRM.

After reviewing the entirety of the record including comments submitted, EPA is now taking final action to approve in part and disapprove in part North Carolina’s Haze Plan. Specifically, EPA is approving the portions of the Haze Plan addressing the requirements of 40 CFR 51.308(f)(1), (f)(4) through (6), and (g)(1) through (5). EPA is disapproving the portions of the Haze Plan addressing the requirements of 40 CFR 51.308(f)(2) and (3) and (i)(2) through (4) due to the inadequate record associated with the four-factor analysis (FFA) for Domtar Paper, LLC (Domtar) located in Plymouth, North Carolina, as described in more detail in section II. EPA is not finalizing its previously

¹ In a letter dated August 15, 2022, EPA found that North Carolina’s Haze Plan meets the completeness criteria outlined in 40 CFR part 51, appendix V. A completeness determination does not constitute a finding on the merits of the submission or whether it meets the relevant criteria for SIP approval. The August 15, 2022, letter is included in the docket for this rulemaking.

² The Commitment Letter is in the docket for this rulemaking.

proposed conditional approval.³ Therefore, the issues identified as part of the proposed conditional approval and in the Commitment Letter are now subsumed under the broader partial disapproval.

Disapproving a SIP submission establishes a two-year deadline for EPA to promulgate a Federal Implementation Plan (FIP) to address the relevant requirements under CAA section 110(c), unless EPA approves a subsequent SIP submission that meets these requirements.⁴ Therefore, EPA will be obligated under CAA section 110(c)(1) to promulgate a FIP within two years after the effective date of this partial disapproval, unless the State submits, and EPA approves, a SIP revision that satisfies the requirements of 40 CFR 51.308(f)(2) and (3) and (i)(2) through (4).

This final action represents a logical outgrowth of the proposal, following EPA’s proposed partial approval and partial conditional approval, and receipt of public comments. EPA specifically solicited comments on the adequacy of DAQ’s analyses, including the FFAs, determination of controls necessary for reasonable progress, and the adequacy of the submitted permit conditions, including associated monitoring, recordkeeping, and reporting, and whether the State met the requirements of 40 CFR 51.308(f)(2)(i) through (iv). See 89 FR 67358. Through this solicitation of comment, the public was on notice that EPA was specifically interested in the public’s perspective on its conclusions and may ultimately change its conclusions. A logical outgrowth of a proposal is to refrain from taking the proposed step. See *Am. Iron & Steel Inst. v. EPA*, 886 F.2d 390, 400 (D.C. Cir. 1989). For action on SIP submittals, EPA is required to act, so the Agency may not refrain from acting. As such, it is reasonable to view a disapproval as a logical outgrowth of a proposed approval (or proposed conditional approval) if comments

³ Under CAA section 110(k)(4), EPA may conditionally approve a SIP revision based on a commitment from a state to adopt specific enforceable measures by a date certain, but not later than one year from the date of conditional approval of the plan revision. In its Commitment Letter, the State committed to submit a SIP revision containing specific enforceable measures no later than one year from the effective date of a final conditional approval action. Because EPA is not finalizing the proposed conditional approval, North Carolina is not required to submit that SIP revision.

⁴ North Carolina’s Haze Plan was not submitted to address a requirement of part D, title I of the CAA, and is not required in response to a finding of substantial inadequacy as described in CAA section 110(k)(5) (SIP Call), so the partial disapproval will not trigger any offset or highway sanctions clocks. See CAA section 179(a).

cause EPA to change its proposed conclusions. Consistent with CAA section 110(k)(3), EPA may approve in part portions of the SIP submittal if those portions meet all applicable requirements.

II. Response to Comments

In response to the NPRM, EPA received comment letters from the National Parks Conservation Association (NPCA), Sierra Club, the Coalition to Protect America's National Parks, Center for Biological Diversity, and Southern Environmental Law Center (collectively referred to as the "Conservation Groups"); U.S. National Park Service (NPS); and 7 Directions of Service, Blue Ridge Outdoors Magazine, Center for Biological Diversity, CleanAIRE NC, Coalition to Protect America's National Parks, Dogwood Alliance, Forest Keeper, Friends of Big Ivy, I Heart Pisgah, Mountain True, NPCA, North Carolina Black Alliance, and Toxic Free North Carolina (collectively referred to as the "Organizations"). Additionally, EPA received comments from two members of the public. One set of comments from a member of the public is not relevant to this action, and the other set of comments is addressed below. All comments received are available in the docket for this action. A summary of the significant comments received from these commenters and EPA's responses to these comments is below.

Comment 1: The Conservation Groups contend that EPA's proposal to approve North Carolina's reliance on the Visibility Improvement State and Tribal Association of the Southeast's (VISTAS') visibility modeling is arbitrary and capricious because the Agency ignored significant flaws in this modeling. They state that they informed VISTAS and EPA of significant errors in the visibility modeling through a 2021 letter,⁵ EPA did not acknowledge these errors in the NPRM, and these errors affected the source selection process for all of the VISTAS states. Consequently, they assert that North Carolina improperly excluded major sources of haze-forming pollution from FFAs.⁶ These alleged errors are addressed in comments 1.a through 1.c below.

Comment 1.a: The Conservation Groups contend that the VISTAS

modeling significantly underpredicted the contribution of sulfates to visibility impairment at Class I areas on the 20 percent most impaired days and that this underprediction was largest during the summer months when visibility impairment is most problematic.⁷ They also assert that these errors resulted in the modeling not meeting VISTAS' model performance goals and modeling acceptance criteria for a number of Class I areas. They further assert that although North Carolina claims that it corrected for this underprediction through the use of relative response factors (RRFs), neither North Carolina nor EPA assessed whether use of RRFs adequately corrected for errors in the modeling.

Response 1.a: EPA disagrees that there are significant flaws in North Carolina's 2028 visibility modeling that resulted in excluding major sources of haze-forming pollution from evaluation via FFAs for the second planning period. As the Conservation Groups state, North Carolina relied upon the photochemical visibility modeling performed by VISTAS to project the impact of the State's 2028 sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emissions on visibility in both in-state and out-of-state Class I areas. VISTAS performed the modeling in accordance with the principles described within EPA's "Modeling Guidance for Demonstrating Air Quality Goals for Ozone, PM_{2.5} and Regional Haze" (2018 Modeling Guidance).⁸ In 2018, EPA approved⁹ the Quality Assurance Project Plan prepared by VISTAS for performing the modeling and also reviewed and provided comments on the VISTAS Modeling Protocol. EPA also reviewed the VISTAS final modeling reports and data relied upon by North Carolina, and they appear reasonable.

Regarding sulfate predictions, figure 6–7 in North Carolina's Haze Plan shows the results of the normalized mean bias and normalized mean error statistical model performance tests for sulfates across the VISTAS region. Figure 6–7 does show that the modeled

sulfate levels are biased low, with some values falling outside of the model performance criteria. However, as discussed below, these biases are not uncommon in photochemical modeling analyses and can be addressed with additional analyses. Table 6–10 in the Haze Plan summarizes the sulfate model performance criteria for multiple statistical tests, and figures 6–32 through 6–55 in the Haze Plan graphically depict model performance at the Great Smoky Mountains National Park (Great Smoky Mountains) (North Carolina/Tennessee); Linville Gorge National Wilderness Area (Linville Gorge); and Swanquarter National Wilderness Area (Swanquarter) which are three of the five Class I areas in North Carolina.¹⁰

Model bias and error, either high or low, is not uncommon in photochemical modeling analyses due to uncertainties in model inputs and the scientific model formulation, and the fact that all air quality models are simplified approximations of the complex phenomena of atmospheric chemistry, fate, and transport of pollutants. Section 6.0 of EPA's 2018 Modeling Guidance discusses uncertainties that may affect model results and states that following the recommendations in the Guidance should help mitigate the uncertainty as much as possible. North Carolina acknowledges in the Haze Plan that model performance is biased low on the 20 percent most impaired days and provided an explanation of why this modeling was nonetheless appropriate for its regulatory determinations in the Haze Plan (which references the 2018 Modeling Guidance in several instances). The 2018 Modeling Guidance states that it is not appropriate to use a "bright-line test" for distinguishing between adequate and inadequate photochemical model performance for a single performance test statistic.¹¹ EPA's 2018 Modeling Guidance instead recommends using a "weight of evidence" approach for

⁷ Areas statutorily designated as mandatory Federal Class I areas consist of national parks exceeding 6,000 acres, wilderness areas and national memorial parks exceeding 5,000 acres, and all international parks that were in existence on August 7, 1977. CAA section 162(a). There are 156 mandatory Class I areas. The list of areas to which the requirements of the visibility protection program apply is in 40 CFR part 81, subpart D.

⁸ "Modeling Guidance for Demonstrating Air Quality Goals for Ozone, PM_{2.5} and Regional Haze," EPA 454/R–18–009, November 29, 2018, available at: https://www.epa.gov/sites/default/files/2020-10/documents/o3-pm-rh-modeling_guidance-2018.pdf.

⁹ The April 3, 2018, Quality Assurance Project Plan for the VISTAS II Regional Haze Project is located in appendix A–1 of the Haze Plan.

¹⁰ North Carolina has five Class I areas, two of which are shared with Tennessee: Great Smoky Mountains (North Carolina/Tennessee); Linville Gorge; Swanquarter; Shining Rock National Wilderness Area (Shining Rock); and Joyce Kilmer-Slickrock National Wilderness Area (Joyce Kilmer) (North Carolina/Tennessee). Joyce Kilmer relies on data from the Great Smoky Mountains IMPROVE monitoring site (GRSM1) because it does not have an IMPROVE monitor and the Shining Rock IMPROVE monitor did not have valid data in 2011 so model performance could not be evaluated.

¹¹ See 2018 Modeling Guidance at p. 69 ("Further, even with a single performance test, it is not appropriate to assign 'bright line' criteria that distinguish between adequate and inadequate model performance.").

⁵ Exhibit 11 of the Conservation Groups' comments contains the May 12, 2021, letter regarding the VISTAS regional haze modeling for the second planning period.

⁶ The amount of progress that is "reasonable progress" is based on applying the four statutory factors in CAA section 169A(g)(1) in an evaluation of potential control options for sources of visibility impairing pollutants, which is referred to as a "four-factor analysis."

evaluating model performance holistically.¹²

As discussed in section 5.2(d) of EPA's "Guideline on Air Quality Models" contained in 40 CFR part 51, appendix W, there are no specific levels of any model performance metric that indicate acceptable model performance. The decision regarding acceptability is heavily influenced by professional judgment of the reviewing authority, which is EPA in this case. Based upon the overall performance of the model for all pollutants affecting visibility, considered holistically, North Carolina's conclusions that the modeling is acceptable for use in the regional haze SIP analyses appear reasonable, and North Carolina provided a reasonable explanation of the model bias.

Just as importantly, North Carolina's steps to correct for this model bias appear reasonable. The Haze Plan explains that the model is applied in a relative sense through the calculation of RRFs following the procedures in 2018 Modeling Guidance for calculating 2028 future year visibility impacts, which mitigates concerns about the low bias in the sulfate model predictions. As described in EPA's 2018 Modeling Guidance, RRFs are "the fractional change in air quality concentrations that is simulated due to emissions changes between a base and a future year emissions scenario."¹³

Applying the model in a relative sense using the RRFs is an important tool in mitigating the impacts of the sulfate modeling underpredictions in the 2011 baseline year on the model projections for the 2028 future year. Section 4.1 of the 2018 Modeling Guidance provides a detailed explanation of why EPA recommends photochemical modeling be applied in a relative sense and explains that problems posed by model bias are expected to be reduced when using the relative approach. Section 7.2.6.1 of North Carolina's Haze Plan explains the calculation of 2028 visibility estimates using the RRF approaches contained in EPA's 2018 Modeling Guidance. Using the RRF approach with an average of five years of Interagency Monitoring of Protected Visual Environments (IMPROVE)¹⁴ data on the 20 percent most impaired days and 20 percent clearest days along with the relative

percent modeled change in all of the particulate matter (PM) species between 2011 and 2028 reduces the influence of the low bias in sulfate-modeled (and other PM species) values in the 2011 baseline year. The 2028 visibility impairment projection is derived primarily from the five-year average of actual IMPROVE monitoring data in 2009–2013 that was then scaled in a relative sense by the modeling results. If the model was being applied in an absolute sense, the low bias in the sulfate modeled values would have a larger impact on the 2028 visibility projections. For these reasons, North Carolina's use of the VISTAS model results to inform source selection appears reasonable due to the use of RRFs to minimize the impacts of model bias.

Comment 1.b: The Conservation Groups state that VISTAS relied on an "outdated" 2011 baseline year for its 2028 future year emissions projections and assumed that electric generating units (EGUs) would operate in the exact same manner in 2028 as they did in 2011. Thus, they assert that the model assumptions and results are incorrect because EGUs are likely to have different load utilization in 2028 than in 2011.

Response 1.b: North Carolina's use of a 2011 base emissions inventory year to project emissions out to 2028 (the end of the second planning period) appears reasonable in this instance. Although it is always preferable to use the most recent information available for modeling, the 2011 baseline year inventory used by VISTAS was the latest region-wide inventory available at the time that North Carolina's SIP submittal was being developed during the VISTAS technical work, which took place from December 2017 to February 26, 2021.¹⁵ In EPA's experience, coordination among states such as those in the VISTAS region takes time, and the modeling involved is time-consuming, highly technical, and resource intensive. The modeling generally requires hundreds of hours of time to gather the model input data (e.g., emissions, meteorology, land-use, etc.), prepare modeling protocols, perform the modeling, and analyze the results. The computational resources to run photochemical models are also very large. "Mainframe" clusters of a large number of computer processors are required to run the models, and even using these powerful computers, it takes weeks of computer run-time for a full-

year model simulation. Additionally, EPA's newer 2016-based modeling platform only became available in September 2019, after VISTAS had already invested a considerable amount of time and money into the regional haze modeling analysis.¹⁶ EPA develops the National Emissions Inventory (NEI) suitable for use in such models every three years.¹⁷ By design, the regional haze program requires states to spend significant time in the planning phase, and this generally necessitates the use of a baseline year that is substantially earlier than the date the state submits its SIP to EPA.

In addition, there is no RHR requirement regarding the baseline year for regional photochemical modeling (nor is photochemical modeling required). At the time VISTAS began their regional haze modeling, EPA did not have a more recent baseline emissions inventory year available for state use in the second period regional haze plans. Furthermore, North Carolina explains the use of this particular baseline year and states that the 2011 emissions inventory was the most recently available quality assured statewide emissions inventory when the VISTAS project began.¹⁸ Moreover, prior to using this data, the State discussed the selection of this baseline year emissions inventory and received confirmation from EPA to use this emissions inventory.¹⁹

The 2011 emissions inventory was used to estimate emissions of visibility impairing pollutants in 2028. VISTAS applied reductions expected from

¹⁶ See "Technical Support Document for EPA's Updated 2028 Regional Haze Modeling" at: <https://www.epa.gov/visibility/technical-support-document-epas-updated-2028-regional-haze-modeling>.

¹⁷ For more information on the NEI, see: <https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei>.

¹⁸ See Haze Plan at p. 24 ("The year 2011 was selected as the modeling base year because the VISTAS 2028 emissions inventory is based on the 2011 Version 6 EPA modeling platform, which at the commencement of the VISTAS second round of planning for regional haze was the most current, complete modeling platform available. For the analyses in this SIP, this period consists of those years surrounding 2011 (i.e., 2009–2013)."). See also Haze Plan, p. 49 ("Calendar year 2011 satisfies the criteria in EPA's modeling guidance episode selection discussion and is consistent with the base year modeling platform. In addition, the 2011/2028 modeling platform was the most recent available platform when VISTAS started its modeling work. EPA's 2016-based platform became available at a later date after VISTAS had already invested a considerable amount of time and money into the modeling analysis. Using the 2016-based platform was not feasible from a monetary perspective, nor could such work be done in a timely manner.").

¹⁹ See the January 29, 2018, email from EPA (Richard Wayland) regarding use of a 2011 base year by VISTAS for regional haze in the docket for this rulemaking.

¹² See id. ("[T]he EPA recommends that a "weight of evidence" approach be used to determine whether a particular modeling application is valid for assessing the future attainment status of an area.").

¹³ See id. at p. 103.

¹⁴ IMPROVE visibility monitoring data is available at: <https://vista.cira.colostate.edu/Improve/>.

¹⁵ See "Timeline" for the VISTAS II Regional Haze Project at: <https://www.metro4-sesarm.org/content/vistas-regional-haze-project-intro>.

Federal and state regulations on the visibility impairing pollutants NO_x, PM, and SO₂. North Carolina's 2028 emissions projections are based on the State's technical analysis of the anticipated emissions rates and level of activity for EGUs, other point sources, non-point sources, on-road sources, and off-road sources based on their emissions in the 2011 base year, considering growth and additional emissions controls to be in place by 2028. In addition, the VISTAS emissions inventory for 2028 accounts for post-2011 emission reductions from promulgated Federal, state, local, and site-specific control programs. North Carolina's modeling of the EGUs and non-EGUs for the growth factors appears reasonable. The 2011 baseline year to 2028 future year emissions projections were modeled to account for projected changes in emissions over the second planning period.

Although North Carolina used the 2011 year as its emissions inventory base year, North Carolina also examined more recent emission inventory information for SO₂ and NO_x for the years 2017, 2018, and 2019 and compared these emissions to the 2028 emission projections that were used for modeling purposes in section 7.7.3 and tables 7–41 and 7–42 of its Haze Plan. This appears compliant with 40 CFR 51.308(f)(2)(iii) and is another backstop that helps to ensure that the State adequately considered more recent emissions inventory information. The technical information provided in the docket documents the projected 2028 emissions inventory in the Haze Plan. Given the aforementioned reasons, the use of the 2011 baseline year by VISTAS (and thus North Carolina) appears reasonable.

Comment 1.c: The Conservation Groups state that VISTAS used “outdated” monitoring data for its 2028 future year projections that did not reflect an observed shift in nitrate contribution to visibility impairment in the southeastern United States in the recent past. They therefore contend that this resulted in the exclusion of major NO_x sources from the modeling results.

Response 1.c: Regarding the Conservation Groups' claims that the 2009–2013 modeling base period did not reflect more recent changes in nitrate contributions, EPA discussed its views on this issue in detail in the NPRM. Nitrates are also discussed in response 3, below. EPA agrees that during the 2009–2013 timeframe, nitrate impacts have become more significant on some of the 20 percent most impaired days, especially taking into account the significant decrease in SO₂

emissions and acknowledged this in the NPRM. However, North Carolina's focus on SO₂ emitting sources during this period appears reasonable because sulfates remain the dominant visibility impairing pollutant at the Class I areas affected by North Carolina.

For the reasons discussed in responses 1.a through 1.c, the VISTAS modeling appears adequate for North Carolina's use in selecting sources for a FFA for the second planning period. However, the requirement to consider the four factors in establishing the long-term strategy (LTS) at 40 CFR 51.308(f)(2) and CAA section 169A(g)(1) encompasses the selection of sources for further analysis, and as discussed above, EPA is disapproving the portions of the Haze Plan addressing 40 CFR 51.308(f)(2) due to the inadequate record associated with the Domtar FFA.

Comment 2: The Conservation Groups claim the errors in the VISTAS modeling discussed in comment 1 above were carried forward into the source selection process for VISTAS states, including North Carolina, and that those errors caused VISTAS, and the states that relied on the VISTAS process, to improperly exclude sources from FFAs. In addition to the impact of the modeling errors, they state that North Carolina used VISTAS' unreasonable source screening process using Area of Influence (AoI) and Particulate Matter Source Apportionment Technology (PSAT) analyses and unreasonably high source selection thresholds. They therefore contend that EPA's proposal to approve the State's source selection method is arbitrary and capricious. The Conservation Groups' specific comments on this topic are addressed in comments 2.a through 2.g, below.

Comment 2.a: The Conservation Groups claim that the State employed unreasonably high source selection thresholds for AoI, which were too restrictive and resulted in the identification of only five North Carolina sources at that step. They assert that by using a percentage source selection threshold, the calculated threshold in absolute visibility impact terms was higher for Class I areas with the most severe visibility impairment. The Conservation Groups contend that fewer sources were identified at the AoI step for Class I areas with the worst visibility impairment. They also state that for the areas with the worst visibility impairment, more sources should be selected to make progress toward the natural visibility goal. In addition, they assert that neither North Carolina nor EPA provide justification for a three percent threshold at the AoI step, making its use arbitrary.

Response 2.a: EPA disagrees with this comment. As explained in the NPRM, the RHR does not require states to consider controls for all sources, all source categories, or any or all sources in a particular source category. See 89 FR 67346. Nor does the RHR expressly specify criteria for minimum source selection thresholds.

These flexibilities, however, are not unbounded. The RHR requires that “[t]he State should consider evaluating major and minor stationary sources or groups of sources, mobile sources, and area sources. The State must include in its implementation plan a description of the criteria it used to determine which sources or groups of sources it evaluated and how the four factors were taken into consideration in selecting the measures for inclusion in its long-term strategy.”²⁰ In addition, the technical basis for source selection must also be documented, as required by 40 CFR 51.308(f)(2)(iii), and North Carolina discussed the criteria it used to determine which sources or groups of sources were evaluated by the State, including the use of AoI analysis, photochemical modeling (e.g., PSAT), and associated source selection thresholds for AoI and PSAT tagging in its Haze Plan. North Carolina documented its use of these approaches in extensive detail within section 7.5 of the Haze Plan and appendices D–1 and D–2 of the Haze Plan (relating to AoI analysis) and section 7.6 of the Haze Plan and appendices E–1a, E–1b, E–2a, E–2b, E–2c, E–2d, E–2e, E–2f, E–3, E–4, E–5, E–6, E–7a, E–7b, and E–8 of the Haze Plan (relating to PSAT modeling).

North Carolina's source selection methodology—including the use of an AoI threshold of greater than or equal to three percent for sulfate and nitrate combined at any North Carolina Class I area for all sources within and outside of the State for follow-up PSAT tagging, and a one percent PSAT threshold on a pollutant-by-pollutant basis for source selection—appears reasonable and is documented in the Haze Plan. A specific approach is not required by the RHR.²¹

²⁰ See 40 CFR 51.308(f)(2)(i).

²¹ Both of these approaches (AoI and PSAT) are example methods in EPA's August 20, 2019, guidance titled: “Guidance on Regional Haze State Implementation Plans for the Second Implementation Period” (“2019 Guidance”) which is available at: https://www.epa.gov/sites/default/files/2019-08/documents/8-20-2019_-_regional_haze_guidance_final_guidance.pdf. See subsection “(b) Estimating baseline visibility impacts for source selection” on pages 12–15 of the 2019 Guidance. Photochemical modeling (zero-out and/or source apportionment is listed as item 4 on page 13 of the 2019 Guidance. VISTAS' AoI analyses involve items 1–3 on p. 13 of the 2019 Guidance.

The results of this methodology also appear reasonable. North Carolina selected for further analysis the three sources with the largest visibility impacts (accounting for both SO₂/sulfate and NO_x/nitrate²²) at North Carolina and nearby Class I areas. On the whole, SO₂ emissions from the three in-state sources selected by North Carolina for FFAs—Blue Ridge Paper Products—Canton Mill (BRPP); Domtar;²³ and PCS

Phosphate Inc.—Aurora (PCS)—are projected to impact visibility at Class I areas above North Carolina’s one percent PSAT threshold.

Most anthropogenic impacts to visibility at the North Carolina Class I areas come from outside of North Carolina and, in fact, they primarily come from outside of the VISTAS states. This is also illustrated in table 7–14 of the Haze Plan, which provides the

contributions from 2028 SO₂ and NO_x emissions to visibility impairment from all source sectors for the 20 percent most impaired days in units of inverse megameters (Mm⁻¹). The entries in table 1, below, taken from table 7–14 of the Haze Plan, show the contributions made from North Carolina, all other VISTAS states, and other Regional Planning Organizations (RPOs) to North Carolina’s Class I areas.

TABLE 1—CONTRIBUTIONS OF 2028 SO₂ AND NO_x EMISSIONS FROM ALL SOURCE SECTORS TO VISIBILITY IMPAIRMENT FOR THE 20 PERCENT MOST IMPAIRED DAYS FOR CLASS I AREAS IN NORTH CAROLINA [Mm⁻¹]*

Class I area	Sulfate + nitrate visibility impairment (Mm ⁻¹)							
	2028 total impairment (all species)	2028 sulfate + nitrate impairment	NC	All other VISTAS states	CENRAP region**	LADCO region**	MANE-VU region**	Boundary + all other regions within VISTAS modeling domain
Great Smoky Mountains	45.75	24.17	0.89	9.77	1.87	3.74	1.57	6.33
Joyce Kilmer	45.12	22.48	0.43	5.62	2.96	6.84	0.82	5.81
Linville Gorge	42.52	19.47	0.95	4.19	2.55	5.54	1.15	5.09
Shining Rock	42.09	19.20	1.13	3.97	2.80	5.11	0.75	5.44
Swanquarter	46.39	21.14	1.83	3.87	0.72	4.19	3.23	7.30

* As noted in North Carolina’s Haze Plan, the columns to the right of “Projected 2028 Impairment on 20% Most Impaired Days” do not add up to the values in the “Projected 2028 Impairment on 20% Most Impaired Days” column due to international emissions and boundary emissions.

** “CENRAP” refers to Central Regional Air Planning Association (which is associated with the Central States Air Resource Agencies (CENSARA)); “LADCO” refers to Lake Michigan Air Directors Consortium; “MANE-VU” refers to Mid-Atlantic/Northeast Visibility Union; “WRAP” refers to Western Regional Air Partnership. See also: <https://www.epa.gov/visibility/visibility-regional-planning-organizations>.

Table 1 illustrates that North Carolina’s in-state emissions account for a relatively small fraction of total sulfate plus nitrate visibility impairment at North Carolina’s Class I areas which is as follows: approximately 3.68 percent for Great Smoky Mountains; 1.91 percent for Joyce Kilmer; 4.88 percent for Linville Gorge; 5.89 percent for Shining Rock; and 8.66 percent for Swanquarter.²⁴

The RHR affords North Carolina flexibility in its choice of both AoI and PSAT thresholds. North Carolina’s source selection methodology appears reasonable, and therefore, North Carolina’s choice of the three largest impacting sources in the State using its AoI and PSAT criteria appears adequate.

Comment 2.b: The Conservation Groups state that VISTAS considered sulfate and nitrate separately in the PSAT model analyses, which the Conservation Groups allege does not align with how these pollutants actually function in the atmosphere, where sulfate and nitrate act in combination,

along with other precursors, to contribute to visibility impairment. As a result, they argue that VISTAS likely underestimated the overall visibility impact of individual sources in its PSAT analysis.

Response 2.b: EPA disagrees with this comment. In the AoI screening analysis, VISTAS used the combined sulfate plus nitrate values to select sources to tag for the refined PSAT source apportionment modeling analyses. Section 7.5.5 of the Haze Plan explains how North Carolina used the results of the AoI analysis to select sources for further evaluation with PSAT. This section shows that facilities contributing greater than or equal to three percent for sulfate and nitrate combined at any North Carolina Class I area for all sources within and outside of the State were selected for PSAT tagging. See tables 7–20 through 7–24 for the specific sources with sulfate plus nitrate values greater than North Carolina’s AoI source selection threshold.

Also, contrary to the Conservation Groups’ assertion, sulfates and nitrates were modeled together in the PSAT modeling with the other PM species that impact visibility (e.g., direct PM, organic carbon, elemental carbon, etc.). Section 7.6.2 of the Haze Plan summarizes the results of the PSAT modeling. This section states that: “The adjusted PSAT results were used to calculate the percent contribution of each tagged facility to the total sulfate and nitrate point source (EGU + non-EGU) contribution at each Class I area.”²⁵ Tables 7–31 through 7–35 contain the specific PSAT results for each of North Carolina’s Class I areas. It is true that North Carolina considered the PSAT modeled results for sulfate and nitrate separately to compare against its selected one percent threshold. However, no additional sources would have been identified by using a combined sulfate plus nitrate metric. For these reasons, North Carolina’s approach appears reasonable.

²² North Carolina selected sources for PSAT modeling based on the combined impact of sulfate plus nitrate. Sulfates and nitrates were modeled together in the PSAT modeling with the other PM species that impact visibility (e.g., direct PM, organic carbon, elemental carbon, etc.). There were no sources with a sulfate impact below the PSAT threshold(s), but a sulfate plus nitrate impact above the threshold(s).

²³ On December 1, 2023, DAQ issued Air Quality Permit No. 04291T51 authorizing modifications to the Domtar facility, which is available at: <https://edocs.deq.nc.gov/AirQuality/DocView.aspx?id=457541&dbid=0&repo=AirQuality&searchid=c271acf8-6535-4306-8cfb-9a0caa2b3d97>. Because these authorized permit modifications are subsequent to the North Carolina SIP submission, North Carolina

did not consider the modification to determine reasonable progress in the second planning period.

²⁴ These percentages were calculated by dividing the “NC” column by the “2028 Sulfate + Nitrate Impairment” column and multiplying by 100.

²⁵ See Haze Plan at p. 227.

Comment 2.c: The Conservation Groups state that VISTAS used an outdated 2028 emissions projection to “tag” sources. They note that although VISTAS documented that the initial 2028 emission inventory projections were updated for the final modeling, the associated PSAT modeling did not use the final 2028 inventory. They state that VISTAS scaled predicted sulfate and nitrate to the corresponding changes in SO₂ and NO_x emissions using a linear relationship between SO₂ and NO_x emissions and sulfate and nitrate concentrations. They argue ample evidence shows that there is a non-linear relationship between emissions and sulfate/nitrate concentrations. Moreover, the Conservation Groups contend that North Carolina significantly underestimated future 2028 emissions for multiple sources, pointing to a comparison of North Carolina’s 2028 future emission projections against recent actual emissions for five Duke Energy EGUs as an example: Duke Energy Carolinas (DEC)—Belews Creek Steam Station (DEC—Belews Creek), DEC—Cliffside Steam Station (DEC—Cliffside), DEC—Marshall Steam Station (DEC—Marshall), Duke Energy Progress, LLC (DEP)—Mayo Electric Generating Plant (DEP—Mayo), and DEP—Roxboro Steam Electric Plant (DEP—Roxboro).²⁶

They argue that this comparison shows that the State severely underestimated future emissions for these facilities and note that nothing in the Haze Plan indicates that there have been federally enforceable changes to these Duke Energy EGUs’ operating parameters that would justify such large differences between recent actual emissions and future year 2028 projections.

Response 2.c: Regarding the Conservation Groups’ claim that VISTAS used an outdated 2028 emissions projection to select sources for the PSAT modeling and that the linear scaling used to adjust the PSAT results for the updated 2028 emissions inventory introduced errors into the modeling, EPA acknowledges that VISTAS used the original 2028 emissions inventory to perform the PSAT modeling and that the original PSAT results were linearly scaled to reflect the updated 2028 emissions. Although linear scaling introduces some uncertainty to the final PSAT results, EPA agrees that adjusting the results to account for VISTAS’ updated 2028 emissions inventory using linear scaling is a better approach than relying on the

original PSAT modeling. Linear scaling of photochemical modeling results to account for changes in emissions is an accepted practice by EPA. An example is provided by EPA’s Modeled Emission Rates for Precursors (MERPs) for evaluating secondary particulate matter of 2.5 micrometers or less in diameter (PM_{2.5}) impacts in Prevention of Significant Deterioration (PSD) modeling analyses.²⁷ This guidance recommends an approach where the PM_{2.5} impacts are estimated using an archived national-scale photochemical modeling analysis, performed using Comprehensive Air Quality Model with Extensions (CAMx) and Community Multiscale Air Quality Modeling (CMAQ)²⁸ photochemical models, that uses hypothetical emissions sources, and then linearly scaling the photochemical modeling results using the ratio of the PSD project-specific source emissions to the modeled emissions from the hypothetical source (see Equation 1 on page 3 of the April 30, 2024, MERPs memorandum). This approach is widely used and accepted by state air quality agencies and EPA to account for secondarily formed PM_{2.5} resulting from precursor emissions (SO₂ and NO_x) for PSD modeling analyses. Since the MERPs analyses use linear scaling with CAMx and for the same PM_{2.5} precursors (SO₂ and NO_x) as VISTAS used for their regional haze modeling, this example clearly shows that linear scaling of PM precursor emissions is an accepted practice.

Regarding the Conservation Groups’ assertion that “[n]othing in the SIP Revision indicates that there have been federally enforceable changes to the Duke Energy EGUs’ operating parameters that would justify such large differences between recent actual emissions and future year 2028 projections,” as explained in response 4.f, under the RHR, sources that do not meet a state’s reasonable source selection criteria (such as these five Duke Energy EGUs) are not selected for a FFA and are therefore not required to have emission limits and supporting conditions adopted into the LTS in the SIP to support reasonable progress for the planning period.

With respect to the 2028 emissions projections for the Duke Energy EGUs,

²⁷ “Clarification on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM_{2.5} under the PSD Permitting Program,” April 30, 2024, Memorandum from Tyler Fox to Regional Office Modeling Contacts is available at: https://www.epa.gov/sites/default/files/2020-09/documents/epa-454_r-19-003.pdf.

²⁸ See <https://www.epa.gov/cmaq> for further information on CMAQ.

North Carolina appears to have used the best assumptions available at the time of SIP development to project the 2011 base year emissions out to 2028 for the five Duke Energy EGUs discussed in this response. The State compared 2017, 2018, and 2019 actual SO₂ and NO_x emissions to 2028 projected emissions in tables 7–41 and 7–42 of their Haze Plan. The methodology used to make the 2028 projections is discussed in appendix B–3 of North Carolina’s Haze Plan. Table 9 in appendix B–3 provides a comparison of the different projection methodologies used by North Carolina including a comparison to the 2028 emissions projections performed separately by EPA for its 2028 Regional Haze Modeling.²⁹ The total of North Carolina’s 2028 projected SO₂ emissions for the five Duke Energy EGUs in table 9 of appendix B–3 used for its reasonable progress and PSAT modeling (VISTAS 2028elv5 inventory) is 8,732 tons per year (tpy), which is approximately eight percent less than the 9,456 tpy of emissions projected by EPA for 2028 for these five sources. EPA’s 2028 emissions for EGUs were projected from the more recent 2016 base-year emissions inventory using the Integrated Planning Model.³⁰ While North Carolina’s 2028 projection emissions are much less than the recent actual emissions in 2017–2019, North Carolina’s and EPA’s projected 2028 projections are similar. Therefore, North Carolina’s 2028 emissions projections appear reasonable for the reasonable progress and PSAT modeling analyses.

Comment 2.d: The Conservation Groups note that North Carolina relied on the PSAT modeling results for its multiple in-state sources that are located less than 50 kilometers (km) from a Class I area and claim that PSAT modeling has been shown to be unreliable for sources that are within a short distance from a Class I area, referencing Federal Land Manager (FLM)³¹ guidance that addresses

²⁹ Memorandum from Richard A. Wayland to Regional Air Division Directors, “Availability of Modeling Data and Associated Technical Support Document for EPA’s Updated 2028 Visibility Air Quality Modeling,” September 19, 2019, available at: <https://www.epa.gov/visibility/technical-support-document-epas-updated-2028-regional-haze-modeling>.

³⁰ “Documentation for EPA’s Power Sector Modeling Platform v6 Using the Integrated Planning Model,” November 2018, available at: <https://www.epa.gov/power-sector-modeling/documentation-epas-power-sector-modeling-platform-v6-november-2018-reference>.

³¹ EPA’s regulations define “Federal Land Manager” as “the Secretary of the department with authority over the Federal Class I area (or the Secretary’s designee) or, with respect to Roosevelt-Campobello International Park, the Chairman of the

²⁶ See table 2 of the 2024 Kordzi Report in Exhibit 1 of the Conservation Groups’ comment letter.

regional grid models. According to the Conservation Groups, this guidance shows that regional grid models are not preferred for sources located close to Class I areas and that the grid size used by VISTAS is too small to produce accurate results for those sources.

Response 2.d: The Conservation Groups state that PSAT modeling has been shown to be unreliable for sources located less than 50 km from a Class I area, which caused North Carolina to inappropriately screen out sources which should have undergone an FFA. However, they do not provide any specific model performance information demonstrating that the CAMx model nor the PSAT source apportionment tool have poor model performance for evaluating visibility impacts from sources located within 50 km of any of the Class I areas located in North Carolina.

Instead, the Conservation Groups provide qualitative arguments to support their assertion. They assert that the FLMs' Air Quality Related Values Work Group (FLAG) Guidance indicates that photochemical grid models are not the preferred model for evaluating visibility impacts from sources less than 50 km from Class I areas and reference the use of direct plume impact models. However, they are inappropriately citing the FLAG guidance and recommendations, which is not intended to apply to photochemical grid modeling or outside of the permitting context. The FLAG reference to direct plume models (e.g., Plume Visibility Model)³² is only for evaluating visibility impacts under the New Source Review (NSR)/PSD (NSR/PSD) permitting regulations and is not applicable to regional haze analyses. EPA's regional haze regulations and guidance do not require evaluations of direct plume impacts separate from the photochemical modeling analyses used for regional haze visibility analyses. Therefore, the argument is not relevant for the visibility analyses for regional haze.

The Conservation Groups also assert that since the horizontal grid size used

in the VISTAS CAMx modeling was 12 km, it is insufficient to resolve the details of emissions plumes from facilities within 50 km of a Class I area and that the model performance degrades substantially at the close-in distances. The general statement from the Conservation Groups is that model performance substantially degrades within 50 km is not supported by any specific evidence in the comments. Therefore, North Carolina's CAMx PSAT modeling appears reasonable for selecting sources for reasonable progress analyses.

The Conservation Groups separately contend that North Carolina's correlation analysis of the sulfate AoI versus PSAT presented in section 7.6.3 of the Haze Plan is flawed. They point out the scatter in the AoI/PSAT ratio data for distances less than 100 km in figure 7-77 of the Haze Plan and argue this makes the State's correlation conclusions invalid. They also refer to the scatter in the sulfate fractional bias values in figure 7-78 in the Haze Plan and argue the AoI versus PSAT correlation is invalid. EPA disagrees. While there is more scatter between the data points less than 100 km from the Class I area, there is clearly a trend that the AoI values are much larger than the PSAT values within 100 km compared to the ratios for further distances. There is logic to this result due to the way the AoI metric is calculated using the Extinction Weighted Residence Times (EWRT) multiplied by the Emissions (Q) divided Distance (d) (EWRTxQ/d). The EWRT is calculated using the frequency that winds (represented by Hybrid Single-Particle Lagrangian Integrated Trajectory (HYSPLIT) back trajectories) pass over a specific geographic area (represented by a modeling grid cell) on the path to the Class I area.³³ For sources located less than 100 km from a Class I area, there is likely to be a higher frequency of the HYSPLIT back trajectories passing over the 12 km grid cell containing the source, thus the EWRT and AoI value will be larger. The CAMx PSAT modeling is a more refined photochemical modeling approach that calculates the atmospheric fate and transport of the PM precursors and their chemical reactions to form visibility impairing pollutants (e.g., ammonium sulfate). Therefore, compared to the AoI screening process, the refined PSAT technique is less likely to overestimate the visibility impacts for sources located within 100 km of the Class I area. Regarding the scatter of the data resulting in the AoI to PSAT fractional

bias correlation, EPA acknowledges that there is scatter in the data which is reflected in the 0.72 coefficient of determination (R^2) value shown in figure 7-78 in the Haze Plan. However, this level of correlation is not uncommon in these types of modeling data analyses, and the results are reasonable. For these reasons, North Carolina's correlation approach appears valid.

The photochemical modeling employed by VISTAS and North Carolina is the most refined methodology available for evaluating regional haze visibility impacts. Moreover, North Carolina's AoI screening process identified sources located within 50 km of its Class I areas, including the BRPP facility located approximately 17 km from Swanquarter that met the PSAT source selection criteria and underwent an FFA to evaluate reasonable progress. As discussed above, North Carolina demonstrated in section 7.6.3 of the Haze Plan that the AoI screening technique tends to overestimate visibility impacts for sources located within 100 km of a Class I area. Based upon this AoI overestimation, in section 7.7.3 of the Haze Plan, North Carolina explains why some sources located less than 100 km from its Class I areas were not tagged for PSAT modeling and thus were not selected for FFAs. North Carolina's justification regarding why the other sources within 100 km were not selected for FFAs appears reasonable.

Comment 2.e: The Conservation Groups claim that North Carolina did not justify its application of the one percent PSAT threshold and that North Carolina's use of this threshold at the PSAT step biased the process against heavily polluted Class I areas. They note that NPS' comments on the draft SIP revision explain that reliance on the percent-based threshold required source impacts to be 80 times larger for the most visually impaired Class I areas versus the least visually impaired Class I areas in order to be selected for an FFA. They also argue that PSAT tagging was unnecessary because the AoI step already identified the sources that contributed to impairment at Class I areas.

Response 2.e: EPA disagrees with the Conservation Groups' assertion that North Carolina did not justify its application of the one percent PSAT threshold. Section 7.7.1 of the Haze Plan explains the State's rationale for using a one percent PSAT threshold to select sources for a reasonable progress evaluation. Using a percentage-based threshold enabled the State to identify

Roosevelt-Campobello International Park Commission." See 40 CFR 51.301. The U.S. National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), and U.S. Forest Service (USFS) are collectively referred to as the "Federal Land Managers" or "FLMs" throughout this notice.

³²The Plume Visibility Model "PLUVUE" is used for estimating visual range reduction and atmospheric discoloration caused by plumes resulting from the emissions of particles, nitrogen oxides, and sulfur oxides from a single source. See "PLUVUE II" at: <https://www.epa.gov/scram/air-quality-dispersion-modeling-alternative-models>. The User's Guide is available at: <https://gaftp.epa.gov/Air/aqmg/SCRAM/models/other/pluvueii/PluvueUG.pdf>.

³³ See section 7.5 of the Haze Plan for additional detail.

the sources that contribute the largest amount of impact on visibility at the Class I areas. While it is true that using a one percent PSAT threshold identifies sources which contribute larger visibility impacts at the most visually impaired Class I areas than at the least visually impaired Class I areas, North Carolina's targeting of sources with the largest visibility contributions to each Class I area regardless of magnitude of visibility impairment at a Class I area appears reasonable. Use of a percentage-based threshold produced a relative ranking of visibility impairment to allow the State to focus on the sources contributing to the largest amount of visibility impact at each individual Class I area, which has the potential to reduce visibility impacts the most. Regardless of whether a relative or absolute threshold is used, the number of sources selected depends on the chosen value of the threshold. North Carolina's source contribution threshold, which identified the largest sources to evaluate emissions measures using an FFA, appears reasonable.

Regarding the Conservation Groups' assertion that the PSAT tagging process was unnecessary, as the AoI step already identified the sources that contributed to impairment at Class I areas, EPA disagrees with the premise of this comment. The standard is not whether the approach is necessary or required, but rather, whether the approach is reasonable and is reasonably explained.³⁴ The two-step process of screening with the AoI analysis and then applying the more refined PSAT source apportionment modeling to sources that met the initial AoI screening criteria is a sound technical approach for identifying sources to evaluate for reasonable progress. Elements of North Carolina's AoI approach are discussed in EPA's 2019 Guidance as a viable method to assess source's visibility impacts to Class I areas.³⁵ North Carolina, along with many of the VISTAS states, also relied upon the AoI initial screening approach in its first planning period haze plan.³⁶ VISTAS used the AoI analysis as an initial screening step because it is a much simpler and less

resource intensive approach than using PSAT tagging to model hundreds to thousands of potential sources. The AoI screening approach identified a smaller subset of sources that could undergo refined analysis using PSAT modeling. The two-step process of the screening AoI analysis along with using the more refined PSAT source apportionment modeling appears valid and reasonable. Also, as discussed above, states have discretion under the RHR regarding choice of source selection methodology.

Comment 2.f: The Conservation Groups contend that EPA did not address the "significant flaws" in the VISTAS modeling and source selection process and that EPA concluded that North Carolina's selection of three in-state sources was reasonable because it enabled the identification of sources with the largest visibility impacts. They argue that this is contrary to EPA's guidance which states that a source selection threshold that captures only a small portion of a state's contribution to visibility impairment in Class I areas is more likely to be unreasonable and contrary to the CAA which does not authorize states or EPA to select only the largest contributors to visibility impairment. They assert that North Carolina should have used a different selection method with a lower threshold, such as a "Q/d" (emissions (Q) divided by distance to a Class I area (d)) with a threshold of five or lower, to capture the largest portion of in-state sources.

Response 2.f: EPA disagrees with the assertion that North Carolina's selection of the three largest sources contributing to visibility impairment at Class I areas is contrary to EPA's guidance. The PSAT modeling performed by VISTAS found that the three sources selected by North Carolina for FFAs have the largest contribution to visibility impairment of any point sources in the State. As discussed in response 2.a., the PSAT modeling results show that the total cumulative contribution to visibility impairment on the 20 percent most impaired days at North Carolina's Class I areas from all SO₂ and NO_x emitting sources in the State are relatively small, ranging from 1.91 percent for Joyce Kilmer to 8.66 percent for Swanquarter. Given state discretion in selecting sources to evaluate for emissions controls, and since the SO₂ and NO_x emissions from all point sources in North Carolina contribute a relatively small amount to the visibility impairment at its Class I areas, the State's selection of the three largest source contributors to visibility impairment appears reasonable.

Regarding the Conservation Groups' claim that the State should have adopted a different selection method (such as Q/d) with a lower threshold to select more sources in North Carolina being selected, as discussed above, a state is not required to evaluate all sources of emissions in each planning period. Instead, a state may reasonably select a set of sources for an analysis of control measures. Selecting a set of sources for analysis of control measures in each planning period is also consistent with the RHR, which sets up an iterative planning process and anticipates that a state may not need to analyze control measures for all its sources in a given SIP revision.³⁷ Moreover, use of Q/d (which simply involves dividing the quantity of emissions by the distance to a Class I area) does not consider transport direction/pathway, dispersion and photochemical processes, or the particular days that have the most anthropogenic impairment due to all sources.³⁸ Therefore, compared to photochemical modeling, using a simple Q/d technique, as the Conservation Groups suggest, would have resulted in a less accurate quantification of visibility impacts on Class I areas. As discussed in detail above, North Carolina's reliance on VISTAS modeling and the State's source selection methodology were well documented and appear reasonable.

Comment 2.g: The Conservation Groups state that EPA asserts North Carolina's source selection method is reasonable because: (1) SO₂ and NO_x emissions have decreased since the first planning period and are projected to continue decreasing, (2) visibility conditions at in-state Class I areas are projected to improve and have improved since the baseline period, and (3) North Carolina sources do not contribute to any Class I areas above their respective Uniform Rate of Progress (URP). They argue that projected visibility improvement at North Carolina's Class I areas and the fact that those areas are below their respective URPs are not a valid basis to approve the State's flawed selection method. They cite to EPA guidance stating that the URP is not a safe harbor and that states cannot avoid requiring sources to install reasonable controls merely because there have been emissions reductions owing to ongoing air pollution controls since the first planning period or because visibility is projected to improve at Class I areas.

³⁴ See 40 CFR 51.308(f)(2)(i), (iii); see also sections 2 and 2.1 of 2021 Clarifications Memo.

³⁵ EPA's 2019 Guidance at pp. 12–14 describes components of North Carolina's AoI approach, including Q/d, trajectory analyses, residence time analyses, and source apportionment photochemical modeling (e.g., CAMx PSAT).

³⁶ See, e.g., 77 FR 11858, 11869 (February 28, 2012) for a description of North Carolina's AoI approach in the first planning period. On May 24, 2016, EPA fully approved North Carolina's first period regional haze plan, effective June 23, 2016. See 81 FR 32652.

³⁷ See 2019 Guidance at 9.

³⁸ See 2019 Guidance at 13.

Response 2.g: EPA agrees that the URP is not a “safe harbor” to avoid requiring additional reasonable progress measures. However, factual information that all of the North Carolina and nearby Class I areas are below the URP was provided because being below the URP is relevant to whether a state needs to perform a “robust demonstration” based on the requirements in 40 CFR 51.308(f)(3)(ii)(A) and (B). Therefore, a comparison of the URP to projected visibility impairment in 2028 is needed to inform that requirement. Additionally, other information about measured progress towards natural conditions can be relevant in evaluating the source selection process. For example, significant improvements in visibility at impacted Class I areas since the beginning of the second planning period (starting in 2018) is relevant to whether a state is making progress towards natural conditions and may provide information that could influence the selection of sources to be analyzed for emissions controls in the second planning period. Regardless of the visibility information listed in the proposed rule, EPA independently evaluated North Carolina’s SIP documentation and came to the conclusion that North Carolina’s source selection methodology and thresholds for this second planning period appear reasonable for the reasons stated earlier in this response.

For the reasons discussed in responses 2.a through 2.g, North Carolina’s source selection methodology appears reasonable. However, the requirement to consider the four factors in establishing the LTS at 40 CFR 51.308(f)(2) and CAA section 169A(g)(1) encompasses the selection of sources for further analysis, and as discussed above, EPA is disapproving the portions of the Haze Plan addressing 40 CFR 51.308(f)(2) due to the inadequate record associated with the Domtar FFA.

Comment 3: The Conservation Groups assert that EPA incorrectly endorses North Carolina’s decision to exclude consideration of NO_x controls in any FFAs. They contend that VISTAS’ modeling did not accurately reflect the shift in the 20 percent most impaired days and the corresponding increase in the contribution of nitrate to visibility impairment at Southeastern Class I

areas. They state that nitrate concentrations are higher on winter days, nitrate contributes to a substantial portion of light extinction at Great Smoky Mountains and Joyce Kilmer, and nitrate is the biggest contributor to light extinction on multiple 20 percent most impaired days for these areas. They also note EPA’s general expectation that states will, at a minimum, consider both SO₂ and NO_x in this planning period, and assert that there are multiple sources of significant NO_x emissions that North Carolina should have analyzed for NO_x controls.

Response 3: EPA disagrees with this comment. The RHR does not prescribe which visibility impairing pollutants must be evaluated in the FFAs. EPA’s 2019 Guidance on page 11 states: “When selecting sources for analysis of control measures, a state may focus on the PM species that dominate visibility impairment at the Class I areas affected by emissions from the state and then select only sources with emissions of those dominant pollutants and their precursors.” On July 8, 2021, EPA issued a memorandum containing “Clarifications Regarding Regional Haze State Implementation Plans for the Second Implementation Period” (“2021 Clarifications Memo”).³⁹ Section 2.2 of EPA’s 2021 Clarifications Memo recommends that states which do not evaluate SO₂ and NO_x in both source selection and control evaluations show why such consideration of these pollutants would be unreasonable, especially if the state considered both of these pollutants in the first planning period.⁴⁰

North Carolina appears to have followed these recommended approaches here. North Carolina considered both SO₂ emissions (via sulfates visibility impacts) and NO_x emissions (via nitrates visibility impacts) in the source selection process. As part of the Haze Plan, DAQ presented the results of PSAT modeling

³⁹ “Clarifications Regarding Regional Haze State Implementation Plans for the Second Implementation Period.” <https://www.epa.gov/system/files/documents/2021-07/clarifications-regarding-regional-haze-state-implementation-plans-for-the-second-implementation-period.pdf>. EPA Office of Air Quality Planning and Standards, Research Triangle Park (July 8, 2021).

⁴⁰ North Carolina considered SO₂ for FFAs conducted in the first planning period.

conducted by VISTAS to estimate the projected impact of statewide SO₂ and NO_x emissions across all emissions sectors in 2028 on total light extinction for the 20 percent most impaired days in all Class I areas in the VISTAS modeling domain. The result of this process was that while sources were selected for SO₂ control analysis determinations, no sources in North Carolina met the State’s nitrate source selection thresholds, and therefore, North Carolina did not select any sources for a NO_x emissions control evaluation. Contrary to the Conservation Groups’ assertion that North Carolina made a “decision” not to consider NO_x controls in any FFA, it was North Carolina’s application of its source selection process in combination with data and modeling showing that SO₂ and not NO_x is the dominant visibility impairing pollutant that resulted in North Carolina only selecting sources for SO₂ emissions control analyses and not NO_x emissions control analyses.

Additionally, in order to better understand the trends in PM species contributions to visibility impairment, North Carolina examined more recent IMPROVE monitoring data. More recent IMPROVE monitoring data shows that ammonium sulfate remains the dominant visibility impairing pollutant at North Carolina’s Class I areas as discussed in section 2.5.2 of the Haze Plan (particularly figures 2–7 through 2–10 for the 2009–2013 period) and in section 2.6.2 (particularly figures 2–13 through 2–16 for the 2014–2018 period). The 2015–2019 IMPROVE monitoring data (the most recent data available at the time) cited within the Haze Plan (figures 10–1, 10–2, and 10–3) identifies the relative contributions of PM species contributing to the total visibility impairment at the North Carolina Class I areas, which are shown in table 2, below. In spite of increased nitrate contributions on the 20 percent most impaired days (as the Conservation Groups note, often on winter days), as indicated in that table, ammonium nitrate contributions to regional haze at the State’s Class I areas remain relatively low at 8 to 17 percent of the total visibility impairment as compared to ammonium sulfate at 50 to 58 percent.

TABLE 2—2015–2019 SPECIATED IMPROVE MONITORING DATA FOR NORTH CAROLINA'S CLASS I AREAS

	Ammonium sulfate (%)	Ammonium nitrate (%)	Organic carbon (%)	Coarse mass (%)	Elemental carbon (%)	Fine sea salt (%)	Fine soils (%)
Great Smoky Mountains	54	17	17	5	6	1	1
Joyce Kilmer	54	17	17	5	6	1	1
Linville Gorge	57	8	22	5	7	0	1
Shining Rock	58	10	19	5	5	1	1
Swanquarter	50	17	17	7	5	3	1

Additionally, in figure 10–7 of the Haze Plan, North Carolina provides a comparison of the sulfate and nitrate five-year averages for the 2009–2013 and 2015–2019 periods for all the Class I areas in the VISTAS region. North Carolina's conclusion that although nitrate contributions have increased for some Class I areas, sulfate remains the dominant visibility impairing species through 2019, appears reasonable.

Furthermore, in tables 7–20 through 7–24 of the Haze Plan, the State provided a calculation of the sulfate and nitrate EWRT used in the AoI analysis for Great Smoky Mountains, Joyce Kilmer, Linville Gorge, Shining Rock, and Swanquarter for the 20 percent most impaired days, demonstrating that the sulfate EWRT are significantly higher than the nitrate EWRT. This further supports the importance of focusing on SO₂ emissions reductions for this planning period. The State's rationale for focusing on SO₂ controls in the FFAs is summarized in North Carolina's SIP submittal and the NPRM.⁴¹

With respect to the Conservation Groups' assertion that nitrate is the biggest contributor to light extinction on multiple of the 20 percent of most impaired days for these North Carolina Class I areas during the 2014–2018 period (especially on winter days), as described above, the average nitrate contribution across the 20 percent most impaired days is still relatively small. Thus, while nitrate impairment may be relatively high on a particular day, the data that states are required to use for regional haze as specified in 40 CFR 51.301 and 40 CFR 51.308(f)(1) shows ammonium nitrate only contributes 8 to 17 percent of the total visibility impairment (during the 2015–2019 period).

North Carolina's justification for not evaluating sources selected for SO₂ emission control analyses for a separate NO_x emission control analysis appears reasonable for this planning period. The

⁴¹ See Haze Plan, section 2 (particularly figures 2–13 through 2–18), section 7 (particularly figures 7–25 through 7–31), and section 10 (particularly figures 10–1 through 10–7); 89 FR 67353–54.

trends in PM species' contributions to visibility impairment will continue to be evaluated in future planning periods. If the data warrants consideration of NO_x controls in future planning periods, EPA expects that North Carolina will address potential NO_x controls in future regional haze SIP revisions. However, the requirement to consider the four factors in establishing the LTS at 40 CFR 51.308(f)(2) and CAA section 169A(g)(1) encompasses decisions regarding the visibility impairing pollutants evaluated in the FFAs, and as discussed above, EPA is disapproving the portions of the Haze Plan addressing 40 CFR 51.308(f)(2) due to the inadequate record associated with the Domtar FFA.

Comment 4: The Conservation Groups assert that, to correct errors in the source selection method, EPA must require North Carolina to assess additional EGU sources identified by NPS and NPCA with emissions that likely contribute to visibility impairment at Class I areas. The Conservation Groups argue that the State arbitrarily refused to consider cost-effective control efficiency improvements at each Duke Energy EGU and identify specific concerns for DEC—Belews Creek, DEC—Cliffside, DEC—Marshall, and DEP—Roxboro.⁴² They contend that EPA must disapprove the State's reliance on unenforceable emission reductions to avoid conducting FFAs at these EGUs, and that EPA must disapprove the State's refusal to conduct FFAs for sources that the State's analysis shows are reasonably anticipated to contribute to visibility impairment. These specific arguments are addressed in comments 4.a through 4.g, below.

⁴² The Conservation Groups' letter identifies five Duke Energy EGUs on pages iv and 46 and identifies four Duke Energy EGUs in the Table of Contents on page v and in sections III.D.1.i–iv of the letter. The five Duke Energy EGUs listed on pages iv and 46 that the Conservation Groups recommend to be evaluated for emissions controls are: DEC—Belews Creek, DEC—Cliffside, DEC—Marshall, DEP—Roxboro, and DEP—Mayo. Sections III.D.1.i–iv do not include recommendations regarding improved control efficiencies specific to DEP—Mayo.

Comment 4.a: The Conservation Groups contend that states must consider recent actual and projected emission rates to determine if a source could reasonably attain a lower rate with existing measures. For DEC—Belews Creek, DEC—Cliffside, DEC—Marshall, and DEP—Roxboro, the Conservation Groups assert errors in North Carolina's analysis of potential emission reductions for NO_x and SO₂ and that, in each instance, EPA must disapprove the State's analysis, conduct its own FFA, and require cost effective control upgrades in a FIP.⁴³ The alleged errors for these four facilities are addressed in comments 4.b through 4.e, below.

Response 4.a: As explained in response 2.a and in the NPRM (89 FR 67346), the RHR does not require states to select and consider controls for all sources, all source categories, or any or all sources in a particular source category. Nor does the RHR expressly specify criteria for minimum source selection thresholds. States have discretion to choose reasonable source selection criteria, and sources that meet the state's criteria are selected for an evaluation of potential control options for specific visibility impairing pollutants by applying the four statutory factors in CAA section 169A(g)(1), which is referred to as an FFA.

The Conservation Groups contend that DEC—Marshall exceeded the AoI threshold set by North Carolina, but EPA notes that no Duke Energy EGU exceeded the State's PSAT threshold at any Class I area. Therefore, North Carolina did not evaluate any Duke Energy EGU for potential emissions

⁴³ The Conservation Groups provide the following information for these four Duke Energy EGUs: DEC—Belews Creek contributes to up to 2.01 percent of the sulfate plus nitrate impairment at Linville Gorge and up to 1.56 percent of the sulfate plus nitrate impairment at Shining Rock; DEC—Cliffside contributes to up to 1.85 percent of the sulfate plus nitrate impairment at Shining Rock and 2.49 percent at Linville Gorge; DEC—Marshall contributes to up to 6.73 percent of the sulfate plus nitrate impairment at Linville Gorge and up to 2.68 percent of the sulfate plus nitrate impairment at Shining Rock; and DEP—Roxboro contributes to up to 2.23 percent of the sulfate plus nitrate impairment at Swanquarter.

controls. This approach is consistent with the State's source selection results summarized in tables 7–30 through 7–35,⁴⁴ and North Carolina's decision not to assess Duke Energy EGUs for control efficiency improvements because they did not meet the State's source selection criteria appears reasonable.

As described in the 2019 Guidance,⁴⁵ North Carolina completed an additional reasonableness check on their source selection process by examining the unselected sources to see if there were any “uncontrolled or lightly controlled facilities that were large contributors to anthropogenic light extinction,” and found none.⁴⁶ In the NPRM (89 FR 67359), EPA documented an analysis that further examined the Duke Energy sources to verify North Carolina's claim that there were no uncontrolled or lightly controlled sources that were not selected. EPA evaluated the existing SO₂ controls at DEC—Belews Creek, DEC—Cliffside, DEC—Marshall, DEP—Mayo, and DEP—Roxboro. EPA analyzed whether these EGUs are well controlled for SO₂ and whether any cost-effective new emissions reduction measures for SO₂ would have likely resulted from a FFA had these sources met the State's source selection criteria.⁴⁷ Based on that analysis, it appears reasonable to assume that a FFA would likely result in the conclusion that no further SO₂ emissions controls are needed for these sources. All of these EGUs are subject to the Mercury and Air Toxics Standards (MATS) rule⁴⁸ alternative SO₂ emission limit of 0.2 pound (lb)/million British thermal units (MMBtu) and are equipped with wet flue gas desulfurization (WFGD) that routinely achieve a high SO₂ control effectiveness (approximately 93.8–99.2 percent).⁴⁹ EPA did not evaluate NO_x controls for these EGUs because North Carolina's conclusion that ammonium sulfate continues to be the dominant visibility impairing pollutant at North Carolina's

Class I areas appears reasonable. See section IV.C.2.a of the NPRM and response 3.

Comment 4.b: The Conservation Groups argue that North Carolina's analysis of potential emission reductions for DEC—Marshall suffer from the following errors regarding SO₂: (1) the wet scrubbers are operated erratically; (2) the units have the ability to continuously operate well below 0.10 lb/MMBtu for SO₂; (3) “EPA has concluded that underperforming wet scrubbers should be evaluated at 98 percent control (with a floor of 0.04 lb/MMBtu), and 95 percent control (with a floor of 0.06 lb/MMBtu) for dry scrubbers;” (4) “even lower limits can be achieved;” and (5) “Without any capital upgrade cost (and likely minimal operating and maintenance costs) the DEC-Marshall units are likely quite capable of much better SO₂ and NO_x removal efficiencies that could likely be achieved with cost-effective upgrades.” They also argue that North Carolina's analysis of potential NO_x emission reductions suffer from the following errors: (1) “Units 1, 2, and 4 are equipped with selective non-catalytic reduction (SNCR) systems that have achieved lower NO_x emission levels of approximately 0.20 lb/MMBtu, ‘with some months significantly below that level;’” (2) the selective catalytic reduction (SCR) system for Unit 3 is “operated very erratically, but has demonstrated the ability from 2010–2011 to consistently operate below 0.05 lbs/MMBtu;” and (3) “Without any capital upgrade cost (and likely minimal operating and maintenance costs) the DEC—Marshall units are quite capable of much better NO_x removal efficiencies with likely cost-effective upgrades.

Response 4.b: Regarding potential NO_x control upgrades at DEC—Marshall, North Carolina's decision to focus on SO₂ emission controls in the second planning period appears reasonable given the documented dominance of sulfate contributions to visibility impairment at North Carolina's Class I areas. See section IV.C.2.a of the NPRM and response 3. Thus, it appears reasonable to conclude that even if DEC—Marshall had met the State's source selection criteria, no NO_x emissions control analyses would be necessary for reasonable progress during this planning period. Additionally, North Carolina did not select this facility, and therefore, no FFA information is available. However, EPA's analysis confirms that the units are not uncontrolled or lightly controlled, are subject to the MATS rule alternative SO₂ emission limit of 0.2 lb/MMBtu, and are equipped with WFGD

that routinely achieve a high SO₂ control effectiveness (approximately 93.8 to 97.9 percent).⁵⁰

Comment 4.c: The Conservation Groups argue that North Carolina's analysis of potential emission reductions at DEC—Belews Creek suffer from the following errors regarding SO₂: (1) the wet scrubbers “are underperforming, with emission rates, at times, spiking above 0.30 lb/MMBtu;” (2) the scrubbers “have demonstrated the capability to consistently control SO₂ to 0.05 lbs/MMBtu or better on a monthly average basis for both units;” (3) “[s]imply increasing the amount of reagent used would be very cost-effective, require little or no capital investments, and would likely achieve much lower emissions;” and (4) the “assumption that SO₂ emissions will be reduced from 4,946 to 1,385 tons annually is not supported in the record, and not based on any enforceable requirement.” They also argue that North Carolina's analysis of potential emission reductions suffer from the following errors regarding NO_x: (1) the “2028 NO_x emission projections for Belews Creek are significantly less than the facility has emitted in recent years, yet there are no enforceable emission limitations in the SIP Revision that would ensure those 2028 estimates;” (2) the “SCR systems perform erratically, with emissions above 0.40 lb/MMBtu at times;” (3) “Belews Creek could likely achieve NO_x emission rates of 0.05 lbs/MMBtu or better on a consistent basis with better catalyst and absorber management;” and (4) “[s]imple upgrades to the SCR system would likely be cost-effective.”

Response 4.c: Regarding potential NO_x control upgrades at DEC—Belews Creek, North Carolina's decision to focus on SO₂ emission controls in the second planning period appears reasonable given the documented dominance of sulfate contributions to visibility impairment at North Carolina's Class I areas. See section IV.C.2.a of the NPRM and response 3. Thus, it appears reasonable to conclude that even if DEC—Belews Creek had met the State's source selection criteria, no NO_x emissions control analyses would be warranted.

Regarding the original and revised 2028 SO₂ emissions projections of 4,946 tpy and 1,385 tpy, respectively, for

⁴⁴ Table 7–29 of the Haze Plan lists facilities that met North Carolina's Aof threshold and thus were selected by the State for PSAT tagging. Tables 7–30 through 7–35 provide PSAT results for the North Carolina Class I areas.

⁴⁵ See 2019 Guidance at p. 19 (“For example, it may be difficult to show reasonableness of a threshold set so high that an uncontrolled or lightly controlled source that is one of the largest contributors to anthropogenic light extinction at a Class I area is excluded.”).

⁴⁶ See Haze Plan at p. 251.

⁴⁷ Between the years 2017–2022, the calculated annual FGD SO₂ control efficiencies for DEP—Mayo Unit 1A were between 96.3 and 97.9 percent.

⁴⁸ The MATS rule is located at 40 CFR part 63, subpart UUUUU.

⁴⁹ See North Carolina Duke Energy scrubber efficiency data file that is included in the docket for this action. See also 89 FR 67359; 2019 Guidance at 23.

⁵⁰ Between 2017 to 2022, the yearly average FGD SO₂ control efficiencies for Unit 1 ranged from 94.7 to 96.2 percent, Unit 2 ranged from 93.8 to 96.1 percent, Unit 3 ranged from 95.2 to 97.1 percent, and Unit 4 ranged from 96.7 to 97.9 percent. See North Carolina Duke Energy scrubber efficiency data file that is included in the docket for this action.

DEC—Belews Creek listed in table 7–41 of the Haze Plan, as explained in responses 1 and 2.c, North Carolina used the best assumptions available at the time of SIP development to project the 2011 base year emissions out to 2028 for sources in the State, including DEC—Belews Creek. North Carolina did document its 2028 point source emissions projection methodology in appendix B–3 of the Haze Plan. Table 9 in appendix B–3 shows that the 1,385 tpy 2028 projected SO₂ value in table 7–41 of the plan is from a blend of two versions (2.7 and 16.0) of the Eastern Regional Technical Advisory Committee (ERTAC) EGU Emissions Projection Tool⁵¹ that was used to create the VISTAS 2028elv5 emissions inventory. As stated in response 2.c, North Carolina’s and EPA’s projected 2028 emissions projections, summarized in appendix B–3 of the Haze Plan, are similar. Therefore, North Carolina’s 2028 SO₂ emissions projections for DEC—Belews Creek appear to be reasonable estimates.

Additionally, North Carolina did not select this facility, and therefore, no FFA information is available. However, EPA’s analysis confirms that the units are not uncontrolled or lightly controlled, are subject to the MATS rule alternative SO₂ emission limit of 0.2 lb/MMBtu, and are equipped with WFGD that routinely achieve a high SO₂ control effectiveness (approximately 94.1 to 96.5 percent).⁵²

Comment 4.d: The Conservation Groups argue that North Carolina’s analysis of potential emission reductions for DEP—Roxboro suffer from the following errors regarding SO₂: (1) the “projections for 2028 SO₂ are not based on historical data, but instead rely on unenforceable, predicted emission reductions, from 6,665 in 2020, to 2,258 tons in 2028;” (2) the wet scrubbers “are underperforming with emissions as high as 0.35 lb/MMBtu;” (3) the scrubbers “have demonstrated the capability to consistently control SO₂ to approximately 0.075 lb/MMBtu or better on a monthly average;” and (4) there are “likely very cost-effective scrubber upgrades available.” They also argue that North Carolina’s analysis of potential emission reductions suffer from the following errors regarding NO_x: (1) the “projections for 2028 NO_x

emissions are not based on historical data, but instead rely on unenforceable, predicted emission reductions;” (2) the “SCR systems perform erratically, with emissions sometimes spiking to nearly 0.5 lb/MMBtu, which is far worse than the rates commonly achievable and required of well-functioning SCR systems;” (3) the “SCR systems have ‘all have demonstrated the ability to continuously operate at approximately 0.10 lbs/MMBtu;’” and (4) there are “likely very cost-effective control upgrades available.”

Response 4.d: Regarding potential NO_x control upgrades and SCR performance at DEP—Roxboro, North Carolina’s decision to focus on SO₂ emission controls in the second planning period appears reasonable given the documented dominance of sulfate contributions to visibility impairment at North Carolina’s Class I areas. See section IV.C.2.a of the NPRM and response 3. Thus, it appears reasonable to conclude that even if DEP—Roxboro had met the State’s source selection criteria, no NO_x emissions control analyses would be warranted.

Regarding the original and revised 2028 SO₂ emissions projections of 6,665 tpy and 2,258 tpy, respectively, for DEP—Roxboro listed in table 7–41 of the Haze Plan, as explained in responses 1 and 2.c, North Carolina used the best assumptions available at the time of SIP development to project the 2011 base year emissions out to 2028 for sources in the State, including DEP—Roxboro. North Carolina did document its 2028 point source emissions projection methodology in appendix B–3 of the Haze Plan. Table 9 in appendix B–3 shows a 2028 projection of 6,666 tpy SO₂ for DEP—Roxboro is derived from ERTAC2.7 (2011 base year) whereas the VISTAS 2028 elv5 uses a 2,258 tpy SO₂ 2028 emissions projection. As stated in response 2.c, North Carolina’s and EPA’s projected 2028 emissions projections, summarized in appendix B–3 of the Haze Plan, are similar. Therefore, North Carolina’s 2028 SO₂ emissions projections for DEP—Roxboro appear to be reasonable estimates.

Additionally, North Carolina did not select this facility, and therefore, no FFA information is available. However, EPA’s analysis confirms that the units are not uncontrolled or lightly controlled, are subject to the MATS rule alternative SO₂ emission limit of 0.2 lb/MMBtu, and are equipped with WFGD that routinely achieve a high SO₂

control effectiveness (approximately 94.3 to 98.8 percent).⁵³

Comment 4.e: The Conservation Groups argue that North Carolina’s analysis of potential emission reductions from DEC—Cliffside suffer from the following errors regarding SO₂: (1) the “scrubber performance is erratic, with SO₂ spikes at Unit 5 periodically exceeding 0.35 lb/MMBtu;” (2) “Nevertheless, each of the scrubbers have demonstrated an ability to consistently achieve SO₂ emissions of 0.04 lb/MMBtu;” and (3) “[V]ery cost-effective controls are available for these units for likely just the increase in reagent,’ yet the State failed to even consider such upgrades.” They also argue that North Carolina’s analysis of potential emission reductions suffer from the following errors regarding NO_x: (1) the “SCR systems are similarly irregular, with spikes at Unit 5 exceeding 0.30 lb/MMBtu NO_x;” (2) the “SCR systems have demonstrated an ability to consistently achieve NO_x emissions of 0.05 lb/MMBtu;” and (3) “Cost-effective improvements, such as optimizing the catalyst controls would likely be very cost-effective, but the State failed to even run such cost calculation.”

Response 4.e: Regarding potential NO_x control upgrades and SCR performance at DEP—Cliffside, North Carolina’s decision to focus on SO₂ emission controls in the second planning period appears reasonable given the documented dominance of sulfate contributions to visibility impairment at North Carolina’s Class I areas. See section IV.C.2.a of the NPRM and response 3. Thus, it appears reasonable to conclude that even if DEP—Cliffside had met the State’s source selection criteria, no NO_x emissions control analyses would be warranted. Additionally, North Carolina did not select this facility, and therefore, no FFA information is available. However, EPA’s analysis confirms that the units are not uncontrolled or lightly controlled, are subject to the MATS rule alternative SO₂ emission limit of 0.2 lb/MMBtu, and are equipped with WFGD that routinely achieve a high SO₂ control effectiveness (96.2 to 99.2 percent).⁵⁴

⁵³ Between 2017 to 2022, the yearly average FGD SO₂ control efficiencies for Unit 1 ranged from 95.9 to 97.1 percent, Unit 2 ranged from 94.3 to 96.6 percent, Unit 3A ranged from 98.2 to 98.8 percent, and Unit 4A ranged from 97.1 to 98.3 percent. See North Carolina Duke Energy scrubber efficiency data file that is included in the docket for this action.

⁵⁴ Between 2017 to 2022, the yearly average FGD SO₂ control efficiencies for Unit 5 ranged from 96.2 to 98.6 percent and Unit 6 ranged from 98.0 to 99.2

⁵¹ See <https://www.epa.gov/air-emissions-inventories/eastern-regional-technical-advisory-committee-ertac-electricity>.

⁵² Between 2017 to 2022, the yearly average FGD SO₂ control efficiencies for Unit 1 ranged from 94.1 to 96.5 percent and Unit 2 ranged from 95.0 to 96.2 percent. See North Carolina Duke Energy scrubber efficiency data file that is included in the docket for this action.

Comment 4.f: The Conservation Groups assert that EPA must disapprove North Carolina's reliance on unenforceable, hypothetical emission reductions for the Duke Energy EGUs to avoid conducting control analyses, to demonstrate reasonable progress, and to achieve the State's reasonable progress goals (RPGs). They note that the CAA and RHR require the Haze Plan to include enforceable limitations and other control measures to meet the RPGs for each Class I area and that EPA has made it clear that, to the extent that a state declines to evaluate pollution controls to reduce haze for any source based on that source's planned decline in utilization or reductions in emissions, it must incorporate those operating parameters or assumptions as enforceable limitations into the SIP.

The Conservation Groups disagree with North Carolina's statement that the "obligation to make reductions permanent and enforceable does not extend to any control or emissions reduction determination outside of the reasonable progress/four-factor analysis." The Conservation Groups state that the requirement to ensure that emission reductions are enforceable stems from the CAA and the RHR itself and quote the 2021 Clarification Memo for the proposition that existing and "on-the-way" measures must be included in the SIP if they are necessary for reasonable progress. The Conservation Groups also contend that neither the State, EPA, nor the public can verify that reasonable progress will be made if the State's assumed pollution reductions to achieve reasonable progress are not enforceable.

Response 4.f: EPA disagrees with the Conservation Groups assertion that North Carolina's analysis inappropriately relied on unenforceable emission reductions to avoid conducting control analyses for the DEC—Belews Creek, DEC—Cliffside, DEC—Marshall, DEP—Roxboro, and DEP—Mayo. North Carolina followed the recommendations in the 2019 Guidance to select sources based on 2028 emissions projections.⁵⁵ As explained in the NPRM, the State (through VISTAS) developed a 2011 statewide base year emissions inventory which was used to project emissions out to 2028, the end of the second planning

percent. See North Carolina Duke Energy scrubber efficiency data file that is included in the docket for this action.

⁵⁵ See 2019 Guidance at p. 17 ("Generally, we recommend that states use estimates of 2028 emissions (resolved by day and hour, as appropriate) to estimate visibility impacts (or related surrogates) when selecting sources, rather than values of recent year emissions.").

period. See 89 FR 67356. The accuracy of the 2028 emissions projections for these five Duke Energy EGUs is discussed in response 2.c. North Carolina relied on sophisticated PSAT modeling to identify visibility impacts of the State's AoI sources to any Class I areas, and no Duke Energy EGU met the State's PSAT threshold for sulfate or nitrate. Because none of these Duke Energy EGUs met the State's source selection criteria, North Carolina's decision to not consider whether control measures at these sources are necessary for reasonable progress appears reasonable. With respect to arguments that the RPGs must be developed based on enforceable measures, the RPGs reflect a state's best estimate of visibility conditions in the Class I area at the end of planning period (e.g., 2028 for the second planning period). Under the RHR, RPGs should account for all measures included in a state's LTS, other states' LTSs, as well as the implementation of other CAA requirements, including non-SIP based requirements. The measures underlying the RPGs—except for the LTS measures found necessary for reasonable progress—are not required to be adopted into the SIP.

Regarding the statement that "[t]he RHR provides that the measures necessary to the State's long-term strategy for ensuring reasonable progress and its reasonable progress goals must be 'as a result of [] enforceable emissions limitations . . .'" EPA agrees.⁵⁶ As explained in the NPRM (89 FR 67347), 40 CFR 51.308(f)(2)(i) requires states to determine the emission reduction measures for sources that are necessary to make reasonable progress by considering the four factors. Pursuant to 40 CFR 51.308(f)(2), measures that are determined necessary to make reasonable progress toward the national visibility goal must be included in a state's LTS and in its SIP. As noted above, however, the Duke Energy EGUs did not meet the State's source selection criteria, and therefore, North Carolina's decision to not to evaluate them for controls appears reasonable.

Regarding the Conservation Groups' references to the 2021 Clarification

⁵⁶ "The 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)." See 40 CFR 51.308(f)(2). Measures necessary to make reasonable progress must be incorporated into the SIP and LTS. The CAA also requires that States incorporate these measures into their SIPs. See 42 U.S.C. 7491(b)(2), (b)(2)(B). The State may also elect to include additional measures that address regional haze, beyond those identified as necessary to make reasonable progress, to strengthen the SIP.

Memo regarding in-place and on-the-way measures, these references relate to measures necessary for reasonable progress. They do not apply to the Duke Energy EGUs because these units did not meet the State's source selection criteria, and therefore, they do not have measures necessary for reasonable progress. As a result, no measures must be adopted into the SIP for these EGUs.

North Carolina provided a summary in table 7–43 of the SO₂ and NO_x controls, operating status, and applicable Federal rules for Duke Energy facilities with coal units.⁵⁷ There is no indication in the Haze Plan that the State is relying upon these existing measures listed in table 7–43 as existing effective controls pursuant to the 2019 Guidance at pages 22–25. In fact, North Carolina states on page 254 of its Haze Plan that "Based on current controlled and projected 2028 emissions, the NCDAQ concluded that it was not necessary to request that the facilities complete a reasonable progress/four-factor analysis to demonstrate progress toward achieving the modeled 2028 RPGs discussed in Section 8 of this SIP."

Comment 4.g: The Conservation Groups contend that North Carolina arbitrarily and unlawfully refused to conduct FFAs for the Duke Energy EGUs despite their undisputed contribution to visibility impairment in numerous Class I areas. They provide the following arguments to support this contention. First, the text of the CAA and the RHR require the State to evaluate the four statutory factors for any source reasonably anticipated to cause or contribute to any visibility impairment at any Class I area. The Conservation Groups state that North Carolina improperly rewrites the statute and regulation to require consideration of the four factors only when a source "significantly contributes" to visibility impairment. Second, the structure of the CAA makes clear the requirement to implement emission reductions to ensure reasonable progress is not contingent on whether a source significantly contributes to visibility impairment. They note that Congress expressly uses the modifier "significant" in numerous sections of the CAA and argue that the modifier is conspicuously absent from CAA section 169A. Third, the purpose of the CAA's visibility provisions to reduce and ultimately eliminate "any impairment of visibility" makes clear that Congress "intended for the term 'contributes' as used in 7491(b)(2) to encompass smaller

⁵⁷ See section 7.7.3.2, "Facilities Not Selected for PSAT Modeling," of the Haze Plan.

impacts than would be required to regulate only those sources that contribute ‘significantly.’” They claim that North Carolina “effectively rewrites those provisions of the Act and requires only the evaluation of emissions that it deems significant or large enough.” The Conservation Groups acknowledge that there is no bright line test for assessing contribution under the RHR, but state that EPA has “made clear that a state’s reasonable progress analysis must consider a meaningful set of sources and controls that impact visibility” and that if a state fails to do so, EPA must disapprove the SIP revision and issue a FIP.

Response 4.g: EPA agrees that CAA section 169A and the RHR do not use the phrases “significant contribution” or “significantly contribute” when discussing the four factors. The CAA and RHR do not explicitly list factors that a state must or may not consider when selecting the sources for which it will determine what control measures are necessary to make reasonable progress.⁵⁸ The appropriate threshold for selecting sources may reasonably differ across states and Class I areas due to varying circumstances. In setting a threshold, a state may consider the number of emissions sources affecting the Class I areas at issue, the magnitude of the individual sources’ impacts, and the amount of anthropogenic visibility impairment at the Class I areas.⁵⁹ As discussed in response 2.a, North Carolina considered the magnitude of the individual sources’ impacts at Class I areas using Aof screening and PSAT modeling which appears to be a reasonable approach to identifying sources in the State that are reasonably anticipated to cause or contribute to visibility impairment in any Class I area.

Comment 5: The Conservation Groups assert that EPA must disapprove North Carolina’s SIP revision because the public was not given the opportunity to comment on VISTAS modeling and other work products when they were being developed. Instead, they contend that North Carolina presented the VISTAS work products in its draft SIP as final products that are not subject to change, regardless of public input. The Conservation Groups also assert that a state must make its regional haze SIP and the associated technical work products from the RPOs that support the SIP available for public notice and comment. Additionally, they contend that when RPOs, like VISTAS, receive funding from EPA to develop work products that states rely on when

developing their regional haze SIPs, EPA must use its grant oversight authority to ensure the RPOs’ work products comply with all statutory and regulatory requirements.

Response 5: EPA agrees that technical information supporting North Carolina’s regional haze plan should be available for public review and comment but disagrees that the public was not given an opportunity to comment on relevant VISTAS work products relied upon by North Carolina for the Haze Plan. On August 30, 2021, the State opened the public comment period on its proposed Haze Plan through October 15, 2021, and on October 6, 2021, it held a public hearing on the Haze Plan. This proposed Haze Plan included VISTAS work products (located in appendices A–E) that the State relied upon in developing its plan.

North Carolina exceeded the minimum public notice and comment requirements for SIP revisions which are set forth in 40 CFR part 51.⁶⁰ The CAA does not require states to engage in public notice and comment while they are developing modeling and other technical work products for use in preparing SIP revisions.

Furthermore, the RHR allows states to rely on technical analyses developed by RPOs when that analysis is approved by all state participants, does not require RPOs to provide notice and comment for its work products, and does not require states to provide notice and comment during the technical development of their regional haze SIPs. See 40 CFR 51.308(f)(2)(iii). The RHR does require states to document the technical basis, including modeling, monitoring, cost, engineering, and emissions information, on which the State relied to determine the emission reduction measures that are necessary to make reasonable progress in each Class I area it affects. See *id.* As discussed above, the Haze Plan includes the VISTAS work products relied upon by the State.

EPA also disagrees with the comment that North Carolina “communicated in its Haze Plan that the VISTAS products on which the State relied for source selection and in setting its reasonable progress goals were *complete and done*” and presented the VISTAS work products as “final products that would not be changed, regardless of any public input.” The Conservation Groups did not cite to any such express language in the Haze Plan. To the extent that North Carolina relied on the VISTAS’ work products to satisfy regional haze

requirements, those work products were subject to public notice and comment at the state level; EPA evaluated the relevant aspects of the VISTAS work products as they relate to the review of the State’s Haze Plan; they were subject to notice and comment as part of EPA’s proposed rulemaking, and EPA would not fully approve a SIP revision that it determined does not meet regional haze requirements due to flawed work products.

With respect to the comment concerning grant obligations and “grant oversight authority,” EPA has not directly provided any grant money to VISTAS for the second planning period. Regardless, EPA disagrees with the Conservation Groups’ comments regarding the VISTAS work products for the reasons discussed in this notice of final rulemaking.

Comment 6: The Conservation Groups assert that EPA shirks its duty to review North Carolina’s source-specific FFAs. They state that EPA proposes to “rubber stamp” the SIP submission without engaging in any meaningful and independent analysis of North Carolina’s FFAs to ensure they comply with the CAA and the RHR. Moreover, they assert that “[d]espite EPA’s stated expectations for this planning period, North Carolina does not require any of the sources to adopt additional control measures to make reasonable progress” and that EPA accepts North Carolina’s decision to ignore “readily available, feasible, and cost-effective controls” which violates the CAA and RHR. The Conservation Groups’ specific comments on the FFAs for Domtar, PCS, and BRPP are addressed in comments 7 through 9, below.

Response 6: For various reasons, EPA disagrees with the Conservation Groups’ contentions. EPA’s partial approval and partial disapproval of the Haze Plan is a proper exercise of EPA’s authority under the CAA. Congress crafted the CAA to provide for states to take the lead in developing implementation plans, but balanced that decision by requiring EPA to review the plans to determine whether a SIP meets the requirements of the CAA. When reviewing SIPs, EPA must consider not only whether the state considered the appropriate factors in making decisions, but also whether it acted reasonably in doing so. In undertaking such a review, EPA does not usurp the state’s authority but ensures that such authority is reasonably exercised.

Contrary to the comment that the Agency “shirks” its CAA obligations, EPA has performed its duties with diligence and integrity. EPA carefully evaluated the Haze Plan and the

⁵⁸ See 2019 Guidance at 10.

⁵⁹ See *id.* at 19.

⁶⁰ See 40 CFR 51.102, 51.103, and 40 CFR part 51, appendix V, 2.1.

associated record and engaged in a thorough analysis of each control option, including each of the underlying cost assumptions used in the calculations. EPA independently evaluated each FFA, including costs, and compared each FFA's control determination against EPA's "Air Pollution Control Cost Manual" (CCM).⁶¹ After carefully considering the submitted comments and the entirety of the record, EPA is now shifting from its initial proposal of a partial approval and partial conditional approval to a partial approval and partial disapproval. At proposal, EPA specifically solicited comment on the adequacy of North Carolina's analyses, including the FFAs and determination of controls necessary for reasonable progress, and whether the State met the requirements of 40 CFR 51.308(f)(2)(i) through (iv). See 89 FR 67358. The partial disapproval represents a logical outgrowth of EPA's proposal which specifically solicited comments on these determinations and conclusions and reflects EPA's receipt and consideration of public comments. EPA responds to the Conservation Groups' specific comments on the FFAs for Domtar, PCS, and BRPP in responses 7 through 9, below.

Comment 7: The Conservation Groups provided several comments on the Domtar FFA.⁶² These comments are summarized in comments 7.a through 7.c below.

Comment 7.a: The Conservation Groups argue that EPA cannot approve North Carolina's flawed FFA for Domtar and must require the installation of reasonable and cost-effective controls via a FIP. They contend that North Carolina "baldly rejected wet scrubber controls as not cost-effective" at a cost of \$3,660/ton SO₂ removed for the No. 2 Hog Fuel Boiler (HFB2) and that EPA did not provide any rationale to support approval of the State's determination. They also contend that EPA does not acknowledge multiple errors in North Carolina's FFA of wet scrubber controls for HFB2, summarized as follows.

Control Efficiency—The Conservation Groups state that North Carolina underestimated the control efficiency that a wet scrubber can achieve. They note that modern wet scrubbers can achieve at least 98 percent control

efficiency, the vendor providing the wet scrubber quote states that its scrubbers can achieve up to 99 percent control, and the FFA does not explain these discrepancies with the 95 percent control efficiency assumed by North Carolina.

Costs—The Conservation Groups assert that North Carolina overestimated the cost of a wet scrubber by including unjustified or undocumented costs. They allege that the State unreasonably accepted the use of an inflated 1.3 retrofit factor, which Domtar attributed to "unanticipated delays for installing a wet scrubber." However, they contend that there is no indication in the FFA that retrofitting HFB2 with a wet scrubber is unusual and the delays are already considered in the contingency fee. The Conservation Groups also argue that the State, without adequate explanation or documentation, included sales tax although pollution control equipment is tax exempt, increased the quoted freight and construction management charges, and included a new induced fan at a cost of \$3,000,000.

Cost Effectiveness—The Conservation Groups assert that, after correcting for the control analysis errors, the cost effectiveness values are \$2,968/ton without a new induced fan and \$3,244/ton with a fan. They contend that these cost-effectiveness values and the \$3,660/ton value are below the cost threshold established by other states, claiming that Colorado, Nevada, and New Mexico used a threshold of \$10,000/ton of pollution reduced. While acknowledging the CAA does not require the State to use a bright line rule, they contend that the law requires states to explain why it has exercised its discretion in a given matter. The Conservation Groups argue that North Carolina must establish a threshold, or explain and justify some other objective measure, for determining cost-effectiveness that is in line with other states' chosen measures and apply that threshold consistently across its FFAs. They also note that EPA proposed to disapprove other second planning period SIPs where the states "applied arbitrary cost-effectiveness threshold or rejected controls that were reasonable and cost-effective."

Visibility Impact—The Conservation Groups argue that North Carolina and EPA disingenuously suggested that the State did not utilize visibility impact when rejecting wet scrubber controls for Domtar. They contend that North Carolina improperly considered visibility as a fifth factor in its decision to reject reasonable and cost-effective controls, which they state is contrary to EPA's previous assertions and Congress'

express exclusion of visibility impact as one of the four statutory reasonable progress factors. Therefore, the Conservation Groups argue that North Carolina's consideration of visibility impacts violates the CAA and the RHR and note that EPA has proposed to disapprove second planning period SIPs where states improperly relied on the lack of visibility benefit to reject reasonable controls.

Response 7a: EPA agrees in part and disagrees in part with the assertion that North Carolina did not provide an adequate rationale to support the State's determination that wet scrubber controls at HFB2 are not cost-effective. As described in more detail below, EPA disagrees with certain characterizations by the Conservation Groups about the rejected controls and cost analysis. At proposal, EPA specifically solicited comment on the adequacy of DAQ's analyses, including the FFAs and determination of controls necessary for reasonable progress, and whether the State met the requirements of 40 CFR 51.308(f)(2)(i) through (iv). See 89 FR 67358. After further consideration of the analyses, as well as the comments received, EPA agrees that overall, North Carolina did not provide an adequate rationale to explain why the wet scrubber controls were not cost-effective, and therefore, not included in the LTS as being necessary for reasonable progress. EPA's evaluation of the State's FFA, and explanation for why the justification is inadequate, is provided below. Due to the inadequate record substantiating the FFA conclusion regarding HFB2, together with the concerns discussed in response 7.b regarding the lack of enforceable measures in the record for HFB1, EPA is disapproving the portions of the Haze Plan addressing 40 CFR 51.308(f)(2) and (3) and (i)(2) through (4).

EPA's first basis for disapproval of North Carolina's LTS is the inadequate justification that the wet scrubber controls are not cost-effective for HFB2. There is no requirement in the CAA or the RHR for states to establish bright line cost effectiveness thresholds when evaluating control costs in FFAs. The CAA and the RHR require states to evaluate the costs of compliance, and EPA's 2019 Guidance recommends that states follow the recommendations in EPA's CCM to facilitate apples-to-apples comparisons of different controls options for the same source, and comparisons across different sources.⁶³

As described in section 7.8 and appendix I of the Haze Plan, the State did not set a specific cost per ton

⁶¹ The CCM is available at: <https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/cost-reports-and-guidance-air-pollution>.

⁶² The Conservation Groups erred in reporting the 2020 NEI SO₂ emissions for Domtar at p. 28 of their comment letter. According to the 2020 NEI, the facility emitted 1,054 tons for Domtar, not 1,504 tons. The 2020 NEI is located at: <https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data>.

⁶³ See 2019 Guidance at 31.

threshold for the cost of compliance factor, but rather analyzed each facility using the information in EPA's CCM and 2019 Guidance to determine whether a given control measure is cost-effective. North Carolina determined the cost-effectiveness value for a wet scrubber on HFB2 to be \$3,660/ton SO₂, which is somewhat higher than the values calculated by the Conservation Groups (\$3,244/ton with a new induction fan and \$2,968/ton without a new induction fan). As explained below, regardless of the range of costs presented by both the State and the Conservation Groups, EPA finds that North Carolina did not adequately justify why a wet scrubber emissions control in that cost range was not necessary for reasonable progress.

North Carolina states in appendix I that HFB2 is a unique set-up. It combusts fuels such as, lignin, natural gas, biomass fuel (including paper cores and bleached and unbleached pulp stock), No. 2 fuel oil, used oil, sludge, gases collected in the High-Volume Low-Concentration (HVLC) system, Low-Volume High-Concentration gases, and stripper off gases, and it is used as a control device for several process gas streams at the facility. The State reviewed the RACT/BACT/LAER Clearinghouse⁶⁴ and did not identify devices similar to HFB2 to which the cost effectiveness of a wet scrubber could be compared. Therefore, as explained in section 7.8.3.1 of the Haze Plan, it requested that EPA adopt the existing measures into the SIP as required by CAA section 169A(b)(2) and 40 CFR 51.208(f)(2). Given the lack of other hog fuel boilers with similar controls, and the cost of compliance and the other statutory factors, North Carolina determined the control to not be necessary for reasonable progress.

For several reasons, including consideration of the comments received after proposal, EPA ultimately does not find North Carolina's justification for rejecting the controls compelling. First, although it may be accurate that most if not all hog fuel boilers in the country do not have wet scrubbers installed, Domtar and the State submitted a complete cost analysis and a vendor quote to install a wet scrubber on HFB2. It appears that it is possible to install a wet scrubber on the particular unit (and achieve at least a 95 percent SO₂ reduction), and neither Domtar nor the State argued otherwise. Unless a wet scrubber cannot be installed on HFB2, the lack of a similar scrubber in the

RACT/BACT/LAER Clearinghouse is not a relevant reason for rejecting the control. Second, although EPA has not established a bright line cost-effectiveness threshold and all regional haze FFAs and SIP decisions will be evaluated on a SIP-by-SIP basis, EPA notes that it has found or proposed to find, based on its state-specific evaluation of other SIPs, that at least one other state did not adequately justify its determination to not adopt controls as part of its FFA at cost-effectiveness values higher than the value North Carolina considered for Domtar. *See, e.g.,* Air Plan Partial Approval and Partial Disapproval; Utah; Regional Haze State Implementation Plan for the Second Implementation Period; Air Plan Disapproval; Utah; Interstate Transport of Air Pollution for the 2015 8-Hour Ozone National Ambient Air Quality Standards; proposed rule, 89 FR 67208 (August 19, 2024). It is up to each state to adequately justify particular cost decisions on a SIP-by-SIP basis, and in this case, EPA believes that North Carolina did not provide adequate information in the record for rejecting this particular emissions control. Due to this inadequate record, it was not reasonable for the State to conclude that a wet scrubber at HFB2 is not necessary for reasonable progress.

EPA acknowledges the Conservation Groups' assertions that the cost effectiveness values for HFB2 are below the thresholds used by other states during the second planning period, such as Colorado, Nevada, and New Mexico which elected to set cost effectiveness thresholds of \$10,000/ton of pollutant removed. However, North Carolina was not required by the CAA or RHR to adopt a similar bright-line cost effectiveness threshold when evaluating control costs in FFAs, and the relatively high thresholds of up to \$10,000/ton set by Colorado, Nevada, and New Mexico, do not automatically compel other states to follow suit. Each state has discretion to set (or not set) a reasonable cost threshold and provide a justification for FFA outcomes.

While EPA agrees with the Conservation Groups' overall conclusion that North Carolina did not adequately justify the cost control decisions, EPA does not necessarily agree with all of their specific contentions. For example, EPA disagrees with the argument that North Carolina underestimated the scrubber control efficiency at HFB2. The control efficiency of a wet scrubber is dependent upon a number of variables, including the type and design of the wet scrubber system used, the absorbing

and/or reacting solution or slurry used, packed bed height, sump fluid and makeup water balance, scrubber pH, and the concentration of SO₂ in the inlet waste gas flow.⁶⁵ Domtar justified the use of 95 percent control efficiency by citing to a wet scrubber estimate from a vendor stating that the scrubber system has been designed to achieve a 95 percent collection of SO₂ emissions.⁶⁶ The vendor's estimate for Domtar is tailored based on the facility's specifications using Domtar's emission test reports and assumptions from similar applications. EPA agrees with the State that the 95 percent control efficiency used in the FFA is reasonable given the vendor's estimate based on facility-specific information, the typical SO₂ removal efficiency range for wet scrubbers (90 to 98 percent),⁶⁷ and the fuel types burned in HFB2.

The Conservation Groups included numerous comments on specific elements of the cost calculations for the wet scrubber at HFB2. Since EPA is partially disapproving the LTS with respect to the emissions control decisions at Domtar, it is not necessary to weigh-in on all of the specific deficiencies. However, there are some specific issues where information provided here may help when re-evaluating the need for controls in a potential SIP revision.

EPA's CCM cannot properly account for all uncertainties, and thus, provides that a "retrofit factor" can be applied. The CCM states that it is typical for the retrofit factor of a wet scrubber to be between 0.7 and 1.3, depending on the level of difficulty. In any SIP revision, a retrofit factor greater than 1.0 should be adequately documented with a detailed justification to explain why it is appropriate to inflate the costs above those with an average retrofit difficulty.⁶⁸ Based on the information provided, EPA is not able to adequately discern whether a 1.3 retrofit factor in

⁶⁵ See page 1–21, section 5, Chapter 1 of the CCM.

⁶⁶ The wet scrubber quote from LDX Solutions to Domtar is included at pp. 48–53 (pdf numbering) in appendix G–2 of the Haze Plan.

⁶⁷ See table 1.1 on page 1–3, section 5, Chapter 1 of the CCM.

⁶⁸ See CCM section 5, Chapter 1, page 1–16: https://www.epa.gov/sites/default/files/2021-05/documents/wet_and_dry_scrubbers_section_5_chapter_1_control_cost_manual_7th_edition.pdf ("An RF of 1 should be used to estimate costs for a project of average difficulty. For retrofits that are more complicated than average, a retrofit factor of greater than 1 can be used to estimate capital costs provided the reasons for using a higher retrofit factor are appropriate and fully documented. Similarly, new construction and retrofits of existing plants that are less complicated should use an RF less than 1. Each project should be evaluated to determine the appropriate value for RF.")

⁶⁴ EPA's RACT/BACT/LAER Clearinghouse is available at: <https://www.epa.gov/calc/ractbactlaer-clearinghouse-rblc-basic-information>.

the cost analysis for the wet scrubber for HFB2 is inflated.

EPA disagrees with the Conservation Groups' statement that the costs of the "unanticipated delays" are included in the contingency costs. Domtar only included the costs of "unanticipated delays" in the retrofit costs. These retrofit costs address the unexpected magnitude of anticipated cost elements; the cost of unexpected delays; the cost of re-engineering and re-fabrication; the cost of correcting design errors; the cost that reflect additional difficulty associated with installing auxiliary equipment; additional insulation and painting of piping and ductwork; costs associated with engineering or supervision during installation; and unanticipated delays that cause production cost. The contingency costs include other unforeseen costs such as the cost difference from a change in bank interest rate from the historically low 3.25 percent that was used at the time the Haze Plan was submitted as well as accounting for the cost difference for assuming a higher end of the range equipment life. The contingency costs also take into account that any capital investment dollars in controls that are deemed reasonable under regional haze would be taking investment dollars away from mill projects that would have a return on investments. The retrofit costs are completely separate from the contingency costs, and therefore, EPA disagrees that any unanticipated delay costs in Domtar's FFA are being double counted.

EPA agrees with the Conservation Groups that a sales tax charge should not have been included in the cost analysis for the wet scrubber due to North Carolina's Sales and Use Tax Exemption for pollution abatement equipment (for air or stream) for manufacturing.⁶⁹ However, removing the sales tax from the cost analysis for the wet scrubber accounts for approximately one percent of the total direct cost, which would not appreciably change the overall cost/ton identified by the FFA.

EPA disagrees with the contention that North Carolina increased the quoted amounts for the freight charge and construction management without explanation. As explained in appendix I of the Haze Plan, North Carolina's approval of Domtar's decision to use the

CCM's methodology, instead of the vendor quote for the calculation of the freight cost, is reasonable because the quote was not detailed and was an estimate that did not consider the exact physical specifications and parameters of the plant. Furthermore, EPA disagrees that the construction cost was double-counted in the overall calculated \$/ton based on EPA's review of Domtar's FFA calculations because they are using the \$344,196 cost, as calculated using the methodologies from the CCM, instead of the \$125,000 vendor quote.

EPA also disagrees that a \$3,000,000 new induced fan was included in the FFA without any documentation or explanation. In section 7.8.1.2 of the Haze Plan, North Carolina notes that an additional fan power would be required to overcome the additional pressure drop through the wet scrubber. Specifically, in appendix I, North Carolina notes that Domtar monitored the existing fan at the facility during startup and commissioning of the new electrostatic precipitator (ESP) and found it to be sufficient to accommodate the ESP but without excess capacity. Therefore, a new induction fan is needed to operate a wet scrubber as well as the ESP and Domtar notes that the \$3,000,000 was a quote that it had received for a new induction fan. EPA notes that North Carolina has included appropriate justification for the need for a new induction fan in appendix G–2 and appendix I of the Haze Plan and also finds that the \$3,000,000 cost estimate was developed using reasonable cost assumptions and with adequate justification.⁷⁰

EPA also disagrees with the Conservation Groups' assertion that North Carolina relied on visibility considerations to reject the wet scrubber at HFB2. This is clear from statements in the Haze Plan and the NPRM. The Haze Plan states that North Carolina "evaluated the SO₂ emission reductions and associated improvements in visibility at the Swanquarter Wilderness Area associated with the wet scrubber control option for the No. 2 Hog Fuel Boiler. This information is included solely as supplementary information and is not relied upon by the State for its conclusions as noted in Section 7.8.2.2." Appendix I of the Haze Plan explains in section 3.1.2 that EPA requested clarification in section 7.8.1.2 that the visibility benefits modeling for the wet scrubber option related to the Domtar HFB2 FFA is supplementary information and is not being relied upon

by the State for its conclusions as noted in section 7.8.2.2. North Carolina responded that the "last paragraph of 7.8.1.2 of the SIP was revised to explain that the information is included solely as supplementary information and that North Carolina did not rely upon the information to support its conclusions documented in section 7.8.2.2 of the SIP. This clarification was also added to section 7.8.1.1 of the SIP for BRPP and section 7.8.1.3 of the SIP for PCS Phosphate." Furthermore, the NPRM states that North Carolina did not rely on the supplemental visibility information for the Domtar FFA analysis and conclusions and limits its evaluation to the four factors. See 89 FR 67355 n.69, 67359–61.

Comment 7.b: According to the Conservation Groups, EPA must require North Carolina's SIP to include enforceable fuel restrictions for the No. 1 Hog Fuel Boiler (HFB1). They state that EPA proposed to approve North Carolina's exclusion of HFB1 from a FFA because it is equipped to only burn natural gas and biomass with No. 2 fuel oil, which is projected to emit 12 tpy of SO₂ in 2028 (representing one percent of Domtar's total SO₂ emissions). However, they contend that EPA and North Carolina ignore that Domtar's permit authorizes HFB1 to burn HVLC gases and No. 2 fuel oil. While acknowledging the facility's assertion that it intends to keep the HVLC supply line disconnected indefinitely, the Conservation Groups state that there are no provisions in the SIP preventing the facility from reconnecting the supply line and burning high sulfur content fuel or requiring the facility to operate the unit "infrequently." Citing EPA's 2019 Guidance, they state that if a SIP lacks the necessary provisions to make reasonable progress, the state is required to adopt emissions limits as part of its LTS for incorporation into the regulatory portion of the SIP. Therefore, they assert that EPA, in a FIP, must make the fuel use restrictions enforceable or perform an FFA based on any fuels that HFB1 could burn in the future.

Response 7.b: Concerns regarding the lack of enforceable fuel restrictions for Domtar's HFB1 form the second basis for disapproval of North Carolina's LTS. North Carolina exempted HFB1 from FFA review based on the revised 2028 SO₂ emissions projection of 12 tpy SO₂ (comprising 1.2 percent of Domtar's total 2028 projected SO₂ emissions) and evaluated HFB2 via a FFA based on 2028 projected emissions of 1,010 tpy SO₂ (comprising 98.8 percent of Domtar's total 2028 projected SO₂

⁶⁹ Information regarding North Carolina's Sales and Use Tax Exemption is available at: <https://edpnc.com/incentives/pollution-abatement-and-recycling/#:-:text=Pollution%20abatement%20equipment%20for%20manufacturing,from%20sales%20and%20use%20tax.>

⁷⁰ The CCM allows for vendor quotes to be incorporated into the cost analysis. See page 1–1, section 5, Chapter 1 of EPA's CCM.

emissions).⁷¹ HFB1 did not operate in 2020, 2021, and 2022, and as the Conservation Groups note, the HVLC supply line is disconnected indefinitely.⁷² EPA acknowledges that performing a control analysis on an emissions unit with very low annual emissions, such as 12 tpy, would not likely yield any cost-effective controls because the low amount of SO₂ removed would result in a higher cost per ton calculated for each control evaluated. However, the information submitted in the Haze Plan documents higher SO₂ emissions from HFB1 in 2015, 2016, 2017, 2018, and 2019, and notes that there are no state or federally enforceable fuel restrictions on HFB1.⁷³ Based on the comments received and the information in the submitted SIP, EPA is concerned that the SIP submission does not include enforceable fuel restrictions for HFB1 at Domtar. See *Comm. for a Better Arvin v. EPA*, 786 F.3d 1169, 1175–77 (9th Cir. 2015). This concern regarding the lack of enforceable measures in the record for HFB1, together with the inadequate record substantiating the FFA conclusion regarding HFB2, collectively form the basis for EPA's disapproval of the portions of the Haze Plan addressing 40 CFR 51.308(f)(2) and (3) and (i)(2) through (4).

Comment 7.c: The Conservation Groups assert that EPA's proposal to endorse North Carolina's decision to not conduct analyses of NO_x controls for Domtar was arbitrary and capricious, identify three boilers (No. 5 Recovery Boiler, HFB1, and HFB2) as significant sources of NO_x emissions, and state that North Carolina failed to respond to its state-level comments related to NO_x control at the facility. Therefore, they contend that EPA must assess NO_x controls at the No. 5 Recovery Boiler, HFB1, and HFB2 and require the facility to install reasonable and cost-effective controls.

Response 7.c: For the reasons provided in response 3, EPA disagrees that the Agency's proposal to not require NO_x FFA control evaluations of

Domtar is arbitrary and capricious. As discussed therein and in the NPRM, North Carolina's decision to focus on SO₂ controls in this planning period appears reasonable given, among other things, IMPROVE monitoring data from the 2015–2019 five-year period showing that ammonium sulfate is the dominant visibility impairing pollutant contributing to regional haze at the Class I areas in the State.

EPA also disagrees that North Carolina failed to respond to the comments regarding a NO_x control evaluation of Domtar. The State provided responses to public comments regarding the August 30, 2021, proposed Haze Plan in appendix I of the final plan. North Carolina's responses to public comments on nitrate and NO_x are included in section 3.4.3 (“Exclusion of NO_x/Nitrate/PM”) of appendix I, pages 37–38, where the State explains why it did not evaluate NO_x controls during this planning period.⁷⁴

Comment 8: The Conservation Groups note that North Carolina relied on PCS' current title V permit limits for reasonable progress, which limits SO₂ emissions from Sulfur Acid Plants (SAPs) 5, 6, and 7 to 2.5, 2.5, and 1.75 pounds (lbs) per ton of sulfuric acid produced, respectively, on a 365-day rolling average. They also note that facility upgrades have lowered actual SO₂ emissions from SAPs 5, 6 and 7 to 1.1, 1.2, and 1.2 lbs per ton of sulfuric acid produced.

The Conservation Groups contend that the State did not analyze lowering the SO₂ emission limits or imposing work practice standards that are reflective of the actual emissions due to the plant upgrades; quote the statement in EPA's 2021 Clarification Memo that “[a] limit that is significantly higher than the emission rate a source is actually achieving does not keep the source from increasing its rate in the future;” and contend that if a control can achieve lower emissions rate, the State must assess it as part of an FFA. They disagree with North Carolina's interpretation that the quoted statement is only applicable to situations where current measures are not necessary to make reasonable progress, noting that the quote is located in a section of the 2021 Clarification Memo titled “Determining When Existing Measures are Necessary for Reasonable Progress.” The Conservation Groups also state that North Carolina relied on the upgrades and actual emissions rates in

determining that no additional controls are available for the purpose of addressing the existing visibility impairment attributable to anthropogenic sources at Swanquarter. They argue that the plant upgrades resulting in the actual lower emissions rates are existing measures and that the actual emission rates must form the basis for the lower emission limits for the plant, disagreeing with North Carolina's statement that there is no need to impose lower arbitrary limits and no basis on which a lower limit could be set that guarantees compliance. The Conservation Groups contend that EPA must disapprove North Carolina's control determinations for PCS because the State did not consider reasonable and highly cost-effective controls for the facility, and that the Agency must prepare a FIP that analyzes and requires lower emission limits that are reflective of actual emissions.

Response 8: EPA acknowledges the comments related to the PCS FFA. However, because EPA is partially disapproving the portions of the Haze Plan addressing 40 CFR 51.308(f)(2), it is not necessary to address the Conservation Groups' concerns regarding the PCS FFA at this time. At proposal, EPA solicited comments on, among other things, “the adequacy of the permit conditions, including associated monitoring, recordkeeping, and reporting, and whether the State has met the requirements of 40 CFR 51.308(f)(2)(i) through (iv).”⁷⁵ The decision to disapprove the portions of the Haze Plan addressing 40 CFR 51.308(f)(2) is a logical outgrowth of the proposal; EPA has given further consideration to the question of the adequacy of these provisions, the comments received, and the totality of the analyses that constitute the LTS and RPGs. As discussed above, EPA will be obligated under CAA section 110(c)(1) to promulgate a FIP within two years after the effective date of this partial disapproval, unless the state submits, and the EPA approves, a SIP revision that satisfies the requirements of 40 CFR 51.308(f)(2) and (3) and (i)(2) through (4) before EPA promulgates the FIP. The public will have the opportunity to comment on, among other things, whether the proposed FIP or the proposed SIP action satisfies the FFA requirements of 40 CFR 51.308(f)(2).

Comment 9: The Conservation Groups contend that the State's and EPA's analyses of BRPP are no longer relevant since, according to EPA's Enforcement and Compliance History Online database, the facility is permanently

⁷¹ See “Projected 2028 Emissions, Revised (tons)” in table 7–55 of the Haze Plan for the 2028 projected SO₂ emissions used in the percent calculations. As discussed in responses 2 and 4.f, the State's use of 2028 projected emissions appears reasonable.

⁷² See EPA's Emissions Inventory System (EIS) Gateway available at: <https://www.epa.gov/air-emissions-inventories/emissions-inventory-system-eis-gateway>. The 2023 annual emissions data for HFB1 will not be available until 2025.

⁷³ See Haze Plan at p. 276. See table 7–56 of the Haze Plan at p. 277 for HFB1 SO₂ emissions from 2015 through 2020 and appendix G–2 at p.12/280 pdf for HFB1 SO₂ emissions from 2016–2018 and p.71/280 pdf for HFB1 SO₂ emissions from 2018–2020.

⁷⁴ In section 10.4.1 “Exclusion of NO_x from Four-Factor Analysis” of the Haze Plan, North Carolina responded to FLM comments on this subject.

⁷⁵ See 89 FR 67358.

closed as of June 2023. Therefore, they assert that EPA's final SIP action must include coordinating and acting in accordance with the Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA) Superfund efforts for the site, along with ensuring all existing air permits for the facility are revoked.

Response 9: EPA agrees that North Carolina's FFA analysis and the Agency's evaluation of BRPP in the NPRM are no longer relevant. On September 18, 2024, BRPP requested the termination of its title V permit for the BRPP Canton Mill, Air Quality Permit No. 08961T32, with Facility ID 4400159, effective immediately.⁷⁶ This letter states that none of the sources in the BRPP title V permit have been operating since June 2023. On September 23, 2024, DAQ sent a letter rescinding the permit effective on the date of the letter.⁷⁷ Regarding CERCLA, the CAA does not require regional haze SIPs to provide for coordination and consistency with Superfund efforts.

Comment 10: The Conservation Groups assert that EPA cannot approve North Carolina's SIP revision because it does not include practically enforceable emissions limitations and because this deficiency is not cured in the Commitment Letter supporting the conditional approval. They also assert that EPA must disapprove the SIP revision because the Commitment Letter does not identify specific enforceable measures as required under CAA section 110(k)(4) and only contains mere promises to adopt unspecified and sometimes unenforceable monitoring, recordkeeping, and reporting measures to correct the deficiencies in the SIP revision and because EPA ignores additional practical enforceability issues in the permit provisions identified for incorporation into the SIP.

Response 10: It is unnecessary to respond to the Conservation Groups' comments regarding the sufficiency of the Commitment Letter or the practicable enforceability of the permit terms identified for incorporation into the SIP because EPA is shifting from its initial proposal of a partial approval and partial conditional approval to a partial approval and partial disapproval. This action does not incorporate any permit conditions into the SIP because the partial disapproval includes the LTS, and the Commitment Letter is now moot. EPA's decision to disapprove the

portions of the Haze Plan addressing 40 CFR 51.308(f)(2) is a logical outgrowth of the initial proposal and EPA's consideration of the comments received. As discussed above, EPA will be obligated under CAA section 110(c)(1) to promulgate a FIP within two years after the effective date of this partial disapproval, unless the State submits, and EPA approves, a SIP revision that satisfies the requirements of 40 CFR 51.308(f)(2) and (3) and (i)(2) through (4) before EPA promulgates the FIP. Any emission limitations identified for incorporation into the SIP in such a SIP revision (or into a FIP in the case of an eventual FIP) must be legally and practicably enforceable, and EPA encourages the State to consider the Conservation Groups' comments if the State opts to develop a SIP revision.

Comment 11: The Conservation Groups contend that EPA's proposal to conditionally approve North Carolina's RPGs violates the CAA and RHR. They assert that North Carolina impermissibly reversed the "long-standing" SIP planning sequence by setting its RPGs before conducting FFAs or finalizing its LTS. They argue that since the RPGs are based on VISTAS' modeling conducted in 2020, before the State identified the controls necessary for reasonable progress based on the four statutory factors and proposed its LTS, the RPGs do not meet the RHR requirement that they must be based on enforceable SIP measures. They also assert that the State and EPA ignored the 2019 Guidance explaining that a state must adjust its RPGs if it conducted modeling for RPGs before making final LTS determinations. The Conservation Groups maintain that EPA ignores that the State's RPGs do not reflect the visibility improvements that the LTS controls will achieve, must disapprove the RPGs, and must require the State to adjust them to reflect enforceable limitations in the SIP.

Response 11: EPA agrees with disapproving North Carolina's RPGs but differs on the reason for disapproval. EPA reiterates that the process for establishing RPGs for each Class I area is prescribed in the RHR amendments and discussed in related guidance.^{78 79 80} The RHR requires states with Class I areas to establish RPGs that reflect the visibility conditions projected to be achieved by the end of the second planning period as a result of the "enforceable emission limitations, compliance schedules, and other measures required under the long-term

strategy." See 40 CFR 51.308(f)(3). As previously explained, EPA is disapproving the portions of the Haze Plan addressing 40 CFR 51.308(f)(2). Therefore, because the requirements in 40 CFR 51.308(f)(3) are dependent upon 40 CFR 51.308(f)(2), EPA is disapproving the RPGs because they reflect a deficient LTS.

The sequencing of the development of the RPGs is inconsequential here because EPA has determined that the State's LTS is deficient. Therefore, because the Haze Plan does not include an approvable LTS, and compliance with 40 CFR 51.308(f)(3) is dependent on compliance with 40 CFR 51.308(f)(2), EPA is disapproving the RPGs, and the State should re-evaluate them as part of its potential SIP revision.

Comment 12: The Conservation Groups assert that EPA's proposal to approve North Carolina's interstate consultations is arbitrary and capricious, and violates the CAA and RHR. They contend that EPA did not conduct an independent analysis of the State's consultation process to determine whether it satisfies the regulatory requirements. Additionally, they argue that State's consultations were "incomplete, inadequately documented, and failed to provide for coordinated emissions management strategies with other states."

The Conservation Groups maintain that the VISTAS modeling was flawed and the source selection process was unreasonable, both of which were relied on by North Carolina to identify sources from other states that contribute to visibility impairment in its five Class I areas. They cite NPCA's analysis using the 2020 NEI and the 2023 Clean Air Markets Program Data (CAMPD) to show that there are 169 sources with Q/d greater than or equal to five, spanning 19 different states, that likely contribute to visibility impairment at North Carolina's Class I areas. They note that North Carolina did not request consultation with some of the states or regarding some sources that were identified by the NPCA, including consulting with Kentucky on Ghent Station that they contend is likely contributing to visibility impairment at Great Smoky Mountains with a Q/d of 40.36, and Louisiana, which has nine sources that they contend likely contribute to visibility impairment in North Carolina's Class I areas.

Regarding the adequacy of documentation of consultations, the Conservation Groups point to North Carolina's statement in its SIP revision that appendix F-1 contains the consultation letters from North Carolina to each VISTAS state, along with the

⁷⁶ The September 18, 2024, letter requesting permit termination is in the docket for this rulemaking.

⁷⁷ The September 24, 2024, permit rescission letter is in the docket for this rulemaking.

⁷⁸ See 40 CFR 51.308; 64 FR 35714 (July 1, 1999); and 82 FR 3078 (January 10, 2017).

⁷⁹ See 2019 Guidance at pp. 46–48.

⁸⁰ See 2021 Clarifications Memo at p. 6.

responses. However, the Conservation Groups found that appendix F–1 only contains North Carolina’s letters. Instead of providing the responses it received (only from Tennessee and West Virginia), the State provides only summaries of the responses. Furthermore, while North Carolina requested consultations with Kentucky, Georgia, and Virginia, the responses were not documented, including whether those states shared their FFAs for the identified sources, whether there were agreements or disagreements between the parties, or whether disagreements were reconciled.

Next, the Conservation Groups assert that North Carolina “effectively conducted an ‘agree to do nothing’ consultation process,” which violates the CAA and RHR requirement to engage in substantive consultation to develop coordinated strategies that reduce emissions with other states in order to make reasonable progress during the second planning period. They note that only one (Eastman Chemical Company in Tennessee) out of the 16 sources that the State requested consultation was required to install new emission controls. The Conservation Groups argue that North Carolina acquiesced to other states’ determinations for their respective sources. For example, they state that based on the VISTAS modeling and source selection process North Carolina relied on, the General James M. Gavin Power Plant (Gavin Plant) in Ohio is the biggest contributor to visibility impairment in Great Smoky Mountains, Joyce Kilmer, and Shining Rock, the second biggest contributor at Linville Gorge, and the fourth biggest contributor at Swanquarter. Nonetheless, they state that North Carolina decided it was satisfied with Ohio’s determination that the Gavin Plant would not be required to install new emission controls.

Response 12: In response to the Conservation Groups’ comments that the VISTAS modeling was flawed, North Carolina’s source selection process was unreasonable, and the State should have requested consultation based on NPCA’s Q/d analysis, *see* responses 1 and 2.

EPA disagrees with the contention that EPA’s review of North Carolina’s interstate consultation process was a box checking exercise. EPA independently reviewed all of the consultation documentation provided by North Carolina within its Haze Plan. EPA also disagrees with the comment that North Carolina conducted a “do-nothing” approach to consultation, which violates CAA and RHR requirements to engage in substantive

consultation to develop “coordinated emission reduction strategies” with other states. 40 CFR 51.308(f)(2) requires a state to consult with those states that have emissions that are reasonably anticipated to contribute to visibility impairment in the mandatory Class I area. The State appears to have reasonably complied with 40 CFR 51.308(f)(2)(ii) by consulting with 10 other states and requesting FFAs for 16 facilities located within those states with visibility impacts to North Carolina’s Class I areas exceeding the State’s sulfate PSAT threshold at one or more of North Carolina’s Class I areas.⁸¹ Further, EPA disagrees with the Conservation Groups’ assertion that North Carolina acquiesced to other states’ determinations for their respective sources. For example, North Carolina assessed and agreed with Ohio’s response on the Gavin Plant, and therefore, no further action is required under the RHR’s consultation provisions.⁸² 40 CFR 51.308(f)(2)(ii) does not require further action when a state agrees with another state’s determination that no emission reductions are necessary to make reasonable progress.

Moreover, EPA disagrees with the Conservation Groups’ contention that North Carolina did not adequately document its consultation process within its Haze Plan. Although the RHR requires a state to demonstrate that it has included in its implementation plan all measures agreed to during interstate consultations or a regional planning process, or measures that will provide equivalent visibility improvement, and to describe any actions taken in the event states disagree with one another

⁸¹ The 16 sources are: Entergy Arkansas Inc—Independence Plant in Arkansas; Plant Bowen in Georgia; Gibson and Indiana Michigan Power DBA AEP Rockport in Indiana; Tennessee Valley Authority (TVA)—Shawnee in Kentucky; New Madrid Power Plant—Marston in Missouri; Cardinal Power Plant—Cardinal Operating Company (Cardinal Power Plant); Duke Energy Ohio—Wm. H. Zimmer Station (Duke—Zimmer); and General James M. Gavin Power Plant (Gavin Power Plant) in Ohio; Homer City Gen LP/Center and Genon NE Mgmt Co/Keystone Station in Pennsylvania; Eastman and TVA—Cumberland in Tennessee; Jewell Coke Company LLP in Virginia; and Allegheny—Harrison and Monongahela—Pleasants Power Station in West Virginia. North Carolina requested FFAs of non-VISTAS sources through VISTAS.

⁸² Appendix F–3d of the Haze Plan includes the June 22, 2020, letter from North Carolina, through VISTAS, requesting a FFA of the Gavin Plant and a October 29, 2020, letter of response from Ohio. The 2020 Ohio letter states that the Gavin Plant operates two coal-fired boilers (B003 and B004) which have FGDs that operate year-round with a 95 percent control efficiency. Ohio requested an SO₂ FFA from the Gavin Plant, and Ohio stated in its letter that the plant was considered effectively controlled for NO_x with a SCR system with 90 percent control efficiency.

on the emission reduction measures necessary to achieve reasonable progress in Class I areas, the RHR does not prescribe a specific type of documentation to demonstrate that the interstate consultation requirements of 40 CFR 51.308(f)(2)(ii) have been met. North Carolina documented its correspondence in appendix F–1 with the states listed in table 10–2 and summarized responses from those states in section 10.1.1 of the Haze Plan. Therefore, it appears that the State reasonably satisfied the RHR’s documentation requirements. However, the interstate consultation requirement at 40 CFR 51.308(f)(2)(ii) is a part of 40 CFR 51.308(f)(2), which is subject to the partial disapproval. To the extent that the Domtar facility contributes to visibility impairment at out-of-state Class I areas, EPA recognizes that the State (or EPA in the case of an eventual FIP), may need to reconsider the interstate consultation element under 40 CFR 51.308(f)(2)(ii). To the extent that the Conservation Groups have concerns about facilities outside of North Carolina, including the Gavin Plant in Ohio and Ghent Station in Kentucky, any public comments related to out-of-state sources should be provided during the public comment periods regarding those states’ haze plans. North Carolina lacks authority to regulate these out-of-state sources, and therefore, EPA cannot require other states to implement control measures through action on North Carolina’s Haze Plan.

Comment 13: The Conservation Groups maintain that EPA blindly proposes to approve the State’s consultation with the FLMs by not conducting an independent review or analysis. They note that North Carolina provided the FLMs an opportunity to consult on the draft SIP revision, but argue that the State failed to engage in meaningful consultation with the FLMs and largely ignored and failed to adequately respond to the FLMs’ comments. For these reasons, they argue EPA’s proposal to approve the State’s FLM consultation process is arbitrary and capricious and violates the CAA and RHR.

The Conservation Groups argue that North Carolina treated the FLM consultation process as a “box checking exercise” by providing terse and inadequate responses to FLMs’ recommendations. The Conservation Groups contend that North Carolina did not incorporate FLM suggestions that North Carolina should conduct FFAs of NO_x controls for the State’s major sources due to inaccurate modeling results; the source screening process used “unreasonably high thresholds;”

lower thresholds⁸³ would have led to identification of additional facilities; and the State should conduct FFAs of NO_x controls for the Duke Energy EGUs.

The Conservation Groups contend that since North Carolina's source selection, source-specific analyses, LTS, and RPGs violate the CAA and RHR, the State's FLM consultations were based on a SIP revision that did not meet the statutory and regulatory requirements. They argue that EPA must issue a FIP that corrects the errors in the SIP revision and consult with the FLMs anew, meaningfully considering, incorporating, and responding to FLM recommendations.

Response 13: The FLMs play important roles in addressing visibility at Class I areas, and 40 CFR 51.308(i)(3) requires states to include a description of how they address any comments provided by the FLMs during the opportunity for consultation. However, neither the CAA nor the RHR require a state to agree with the FLM recommendations, nor do they specify the degree of consideration that must be given to those comments. Rather, 40 CFR 51.308(i)(3) requires a state to "include a description of how it addressed any comments provided by the Federal Land Managers" within its haze plan.

North Carolina appears to have reasonably complied with this requirement by documenting how it addressed the FLMs' comments contained in appendix H and appendix I in both section 10.4 of the Haze Plan and in section 3.2 of appendix I of its Haze Plan.⁸⁴ For example, North Carolina provides an in-depth rationale (approximately 15 pages) for why it disagrees with NPS' comment recommending inclusion of NO_x in the FFAs in section 10.4.1 of the Haze Plan.⁸⁵ Further, FLM consultation must take place at least 60 days prior to the state public comment period on any haze plan or plan revision pursuant to 40 CFR 51.308(i)(2). North Carolina initiated consultation with the FLMs on April 5, 2021, which was 147 days before the opening of the State's public

comment period on August 30, 2021. In addition, North Carolina met with NPS upon request on May 14 and May 25, 2021, to discuss NPS' feedback in more detail.⁸⁶

EPA recognizes that North Carolina appears to have reasonably followed all of processes required for FLM consultation consistent with 40 CFR 51.308(i). However, EPA is disapproving North Carolina's FLM consultation under 40 CFR 51.308(i)(2) through (4) because compliance with that requirement is dependent on fulfilling the substantive requirements of 40 CFR 51.308(f)(2) (LTS). For reasons discussed elsewhere in this notice, EPA is disapproving the portions of the Haze Plan addressing 40 CFR 51.308(f)(2) and (3). When EPA disapproves an LTS, the state (in the case of a SIP revision) or EPA (in the case of a FIP) must redevelop an LTS that complies with the statutory and regulatory requirements and provide meaningful consultation on the substance of the LTS created to replace the substantively disapproved one. Even though it appears North Carolina reasonably consulted with the FLMs to develop the LTS, because the LTS is disapproved, the consultation component must also be disapproved. Therefore, the State (for a SIP revision) or EPA (for a FIP) must again consult with the FLMs on a revised LTS in order to develop an approvable LTS.

Regarding the merits of the FLM comments summarized by the Conservation Groups and repeated by the NPS in its comments on this rulemaking, *see* responses 17 and 18. Regarding a FIP, as discussed above, EPA will be obligated under CAA section 110(c)(1) to promulgate a FIP within two years after the effective date of this partial disapproval, unless the State submits, and EPA approves, a SIP revision that satisfies the requirements of 40 CFR 51.308(f)(2) and (3) and (i)(2) through (4) before EPA promulgates the FIP.⁸⁷

Comment 14: The Conservation Groups assert that EPA should not rely on North Carolina's environmental justice (EJ) analysis due to deficiencies and that the Agency should conduct an independent analysis. The Conservation Groups contend that North Carolina failed to respond to their and other commenters' EJ concerns raised during the State's public hearing. They also maintain that North Carolina's EJ

analysis is inadequate because it does not consider the communities surrounding the facilities but instead focuses on the communities surrounding the Class I areas and that they are not aware of any other state that employed this approach. They state that out of the 400-page SIP revision (not including appendices), North Carolina's efforts only include two pages discussing public participation plans, three pages of maps, and less than one page in its response to comments. The Conservation Groups assert that the SIP revision is "entirely void of any analysis of how it would benefit North Carolina-identified communities of concern for environmental justice."

The Conservation Groups argue that EPA's proposal fails to recognize the unreasonable approach that the State used to identify the geographic areas for consideration in the EJScreens Reports, an approach they describe as unique, and that they are not aware of any other state that employed this approach. They also assert that EPA's final action must provide clarification to the states that impacts local to the sources should be considered because North Carolina's analysis failed to consider the impacts of SO₂ and NO_x on communities near the emission sources. They argue that North Carolina's SIP revision does not contain any analysis on how it would benefit the identified communities with EJ concerns, except in the State's assertion about the visibility improvement in its Class I areas through reductions in SO₂ and NO_x have reduced impacts on the public, including vulnerable communities.

The Conservation Groups state that the pollutants that contribute to visibility impairment in Class I areas can also cause significant public health impacts in the area surrounding the source, particularly communities of color and low-income communities. They argue that EPA's final action should consider and independently analyze the impacts the sources have on communities across the State, particularly in communities that are disproportionately burdened by environmental pollution and explain how a strong regional haze plan will address those adverse impacts.

Based on the Executive Orders (E.O.s) in place since 1994, they maintain that EPA is required to incorporate EJ as "part of its mission by identifying and addressing . . . disproportionately high and adverse human health or environmental effects of its program, policies, and activities," which they argue to be applicable to regional haze SIP actions' impacts on minority populations and low-income

⁸³ The Conservation Groups say "higher thresholds" on page 46 of their comments, but EPA believes that this is an error because the context of the statement indicates that they intended to say "lower thresholds."

⁸⁴ Section 3.2 of appendix I addresses NPS comments received during the State comment period on the proposed Haze Plan. Section 10.4 of the Haze Plan addresses FLM comments received prior to the State comment period on a draft plan, including section 10.4.2 related to source selection and section 10.4.3 related to evaluation of NO_x controls for the Duke Energy EGUs.

⁸⁵ *See* section 10.4.1 of the Haze Plan at pp. 320–335.

⁸⁶ FWS and USFS representatives were also invited to attend the May 14 and 25, 2021, North Carolina-NPS consultation meeting. *See* section 10.4 of the Haze Plan.

⁸⁷ *See* response 15.

populations. Additionally, they argue the directive to incorporate EJ into all of the Agency's actions was reaffirmed by the Biden Administration through back-to-back E.O.s directed to Federal agencies, including EPA, and again in 2023 when the Administration issued the "Executive Order on Revitalizing Our Nation's Commitment to Environmental Justice for All."⁸⁸

The Conservation Groups maintain that EPA has the resources, including EJSscreen, to provide a robust analysis of the EJ impacts of North Carolina's SIP revision. Using the EJSscreen toolkit, their analysis shows five facilities (DEC—Belews Creek; DEC—Cliffside, DEC—Marshall, Domtar, and PCS) are surrounded by communities that have EJ indicators in the high percentiles.

Response 14: EPA disagrees with this comment but acknowledges the EJSscreen information provided by the Conservation Groups. The regional haze statutory provisions do not explicitly address considerations of EJ and neither do the regional haze regulatory requirements of the second planning period in 40 CFR 51.308(f), (g), and (i). However, the lack of explicit direction does not preclude the State from addressing EJ in its SIP submission. As explained in "EPA Legal Tools to Advance Environmental Justice,"⁸⁹ the CAA provides states with the discretion to consider EJ in developing rules and measures related to regional haze. While a state may consider EJ under the reasonable progress factors, neither the statute nor the regulation requires states to conduct an EJ analysis for EPA to approve a SIP submission. The 2021 Clarifications Memo states in section 5.6: "EPA encourages states to consider whether there may be equity and environmental justice impacts when developing their regional haze strategies for the second planning period. . . . States have discretion to consider environmental justice in determining the measures that are necessary to make reasonable progress and formulating their long-term strategies, as long as such consideration is reasonable and not contrary to the regional haze requirements."

In this instance, North Carolina elected to consider EJ under the reasonable progress factors in section

10.6 and appendix F–5 of the Haze Plan. The State ran EJSscreen for four of its five Class I areas (excluding the Great Smoky Mountains due to its size), and based on the results of the EJSscreen, it outlined a five-step outreach plan in section 10.6 to ensure the opportunity for meaningful community involvement during the state-level comment period for the Haze Plan. In appendix I of the Haze Plan, in response to an EJ comment received during the public comment period, the State notes that EPA's 2021 Clarifications Memo encourages states to consider EJ and encourages states to consider whether there may be equity and EJ impacts when developing their regional haze strategies for the second planning period while noting that states have discretion to consider EJ in determining the measures that are necessary to make reasonable progress and formulating LTS, as long as such consideration is reasonable and not contrary to the regional haze requirements. North Carolina explains in its response that at the time of the issuance of the memo, the State had mostly completed the proposed plan for public comment which was issued on August 30, 2021. The response also states that North Carolina's EJ analysis and additional outreach was an adequate response given the short amount of time between when EPA issued its July 8, 2021, guidance and when regional haze SIPs were due to EPA on July 31, 2021.

As discussed above, the CAA and RHR neither prohibit nor require an evaluation of EJ with a regional haze SIP. EPA has evaluated North Carolina's SIP submission against the statutory and regulatory regional haze requirements and determined that it satisfies those minimum requirements. For these reasons, the State is not required to address the Conservation Groups' alleged EJ inadequacies in its SIP revision, and EPA is not required to conduct an independent EJ analysis.

Comment 15: The Conservation Groups assert that EPA must disapprove North Carolina's SIP revision and issue a regional haze FIP for the State for the reasons discussed in the comments summarized in comments 1 through 14, above. They also contend that the Agency should issue a regional FIP covering the Region 4 states because "multiple states in Region 4 have developed second planning period SIPs that violate" the CAA and RHR, pointing to reliance on "invalid VISTAS modeling and source selection process," and must disapprove Georgia's SIP revision. The Conservation Groups also contend that EPA must act swiftly to issue a FIP because North Carolina's

Haze Plan for the second planning is years behind schedule.

Response 15: EPA has responded to the Conservation Groups' rationale for disapproval and a FIP in responses 1 through 14. As discussed above, the Agency is approving in part and disapproving in part North Carolina's Haze Plan. Therefore, EPA will be obligated under CAA section 110(c)(1) to promulgate a FIP within two years after the effective date of this partial disapproval, unless the State submits, and EPA approves, a SIP revision that satisfies the requirements of 40 CFR 51.308(f)(2) and (3) and (i)(2) through (4) before EPA promulgates the FIP. The Conservation Groups' comments regarding a regional FIP are beyond the scope of this rulemaking because this rulemaking relates solely to North Carolina's Haze Plan and EPA has not proposed action on all of the regional haze SIPs submitted by other states in Region 4. Regarding Georgia's regional haze plan, EPA proposed to approve that SIP revision in a separate rulemaking on June 3, 2024, and the Agency will take final action through that separate rulemaking.⁹⁰

Comment 16: NPS states that North Carolina's SIP process missed a key CAA section 169A(d) consultation requirement because the State's public notice of its regional haze SIP did not include a summary of the FLMs' conclusions and recommendations. NPS asserts that this statutory requirement ensures public transparency in the SIP development process by requiring states to alert the public that the FLMs provide comments and to provide a short summary of the recommendations in the notice to ease the burden of locating and interpreting these comments in the draft SIP revisions. Therefore, NPS recommends that EPA acknowledge and address this procedural error when taking final action on North Carolina's SIP.

Response 16: Section 169A(d) of the CAA requires states to include a summary of the conclusions and recommendations of the FLMs in the notice to the public. This section sets the expectation as to what states must share with the public regarding the FLMs' comments. North Carolina's August 30, 2021, proposed haze plan subject to public notice contained the FLMs' conclusions and recommendations in appendix H, which is sufficient because it provides the entirety of the FLMs' conclusions and recommendations, rather than a state-generated summary. However, because EPA is disapproving the portions of the

⁸⁸ The "Executive Order on Revitalizing Our Nation's Commitment to Environmental Justice for All" is available at: <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/04/21/executive-order-on-revitalizing-our-nations-commitment-to-environmental-justice-for-all/>.

⁸⁹ See "EPA Legal Tools to Advance Environmental Justice", May 2022, available at: <https://www.epa.gov/system/files/documents/2022-05/EJ%20Legal%20Tools%20May%202022%20FINAL.pdf> at pp. 35–36.

⁹⁰ See 89 FR 47481.

Haze Plan addressing 40 CFR 51.308(f)(2) and (3), North Carolina (for a SIP revision) or EPA (for a FIP) must again satisfy the requirements of CAA section 169A(d).

Comment 17: NPS disagrees with EPA's proposal to approve the source and pollutant selection portion of the LTS. NPS states that North Carolina unreasonably applied the AoI and PSAT results to exclude significant sources and pollutants from analysis, that it has raised these concerns with the State since May 2021, and that neither North Carolina nor EPA substantively addressed these concerns.

Source Selection Approach—NPS argues that North Carolina's source selection thresholds are "excessively high" and are "flawed and counterproductive" to remedying existing visibility impairment. According to NPS, the VISTAS source selection approach, relying on a percent-of-total-impact threshold for selecting each facility, results in an individual facility needing to have a greater impact on visibility to be selected for more impaired Class I areas than with less impaired ones. NPS states that the AoI percent-of-total-impact threshold for selecting a facility is 74 times higher for Mammoth Cave National Park (Mammoth Cave) and 19 times higher for Great Smoky Mountains when compared to Everglades National Park, the least impacted NPS Class I area in the region. NPS argues that this approach resulted in the selection of very few sources for FFAs in a region experiencing significant visibility impairment and states that no North Carolina source was selected for impacts to Great Smoky Mountains or other NPS Class I areas. NPS also argues that it is difficult to assess reasonable progress if few sources are brought forward for FFAs. NPS asserts that neither EPA nor North Carolina substantively addressed this issue or described how the source selection thresholds are consistent with the need to demonstrate reasonable progress.

Pollutant Selection Approach—NPS asserts that North Carolina used an outdated 2011 modeling platform to draw conclusions about which pollutants are responsible for visibility impairment. NPS states that recent monitoring data shows that the ammonium nitrate contribution on the 20 percent most-impaired days has increased since 2011 and is now a significant component of visibility impairment in Mammoth Cave and Shenandoah National Park (Shenandoah). While NPS agrees that sulfate is the dominant contributor to visibility impairment in those areas, it

notes that nitrate contributions have more than doubled in recent years and are also significant. NPS encourages EPA to consider the 2021 Clarification Memo's direction on pollutant selection in assessing North Carolina's approach and recommends the evaluation of North Carolina's sources for opportunities to reduce NO_x emissions.

Response 17: See response 1 regarding the 2011 base year and response 2 regarding North Carolina's source selection approach. See response 3 regarding nitrate contributions at the North Carolina Class I areas and pollutant selection. Additionally, there is no evidence provided by NPS that Mammoth Cave or Shenandoah are affected by emissions from within North Carolina (in particular, NO_x emissions which may impact nitrate). Therefore, contributions to nitrate at those Class I areas are not relevant to North Carolina's Haze Plan.

Comment 18: NPS notes that North Carolina did not conduct FFAs of NO_x and SO₂ emissions at five Duke Energy EGUs identified by NPS for such an evaluation, instead concluding that SO₂ emissions from these EGUs are effectively controlled without any substantive analysis.⁹¹ NPS asserts that EPA's proposed determination that FFAs are not necessary for these EGUs and that they are effectively controlled for SO₂ is flawed and inconsistent with EPA guidance because it: (1) does not consider the full suite of EPA guidance on effective controls, (2) relied on flawed assumptions to estimate SO₂ control efficiencies, and (3) did not assess NO_x emissions. NPS recommends that EPA require FFAs for SO₂ and NO_x at these EGUs which should consider whether scrubber upgrades or optimizations are cost effective.

EPA Guidance—NPS maintains that EPA narrowly viewed the Agency's guidance in relying heavily on two effective control examples in the 2019 Guidance—(1) EGUs with add-on flue gas desulfurization (FGD) that meet the 0.2 lb/MMBtu MATS SO₂ limit for coal-fired EGUs, and (2) EGUs that installed FGD during the first implementation period that operates year-round with an effectiveness of at least 90 percent. NPS states that EPA did not consider additional guidance that "caveats how 'off-ramps' to source selection should be used," pointing to section 2.3 of the 2021 Clarifications Memo. NPS states that, with respect to MATS, the guidance recommends that states should

also consider control equipment past performance in their reasonable progress determinations and recommends reasonable actions to ensure controls are maintained and operated to achieve optimal performance. NPS states that the Duke Energy EGUs have operated at lower emission rates in the past and that its evaluation of SO₂ and NO_x emissions information in the CAMPD demonstrates that SO₂ and NO_x emissions generally increased in recent years, suggesting that the controls at these facilities may not be operating to maintain optimum performance or achievable emission rates.

NPS also argues that FGD installed after 2007 should meet a control effectiveness of 95 percent or higher, pointing to a "caveat" in the 2019 Guidance regarding the 90 percent control efficiency "off-ramp" that EPA cites in its proposal to approve. This "caveat" states that EPA expects any FGD system installed to meet CAA requirements since 2007 would have an effectiveness of 95 percent or higher. NPS also points to EPA's January 4, 2017, Texas Best Available Retrofit Technology (BART) FIP in which it contends that EPA set a 95 percent SO₂ control benchmark for deciding if a scrubber should be evaluated for upgrades or replacement.

SO₂ Control Assumptions—NPS states that EPA's evaluation of SO₂ removal efficiency at the Duke Energy EGUs relied on assumptions that may slightly overestimate scrubber efficiency. NPS maintains that the equation used by EPA to estimate uncontrolled emissions overestimated these emissions and the resulting control efficiencies. NPS recommends using AP-42 emission factors for bituminous coal, and other fuels, to estimate the uncontrolled emissions. Using the AP-42 factor for bituminous coal, NPS estimates that scrubber performance is periodically lower than 95 percent for DEC—Cliffside Unit 5, DEC—Belews Creek Units 1 and 2, DEP—Roxboro Units 2 and 4A, and DEC—Marshall Units 1 and 2 and is periodically lower than 90 percent for units at DEP—Roxboro, DEC—Belews Creek, and DEC—Cliffside. NPS recommends reviewing permit limits to ensure that optimum scrubber performance is consistently achieved and to prevent backsliding.

NO_x Emissions—NPS recommends that EPA and North Carolina evaluate the NO_x controls at the Duke EGUs. According to the NPS, replacing existing SNCR systems with modern SCR systems at DEC—Marshall (Units 1, 2, and 4) would be cost effective at \$4,000–\$6,000/ton and would reduce

⁹¹ The five Duke Energy EGUs identified by NPS are DEC—Belews Creek, DEC—Cliffside, DEC—Marshall, DEP—Roxboro, and DEP—Mayo.

NO_x emissions by up to 5,700 tpy. Additionally, NPS found that performance of the SCR for Duke Energy's EGUs have deteriorated in recent years. NPS recommends analyzing past performance as a potential control option for the Duke EGUs with SCR.

Response 18: EPA Guidance—See response 4 regarding evaluation of these Duke Energy sources via a SO₂ FFA. Regarding the NPS comments that the SO₂ and NO_x emissions at these Duke Energy EGUs have generally increased in recent years, which suggests that the controls at these facilities may not be operating to maintain optimum performance or achievable emission rates, North Carolina did not select DEC—Belews Creek, DEC—Cliffside, DEC—Marshall, DEP—Mayo, or DEP—Roxboro for an FFA because the visibility impacts from these sources were below North Carolina's source selection thresholds. Because these sources were not selected for an FFA, North Carolina's decision not to evaluate them for controls appears reasonable.

EPA clarifies that North Carolina and EPA are not relying on section 2.3 ("Sources that are Not Selected Based on Existing Effective Controls") of the 2021 Clarifications Memo and 2019 Guidance (pp. 22–25) for DEC—Belews Creek, DEC—Cliffside, DEC—Marshall, DEP—Mayo, or DEP—Roxboro. Section 2.3 of the 2021 Memo is applicable to sources that met the source selection criteria set by the State under the RHR and, instead of a FFA, the State provided a showing that the source has existing, effective controls such that a FFA is unlikely to result in new additional controls. None of these five Duke Energy EGUs met North Carolina's source selection criteria for a FFA (*i.e.*, none met or exceeded the PSAT sulfate or nitrate thresholds). However, in the NPRM (89 FR 67359), EPA evaluated these Duke Energy EGUs to evaluate the reasonableness of North Carolina's source selection thresholds.⁹² EPA documented an analysis that further examined the Duke Energy sources to verify North Carolina's claim that there were no uncontrolled or lightly controlled sources in North Carolina that were not selected. Regarding scrubber control efficiencies, in the NPRM (89 FR 67359), EPA provided data from 2017–2021 indicating that existing WFGD systems at the five Duke

Energy facilities routinely achieve 92 to 98 percent SO₂ removal efficiencies. In this rulemaking action, EPA also considered data from 2022 and found that the Duke Energy emissions units have annual average scrubber removal efficiencies ranging between 93.8–99.2 percent with all units having a six year average (2017–2022) SO₂ removal efficiency of greater than 95 percent.⁹³ Therefore, it appears reasonable to assume that an FFA would likely result in the conclusion that no further SO₂ emissions controls (including WFGD upgrades) are necessary. See 89 FR 67359.

Regarding EPA's potential overestimate of scrubber efficiency, EPA agrees that using the AP–42 equation assumption for bituminous coal (uncontrolled) combustion would slightly reduce the calculated scrubber efficiencies.⁹⁴ However, such a small change in efficiency is negligible here. Adjusting EPA's scrubber efficiency calculations would change the annual average efficiencies from 93.8–99.2 percent to 93.5–99.2 percent and the six-year average efficiencies would still all be greater than 95 percent.

Regarding NPS' statement that FGDs installed after 2007 should meet a control effectiveness of 95 percent or higher,⁹⁵ this is a general recommendation from EPA's 2019 Guidance that applies to states that are providing demonstrations that selected sources already have effective emission control technology in place and is not intended to be a "bright-line" recommendation. EPA disagrees that EPA's January 4, 2017, Texas BART FIP sets a 95 percent SO₂ control benchmark for deciding if a scrubber should be evaluated for upgrades or replacement. First, there is nothing in the RHR that establishes such a requirement. Second, the Duke Energy sources were not selected, and therefore, no control analysis was required for the second planning period. Additionally, the analysis in the first planning period Texas BART FIP is not relevant to the current situation for the North Carolina second planning period SIP. The Texas FIP examined EGU sources following the EPA's first planning period BART

Guidelines,⁹⁶ which is not relevant here. The BART Guidelines established presumptive scrubber efficiencies and emissions rates⁹⁷ that are not a requirement for the second planning period. Also, the Texas BART FIP analyzed sources that either did not have scrubbers or were operating old inefficient scrubbers that only achieved 60–80 percent SO₂ efficiency. In addition, the Texas coal burning EGU sources also differed in the type of coal burned. All of the North Carolina EGUs burn bituminous coal, whereas all of the Texas EGUs burn low-sulfur subbituminous coal or lignite.

SO₂ Control Assumptions—Regarding NPS' recommendations to review permit limits to ensure that optimum scrubber performance is consistently achieved and to prevent backsliding, as explained earlier, because these sources were not selected for an FFA, North Carolina's decision not to evaluate them for controls appears reasonable.

NO_x Emissions—With respect to the recommendation that EPA require NO_x FFAs for these five Duke Energy EGUs, see response 3.

Comment 19: The Organizations contend that the Haze Plan fails to reduce pollution and falls short on the State's obligation to improve air quality for protected parks, wilderness areas, and communities. Additionally, they state that they are disappointed that EPA has proposed to approve this highly flawed and problematic plan.

Specifically, they contend that the State's plan relied on a flawed modeling system prepared by VISTAS. They contend that VISTAS modeling used decade-old data, does not accurately represent nor include NO_x emissions contributing to haze pollution, and does not include many of the biggest polluting facilities in the state that are exacerbating haze pollution.

The Organizations also contend that North Carolina used unreasonably high source selection thresholds that excluded Duke Energy's coal-fired power plants from a full review for control analyses or requirements. The Organizations state that these Duke facilities are some of the biggest haze polluters in the State.

The Organizations state that EPA shirked its duty to review North

⁹³ See North Carolina Duke Energy scrubber efficiency data file that is included in the docket for this action.

⁹⁴ AP–42, Compilation of Air Pollutant Emissions Factors from Stationary Sources" is available at: <https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors-stationary-sources>.

⁹⁵ See *id.* at p. 24, footnote 53 ("While a 90 percent control effectiveness is used in this example, we expect that any FGD system installed to meet CAA requirements since 2007 would have an effectiveness of 95 percent or higher.").

⁹⁶ See 40 CFR part 51, appendix Y—"Guidelines for BART Determinations Under the Regional Haze Rule" (BART Guidelines).

⁹⁷ See BART Guidelines at section IV.E.4 ("You must require 750 MW power plants to meet specific control levels for SO₂ 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.").

⁹² See 2019 Guidance at p. 19 ("For example, it may be difficult to show reasonableness of a threshold set so high that an uncontrolled or lightly controlled source that is one of the largest contributors to anthropogenic light extinction at a Class I area is excluded.").

Carolina's FFA; deferred to North Carolina's highly deficient EJ analysis; and proposed an action that is inconsistent with EPA's proposed disapprovals in whole or part of haze plans from other states such as Arizona, Missouri, North Dakota, Wyoming, and Utah. They urge EPA to issue either a FIP for North Carolina or a FIP for all states in Region 4, given that all Region 4 states relied on VISTAS modeling that they contend is invalid for source selection.

Response 19: Regarding the Organizations' assertions related to VISTAS modeling, *see* response 1. Regarding the Organizations' comments concerning source selection thresholds, *see* response 2. Regarding the Organizations' arguments related to the North Carolina Duke Energy power plants, *see* response 4. Regarding the Organization's comments that EPA neglected its duty to review the FFAs, *see* response 6. Regarding the Organizations' comments about EJ, *see* response 14. Regarding the Organizations' comments about a FIP, *see* response 15.

The Organizations' comment regarding rulemaking consistency is unclear with respect to the specific alleged inconsistencies between this action and the cited proposed actions. Therefore, EPA is unable to respond to this comment other than to note that EPA is now shifting from its initial proposal of a partial approval and partial conditional approval to a partial approval and partial disapproval.

Comment 20: EPA received one set of relevant comments from a member of the public (hereinafter referred to as the "Commenter"). The Commenter states the national parks and forests in the Southern Appalachia region experience some of the worst air pollution in the country and notes that air pollution poses a threat to human health (*e.g.*, heart attacks, heart failure, cancer, and respiratory diseases), especially in marginalized communities. The Commenter maintains that the RHR requires states to develop a plan to reduce anthropogenic air pollution that affects Class I areas, that local economies of communities surrounding Class I areas are dependent on tourism to these areas and contends that park visitation drops by eight percent when air quality is poor.

The Commenter asserts that the Haze Plan misses opportunities to reduce emissions and many industrial pollution sources will remain unchecked, and that it will continue to allow up to 53,000 tons of haze-causing pollutants (SO₂ and NO_x) to be emitted. The Commenter contends that the State

excluded "the largest and dirtiest sources of air pollution," coal-burning power plants, from its plan and that the State also excluded two harmful air pollutants, soot and NO_x, from consideration.

The Commenter refers to EPA's proposed approval as a "rubber-stamp" of North Carolina's "do-nothing regional haze plan." The Commenter maintains that North Carolina's plan is "weak" because it is based on flawed modeling from VISTAS and that EPA "shirked its duty" to review the State's source-specific FFAs; "incorrectly" allowed the State to exclude NO_x controls in its FFAs; supported the State's exclusion of Duke Energy's five coal-burning power plants from any control analyses or requirements; and deferred to the State's "highly deficient" EJ analysis. The Commenter asserts that a weak air quality plan in North Carolina will continue to place the disproportionate environmental burden on black and low-income communities.

Response 20: Regarding the Commenter's assertions that the modeling from VISTAS is flawed, *see* response 1. With respect to the concern regarding the exclusion of NO_x and soot⁹⁸ controls, *see* response 3.⁹⁹ Regarding the statement that North Carolina excluded "Duke Energy's five coal-burning power plants" from any control analyses or requirements, it is unclear which Duke Energy power plants are being referenced, however, should those five power plants be referring to DEC—Belews Creek, DEC—Cliffside, DEC—Marshall, DEP—Mayo, and DEP—Roxboro, *see* response 4. Regarding the statements that EPA "shirked its duty" to review the State's source-specific FFAs and that North Carolina's plan is a "do-nothing regional haze plan," *see* response 6. With respect to the EJ comments, *see* response 14. Regarding "53,000 tons of haze-causing pollutants (SO₂ and NO_x)," the Commenter did not identify the source of data for this figure, and thus, EPA is unable to respond to this aspect of the comment.

III. EJ Considerations

As explained in *EPA Legal Tools to Advance Environmental Justice* and the 2021 Clarifications Memo, CAA section 169A and the RHR provide states with the discretion to consider EJ in developing rules and measures related

⁹⁸ The Commenter did not define the term "soot." EPA assumes the Commenter is referring to particulate matter.

⁹⁹ In table 2, the directly emitted PM species are coarse mass, elemental carbon, fine sea salt and fine soils.

to regional haze.¹⁰⁰ In this instance, DAQ exercised this discretion. In reviewing DAQ's analysis, EPA defers to North Carolina's reasonable exercise of its discretion in considering EJ in this way. The information associated with DAQ's analysis is included in the NPRM for informational purposes only; it does not form any part of the basis of EPA's action.

DAQ describes North Carolina's EJ Program for regional haze in section 10.6 of the 2022 Plan which includes outreach plans to provide an opportunity for meaningful involvement of all people regardless of race, color, national origin, or income during the comment period of this regional haze plan for North Carolina. DAQ ran EJSscreen,¹⁰¹ an EJ mapping and screening tool that provided a nationally consistent dataset and approach for combining various environmental and demographic indicators, around the North Carolina Class I areas except for Great Smoky Mountains because the area is too large to perform the EJSscreen analysis. Based on the EJSscreen results, which are included in appendix F-5 of the Haze Plan, DAQ implemented its outreach plan, including conducting specific outreach during the comment period on the August 30, 2021, proposed haze plan to communities within potentially underserved block groups that overlap or are within one mile of the North Carolina Class I areas. DAQ also provided project information and updates to the Eastern Band of the Cherokee Nation. Section IV of the technical support document provides a more detailed summary of how North Carolina opted to consider EJ in development of the 2022 Plan. While EPA commends North Carolina's consideration of EJ when developing its SIP revision, the EJ analyses submitted by DAQ were considered but were not the basis for EPA's action.

IV. Final Action

EPA is approving in part and disapproving in part North Carolina's April 4, 2022, SIP submission addressing the regional haze requirements for the second planning period contained in 40 CFR 51.308(f). Specifically, EPA is approving the portions of the Haze Plan addressing the requirements of 40 CFR 51.308(f)(1), (f)(4) through (6), and (g)(1) through (5).

¹⁰⁰ EPA Legal Tools to Advance Environmental Justice (May 2022) is available at: <https://www.epa.gov/system/files/documents/2022-05/EJ%20Legal%20Tools%20May%202022%20FINAL.pdf>; 2021 Clarifications Memo at p. 16.

¹⁰¹ EPA's EJSscreen tool is available at: <https://www.epa.gov/ejscreen>.

EPA is disapproving the portions of the Haze Plan addressing the requirements of 40 CFR 51.308(f)(2) and (3) and (i)(2) through (4). Thus, EPA will be obligated under CAA section 110(c)(1) to promulgate a FIP within two years after the effective date of this partial disapproval, unless the State submits, and EPA approves, a SIP revision that satisfies the requirements of 40 CFR 51.308(f)(2) and (3) and (i)(2) through (4) before EPA promulgates the FIP.

V. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. See 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to review state choices, and approve those choices if they meet the minimum criteria of the Act. Accordingly, this final action partially approves and partially disapproves a SIP submission as meeting or not meeting Federal requirements, respectively, and does not impose additional requirements beyond those imposed by state law.

Additional information about these statutes and Executive Orders can be found at <https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 14094: Modernizing Regulatory Review

This action is not a significant regulatory action as defined in Executive Order 12866, as amended by Executive Order 14094, and was therefore not subject to a requirement for Executive Order 12866 review.

B. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA because it does not contain any information collection activities.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities because it merely partially approves and partially disapproves a SIP submission as meeting or not meeting Federal requirements, respectively.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate as described in

UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local or Tribal governments or the private sector.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have Tribal implications, as specified in Executive Order 13175, because 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 and will not impose substantial direct costs on Tribal governments or preempt Tribal law. Thus, Executive Order 13175 does not apply to this action.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2–202 of the Executive Order. Therefore, this action is not subject to Executive Order 13045 because it merely partially approves and partially disapproves a SIP submission as meeting or not meeting Federal requirements, respectively. Furthermore, EPA's Policy on Children's Health does not apply to this action.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211 because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

J. Executive Order 12898 and Executive Order 14096: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations and Revitalizing Our Nation's Commitment to Environmental Justice for All

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629, February 16, 1994) directs Federal agencies to identify and address “disproportionately high and adverse human health or environmental effects” of their actions on communities with EJ concerns to the greatest extent practicable and permitted by law. Executive Order 14096 (Revitalizing Our Nation's Commitment to Environmental Justice for All, 88 FR 25251, April 26, 2023) builds on and supplements E.O. 12898 and defines EJ as among other things, the just treatment and meaningful involvement of all people regardless of income, race, color, national origin, or Tribal affiliation, or disability in agency decision-making and other Federal activities that affect human health and the environment.

DAQ evaluated EJ considerations as part of its SIP submittal even though the CAA and applicable implementing regulations neither prohibit nor require an evaluation. EPA's evaluation of DAQ's EJ considerations are described above in the section titled, “EJ Considerations.” The analysis was done for the purpose of providing additional context and information about this rulemaking to the public, not as a basis of the action. EPA is finalizing action under the CAA on bases independent of North Carolina's evaluation of EJ. Due to the nature of the action being taken here, this action is expected to have a neutral to positive impact on the air quality of the affected area. In addition, there is no information in the record upon which this decision is based that is inconsistent with the stated goal of Executive Order 12898/14096 of achieving EJ for communities with EJ concerns.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

L. Petitions for Judicial Review

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate

circuit by January 21, 2025. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule 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) of the CAA).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by

reference, Nitrogen dioxide, Particulate matter, Sulfur oxides.

Dated: November 14, 2024.

Cesar Zapata,
Acting Regional Administrator, Region 4.

For the reasons stated in the preamble, EPA amends 40 CFR part 52 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 II—North Carolina

■ 2. In § 52.1770, amend the table in paragraph (e) by adding an entry for “Regional Haze Plan—Second Planning Period” at the end of the table to read as follows:

§ 52.1770 Identification of plan.

(e) * * *

EPA-APPROVED NORTH CAROLINA NON-REGULATORY PROVISIONS

Provision	State effective date	EPA approval date	Federal Register citation	Explanation
* Regional Haze Plan—Second Planning Period.	* 4/4/2022	* 11/22/2024	* [Insert first page of Federal Register citation].	* Approval of the portions of the Haze Plan addressing the requirements of 40 CFR 51.308(f)(1), (f)(4)–(6), and (g)(1)–(5). Disapproval of the portions of the Haze Plan addressing the requirements of 40 CFR 51.308(f)(2), (f)(3), and (i)(2)–(4).

■ 3. Section 52.1776 is added to read as follows:

§ 52.1776 Visibility protection.

(a) *Disapproval.* On April 4, 2022, the North Carolina Department of Environmental Quality, Division of Air Quality submitted a revision to its SIP to address regional haze for the second planning period. The portions of this SIP revision addressing the requirements of 40 CFR 51.308(f)(2) and (3) and (i)(2) through (4) are disapproved.

(b) [Reserved]

[FR Doc. 2024–26980 Filed 11–21–24; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R05–OAR–2024–0184; FRL–11968–02–R5]

Air Plan Approval; Wisconsin; Nitrogen Oxide Emissions Control Requirements

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is approving Wisconsin’s additions and amendments to chapters NR 400, NR 428, and NR 484 of the Wisconsin Administrative Code (Wis. Adm. Code). These changes clarify

existing requirements and ensure clear and consistent implementation of Wisconsin’s control requirements for emissions of nitrogen oxide (NO_x). EPA proposed to approve this action on July 17, 2024, and received no comments.

DATES: This final rule is effective on December 23, 2024.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA–R05–OAR–2024–0184. All documents in the docket are listed on the <https://www.regulations.gov> website. Although listed in the index, some information is not publicly available, *i.e.*, Confidential Business Information (CBI), Proprietary Business Information (PBI), 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 through <https://www.regulations.gov> or at the Environmental Protection Agency, Region 5, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. This facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding Federal holidays. We recommend that you telephone Katie Mullen, at (312) 353–3490 before visiting the Region 5 office.

FOR FURTHER INFORMATION CONTACT: Katie Mullen, Air and Radiation Division (AR 18J), Air and Radiation Division (AR18J), Environmental

Protection Agency, Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604, (312) 353–3490, mullen.kathleen@epa.gov.

SUPPLEMENTARY INFORMATION:

Throughout this document whenever “we,” “us,” or “our” is used, we mean EPA.

I. Background Information

Wisconsin’s April 10, 2024, submittal requested that EPA approve revisions to NO_x control requirements in chapters NR 400, NR 428, and NR 484 of the Wis. Adm. Code. Wisconsin’s proposed revisions clarify emission limits for units using more than one type of fuel, incorporate procedures for approving a site-specific emission limit alternative to ensure that limits are achievable in practice, revise and clarify existing compliance and monitoring requirements, clarify an applicability exception, update cross references, and include definitions. On July 17, 2024 (89 FR 58097), EPA proposed to approve revisions to NO_x control requirements in chapters NR 400, NR 428, and NR 484 of the Wis. Adm. Code. Specifically, EPA proposed to approve Wisconsin rule(s) 400.03(4)(mf), 428.02(7i), 428.02(7p), 428.02(7u), 428.02(7w), 428.04(2)(i), 428.04(4)(c), 428.05(2)(b), 428.05(2)(f), 428.05(3)(f), 428.05(5)(c), 428.055, 428.07(1)(a)2, 428.08(2)(e)(title), 428.08(2)(f)(title), 428.08(2)(g), 428.08(3), 428.21(3)(d), 428.22(1), 428.22(3), 428.24(1)(c), and 484.04 Table 2 Row (15m), effective