ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R08–OAR–2010–0406; FRL–9648–3]

Approval and Promulgation of Implementation Plans; North Dakota; Regional Haze State Implementation Plan; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Regional Haze

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is partially approving and partially disapproving a revision to the North Dakota State Implementation Plan (SIP) addressing regional haze submitted by the Governor of North Dakota on March 3, 2010, along with SIP Supplement No. 1 submitted on July 27, 2010, and part of SIP Amendment No. 1 submitted on July 28, 2011. These SIP revisions were submitted to address the requirements of the Clean Air Act (CAA or Act) and our rules that require states to prevent any future and remedy any existing man-made impairment of visibility in mandatory Class I areas caused by emissions of air pollutants from numerous sources located over a wide geographic area (also referred to as the ''regional haze program''). EPA is promulgating a Federal Implementation Plan (FIP) to address the gaps in the plan resulting from our partial disapproval of North Dakota's Regional Haze (RH) SIP.

In addition, EPA is disapproving a revision to the North Dakota SIP addressing the interstate transport of pollutants that the Governor submitted on April 6, 2009. We are disapproving it because it does not meet the Act's requirements concerning non-interference with programs to protect visibility in other states. To address this deficiency, we are promulgating a FIP.

DATES: This final rule is effective May 7, 2012.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA–R08–OAR–2010–0406. All documents in the docket are listed on the *www.regulations.gov* Web site. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information (CBI) 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 Program, Environmental Protection Agency (EPA), Region 8, 1595 Wynkoop Street, Denver, Colorado 80202–1129. EPA requests that if at all possible, you contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section to view the hard copy of the docket. You may view the hard copy of the docket Monday through Friday, 8 a.m. to 4 p.m., excluding Federal holidays.

FOR FURTHER INFORMATION CONTACT: Gail Fallon, Air Program, Mailcode 8P–AR, Environmental Protection Agency, Region 8, 1595 Wynkoop Street, Denver, Colorado 80202–1129, (303) 312–6281, or *fallon.gail@epa.gov.*

SUPPLEMENTARY INFORMATION:

Definitions

For the purpose of this document, we are giving meaning to certain words or initials as follows:

- The word *Act* or initials *CAA* mean or refer to the Clean Air Act, unless the context indicates otherwise.
- The initials *ASOFA* mean or refer to advanced separated overfire air.
- The initials *AVS* mean or refer to Antelope Valley Station.
- The initials *BACT* mean or refer to Best Available Control Technology.
- The initials *BART* mean or refer to Best Available Retrofit Technology.
- The initials *CAM* mean or refer to compliance assurance monitoring.
- The initials *CAMx* mean or refer to Comprehensive Air Quality Model.
- The initials *CCS* mean or refer to Coal Creek Station.
- The initials *CEMS* mean or refer to continuous emission monitoring system.
- The initials *CMAQ* mean or refer to Community Multi-Scale Air Quality modeling system.
- The initials *CSAPR* mean or refer to Cross-State Air Pollution Rule.
- The initials *EGUs* mean or refer to Electric Generating Units.
- The words *we, us* or *our* or the initials EPA mean or refer to the United States Environmental Protection Agency.
- The initials *FIP* mean or refer to Federal Implementation Plan.
- The initials *FLMs* mean or refer to Federal Land Managers.
- The initials *GRE* mean or refer to Great River Energy.
- The initials *IMPROVE* mean or refer to Interagency Monitoring of Protected Visual Environments monitoring network.
- The initials *IWAQM* mean or refer to Interagency Workgroup on Air Quality Modeling.
- The initials *LDSCR* mean or refer to low-dust SCR.
- The initials *LOS* mean or refer to Leland Olds Station.
- The words *Lostwood or Lostwood Wilderness Area* or initials *LWA* mean or refer to Lostwood National Wildlife Refuge Wilderness Area.
- The initials *LNB* mean or refer to low NO_X burners.
- The initials *LTS* mean or refer to Long-Term Strategy.
- The initials *MRYS* mean or refer to Milton R. Young Station.
- The initials *NAAQS* mean or refer to National Ambient Air Quality Standards.
- The words *North Dakota* and *State* mean the State of North Dakota unless the context indicates otherwise.
- The initials NO_X mean or refer to nitrogen oxides.
- The initials *NPCA* mean or refer to National Parks Conservation Association.
- The initials *NPS* mean or refer to National Park Service.
- The initials *PM* mean or refer to particulate matter.
- The initials PM_{10} mean or refer to particulate matter with an aerodynamic diameter of less than 10 micrometers or course particulate matter.
- The initials $PM_{2.5}$ mean or refer to particulate matter with an aerodynamic diameter of less than 2.5 micrometers or fine particulate matter.
- The initials *PRB* mean or refer to Powder River Basin.
- The initials *PSAT* mean or refer to Particle Source Apportionment Technology.
- The initials *PSD* mean or refer to Prevention of Signification Deterioration.
- The initials *RHR* mean or refer to the Regional Haze Rule.
- The initials *RH SIP* mean or refer to North Dakota's Regional Haze State Implementation Plan.
- The initials *RMC* mean or refer to the Regional Modeling Center at the University of California Riverside.
- The initials *RP* mean or refer to Reasonable Progress.
- The initials *RPG* mean or refer to Reasonable Progress Goal.
- The initials *SCR* mean or refer to selective catalytic reduction.
- The initials *SIP* mean or refer to State Implementation Plan.
- The initials *SNCR* mean or refer to selective non-catalytic reduction.
- The initials SO_2 mean or refer to sulfur dioxide.
- The initials *SOFA* mean or refer to separated overfire air.
- The initials *TRNP* mean or refer to Theodore Roosevelt National Park.

• The initials *TSD* mean or refer to Technical Support Document.
• The initials *URP* mean or refer to Uniform Rate of Progress.
• The initials *WEP* mean or refer to Weighted Emissions Potential.
• The initials *WRAP* mean or refer to the Western Regional Air Partnership.

Table of Contents

I. Background

The CAA requires each state to develop plans, referred to as SIPs, to meet various air quality requirements. A state must submit its SIPs and SIP revisions to us for approval. Once approved, a SIP is enforceable by EPA and citizens under the CAA, also known as being federally enforceable. If a state fails to make a required SIP submittal or if we find that a state's required submittal is incomplete or unapprovable, then we must promulgate a FIP to fill this regulatory gap. CAA section 110(c)(1).

This action involves two separate requirements under the CAA and EPA's regulations. One is the requirement that states have SIPs that address regional haze, the other is the requirement that states have SIPs that address the interstate transport of pollutants that may interfere with programs to protect visibility in other states.

A. Regional Haze

In 1990, Congress added section 169B to the CAA to address regional haze issues, and we promulgated regulations addressing regional haze in 1999. 64 FR 35714 (July 1, 1999), codified at 40 CFR part 51, subpart P. The requirements for regional haze, found at 40 CFR 51.308 and 51.309, are included in our visibility protection regulations at 40 CFR 51.300–309. The requirement to submit a regional haze SIP applies to all 50 states, the District of Columbia and the Virgin Islands. States were required to submit a SIP addressing regional haze visibility impairment no later than December 17, 2007. 40 CFR 51.308(b).

Few states submitted a regional haze SIP prior to the December 17, 2007 deadline, and on January 15, 2009, EPA found that 37 states, including North Dakota, and the District of Columbia and the Virgin Islands, had failed to submit SIPs addressing the regional haze requirements. 74 FR 2392. Once EPA has found that a state has failed to make a required submission, EPA is required to promulgate a FIP within two years unless the state submits a SIP and the Agency approves it within the two year period. CAA section 110(c)(1).

North Dakota initially submitted a SIP addressing regional haze on March 3, 2010. On July 27, 2010, North Dakota submitted a revision to that submittal, entitled ''SIP Supplement No. 1.'' On July 28, 2011, North Dakota submitted another revision, entitled ''SIP Amendment No. 1.''

B. Interstate Transport Requirements

Section 110(a)(1) of the CAA requires states to submit SIPs to address new or revised National Ambient Air Quality Standards (NAAQS) within 3 years after promulgation of such standards, or within such shorter period as we may prescribe. On July 18, 1997, we promulgated the 1997 8-hour ozone NAAQS and the 1997 fine particulate ($PM_{2.5}$) NAAQS. 62 FR 38652. Section 110(a)(2) of the CAA lists the elements that such new SIPs must address, as applicable, including section 110(a)(2)(D)(i), which pertains to the interstate transport of certain emissions.

Section 110(a)(2)(D)(i) contains four distinct requirements or ''prongs'' related to the impacts of interstate transport. The SIP must prevent sources in the state from emitting pollutants in amounts which will: (1) Contribute significantly to nonattainment of the NAAQS in other states; (2) interfere with maintenance of the NAAQS in other states; (3) interfere with provisions to prevent significant deterioration of air quality in other states; or (4) interfere with efforts to protect visibility in other states.

On April 25, 2005, we published a ''Finding of Failure to Submit SIPs for Interstate Transport for the 8-hour Ozone and $PM_{2.5}$ NAAQS.'' 70 FR 21147. This action included a finding that North Dakota and other states had failed to submit SIPs to address interstate transport of air pollution and started a 2-year clock for the promulgation of a FIP by us, unless a state made a submission to meet the requirements of section 110(a)(2)(D)(i), and we approved the submission, prior to that time. *Id.*

On April 6, 2009, we received a SIP revision from North Dakota to address the interstate transport provisions of CAA 110(a)(2)(D)(i) for the 1997 8-hour ozone NAAQS and the 1997 $PM_{2.5}$ NAAQS. In prior actions, we approved this North Dakota SIP submittal for the first three prongs of section 110(a)(2)(D)(i). (75 FR 31290, June 3, 2010 and 75 FR 71023, November 22, 2010). This action addresses the fourth prong.

C. Lawsuits

In two separate lawsuits, one in U.S. District Court for the Northern District of California and one in the U.S. District Court for the District of Colorado, environmental groups sued us for our failure to timely take action with respect to the interstate transport requirements and the regional haze requirements of the CAA and our regulations. In particular, the lawsuits alleged that we

had failed to promulgate FIPs for these requirements within the two-year period allowed by CAA section 110(c) or, in the alternative, fully approve SIPs addressing these requirements.

As a result of these lawsuits, we entered into two separate consent decrees in these two jurisdictions. The consent decree in the Northern District of California, as modified on several occasions, required that we sign a notice of proposed rulemaking for prong four of the interstate transport requirements for North Dakota by September 1, 2011. As lodged with the court, but before it was entered, the proposed consent decree in the District of Colorado required that we sign a notice of proposed rulemaking for regional haze requirements for North Dakota by July 21, 2011. Because the latter consent decree was not entered by the court until September 27, 2011, and we signed our notice of proposed rulemaking on September 1, 2011, the July 21, 2011 deadline was mooted.

Both consent decrees, as modified, require that we sign a notice of final rulemaking addressing the regional haze requirements and prong four of the interstate transport requirements by March 2, 2012. We are meeting that requirement with the signing of this notice of final rulemaking.

D. Our Proposal

We signed our notice of proposed rulemaking on September 1, 2011, and it was published in the **Federal Register** on September 21, 2011 (76 FR 58570). In that notice, we provided a detailed description of the various regional haze and interstate transport requirements. We are not repeating that description here; instead, the reader should refer to our notice of proposed rulemaking for further detail.

In our proposal, we proposed to take the following actions:

1. Regional Haze

We proposed to disapprove the following parts of North Dakota's RH SIP:

a. North Dakota's nitrogen oxides (NO_X) best available retrofit technology (BART) determinations and emissions limits for Milton R. Young Station (MRYS) Units 1 and 2, Leland Olds Station (LOS) Unit 2, and Coal Creek Station (CCS) Units 1 and 2.

b. North Dakota's determination under the reasonable progress requirements found at section 40 CFR 51.308(d)(1) that no additional NO_X emissions controls were warranted at Antelope Valley Station (AVS) Units 1 and 2.

c. North Dakota's reasonable progress goals (RPGs).

d. Portions of North Dakota's long-term strategy (LTS) that relied on or reflected other aspects of the RH SIP that we were proposing to disapprove.

We proposed to approve the remaining aspects of North Dakota's RH SIP revision that was submitted on March 3, 2010 and SIP Supplement No. 1 that was submitted on July 27, 2010. We proposed to approve the following parts of SIP Amendment No. 1 that the State submitted on July 28, 2011:

a. Amendments to Section 10.6.1.2 pertaining to Coyote Station.

b. Amendments to Appendix A.4, the Permit to Construct for Coyote Station.

We proposed to not act on the remainder of the State's July 28, 2011 submittal.

We proposed to promulgate a FIP to address the deficiencies in the North Dakota RH SIP that we identified in our proposal. The proposed FIP included the following elements:

a. NO_X BART determinations and emission limits for MRYS Units 1 and 2 and Leland Olds Station Unit 2.

b. NO_X BART determination and emission limit for CCS Units 1 and 2.

c. A reasonable progress determination and NO_X emission limit for AVS Units 1 and 2.

d. A five-year deadline to meet the emission limits and monitoring, recordkeeping, and reporting requirements for the above seven units to ensure compliance.

e. RPGs consistent with the SIP limits proposed for approval and proposed FIP limits.

f. LTS elements that would reflect the other aspects of the proposed FIP.

We also proposed approval of a SIP revision in lieu of our regional haze FIP if the State submitted a revision in a timely way that matched the terms of our proposed FIP.

2. Interstate Transport, Visibility Prong

We proposed to disapprove the portion of North Dakota's April 6, 2009, SIP revision for interstate transport in which North Dakota intended to address the requirement of section 110(a)(2)(D)(i)(II) that emissions from North Dakota sources not interfere with measures required in the SIP of any other state under part C of the CAA to protect visibility.

Because of this proposed disapproval, we proposed a FIP to meet the visibility protection requirement of section 110(a)(2)(D)(i)(II). To meet this FIP duty, we proposed to find that North Dakota sources would be sufficiently controlled to eliminate interference with the visibility programs of other states by a combination of the measures that we were proposing to approve as meeting the regional haze SIP requirements combined with the additional measures that we were proposing to impose in a FIP to meet the remaining regional haze SIP requirements.

We noted that acting on both the section 110(a)(2)(D)(i)(II) requirement and the regional haze SIP requirement simultaneously would ensure the most efficient use of resources by the affected sources and EPA.

E. Public Participation

We requested comments on all aspects of our proposed action and provided a two-month comment period, with the comment period closing on November 21, 2011. We also provided a public hearing. Initially, we scheduled the hearing to last four hours on one day. 76 FR 58570. At the request of the Governor of North Dakota, we expanded the time for the public hearing to 14 hours over two days and changed the venue. 76 FR 60777 (September 30, 2011). The public hearing was held in Bismarck, North Dakota on October 13 and 14, 2011.

We received a significant number of comments on our proposed rule, both from commenters, particularly citizens and environmental groups, that supported our proposed action, and from commenters, primarily from state and city agencies, rural power cooperatives, and industrial facilities and groups, that were critical of our proposed action.

In this action, we are responding to the comments we have received, taking final rulemaking action, and explaining the bases for our action, including any changes from our proposed action.

II. Final Action

A. Regional Haze

With this final action we are partially approving and partially disapproving North Dakota's RH SIP revision that was submitted on March 3, 2010, SIP Supplement No. 1 that was submitted on July 27, 2010, and part of SIP Amendment No. 1 that was submitted on July 28, 2011. Specifically we are disapproving:

- North Dakota's NO_X BART determinations and emissions limits for CCS Units 1 and 2.
- North Dakota's determination under the reasonable progress requirements found at 40 CFR 51.308(d)(1) that no additional NO_X emissions controls are warranted at AVS Units 1 and 2.
- North Dakota's RPGs.
- Portions of North Dakota's LTS that rely on or reflect other aspects of the RH SIP that we are disapproving.

We are approving the remaining aspects of North Dakota's RH SIP revision that was submitted on March 3, 2010 and SIP Supplement No. 1 that was submitted on July 27, 2010. We are approving the following parts of SIP Amendment No. 1 that the State submitted on July 28, 2011: (1) Amendments to Section 10.6.1.2 pertaining to Coyote Station, and (2) amendments to Appendix A.4, the Permit to Construct for Coyote Station. We are not taking action on the remainder of the July 28, 2011 submittal at this time.

We are finalizing a FIP to address the deficiencies in the North Dakota RH SIP that result from our partial disapproval of the SIP.

The final FIP includes the following elements:

- NO_X BART determination and emission limit for CCS Units 1 and 2 of 0.13 lb/MMBtu averaged across the two units on a 30-day rolling average, and a requirement that the owners/operators comply with this NO_X BART limit within five (5) years of the effective date of this final rule.
- A reasonable progress determination and NO_X emission limit for AVS Units 1 and 2 of 0.17 lb/MMBtu that applies singly to each of these units on a 30-day rolling average, and a requirement that the owner/operator meet the limit as expeditiously as practicable, but no later than July 31, 2018.
- Monitoring, record-keeping, and reporting requirements for the above four units to ensure compliance with these emission limitations.
- RPGs consistent with the SIP limits approved and the final FIP limits.
- LTS elements that reflect the other aspects of the finalized FIP.

B. Interstate Transport, Visibility Prong

We are disapproving a portion of a SIP revision that North Dakota submitted for the purpose of addressing the ''good neighbor'' provisions of CAA section 110(a)(2)(D)(i) for the 1997 8-hour ozone NAAQS and the 1997 $PM_{2.5}$ NAAQS. Specifically, we are disapproving the portion of the April 6, 2009 SIP in which North Dakota intended to address the requirement of section 110(a)(2)(D)(i)(II) that emissions from North Dakota sources do not interfere with measures required in the SIP of any other state under part C of the CAA to protect visibility. Because of this disapproval, we are promulgating a FIP to meet this requirement of section 110(a)(2)(D)(i)(II). To meet this FIP duty, we are finding that North Dakota sources will be sufficiently controlled to eliminate interference with the visibility programs of other states by a combination of the measures in the North Dakota SIP that we are simultaneously approving as meeting the regional haze SIP requirements combined with the additional measures that we are imposing in a FIP to meet the remaining regional haze SIP requirements. We note that North Dakota always has the discretion to revise its SIP and submit the revision to us. Should such a revision meet CAA requirements, we would replace our FIP with North Dakota's SIP revision. We encourage the State to revise its SIP.

III. Changes From Proposed Rule and Reasons for the Changes

A. NO_X BART for Milton R. Young Station Units 1 and 2 and Leland Olds Station Unit 2

As noted, we proposed to disapprove North Dakota's NO_X BART determinations for MRYS 1 and 2 and LOS 2 and to promulgate a FIP for NO_X BART for these units to fill the gap that would have resulted from our disapproval. After considering a recent judicial decision, we have decided to approve North Dakota's NO_X BART determination for MRYS 1 and 2 and LOS 2 and to not promulgate a FIP for NO_X BART for these units. We more fully describe the reasons for this change below.

On July 27, 2006, the U.S. District Court for the District of North Dakota entered a consent decree between EPA, the State, and Minnkota Power Cooperative (''Minnkota''). The consent decree resulted from an enforcement action that EPA and the State brought against Minnkota for alleged violations of Prevention of Significant Deterioration (PSD) permitting requirements at MRYS 1 and 2. The consent decree called for North Dakota to make a best available control technology (BACT) determination for NO_X for MRYS 1 and 2 but also provided a dispute resolution procedure in the event of disagreement regarding the BACT determination.

In November 2010, North Dakota determined BACT for NO_X to be limits of 0.36 lb/MMBtu for MRYS 1 and 0.35 lb/MMBtu for MRYS 2 based on the use of selective non-catalytic reduction (SNCR) technology, with separate limits during startup. In reaching this decision, North Dakota eliminated selective catalytic reduction (SCR), a higher performing control technology, based on a finding that SCR was not technically feasible to control emissions from North Dakota lignite coal. In particular, North Dakota noted that no SCR has ever been employed on an electric generating unit (EGU) burning North Dakota lignite, that North Dakota lignite has unique properties that have the potential to quickly degrade the SCR catalyst, and that no catalyst vendor supplied with the specifications for the coal at MRYS 1 and 2 would provide a guarantee of catalyst life without first conducting slipstream or pilot tests at MRYS.

EPA disagreed with North Dakota's findings and the selection of selective non-catalytic reduction (SNCR) as BACT and initiated the dispute resolution process under the consent decree. Under the consent decree, the court was tasked with upholding North Dakota's BACT determination unless the disputing party was able to demonstrate that North Dakota's decision was unreasonable. We have included a copy of the consent decree and the court's order in the docket for this action.

On December 21, 2011, following briefing by the parties, and consideration of North Dakota's record for its BACT determination, the court determined that EPA had not demonstrated that North Dakota's findings were unreasonable. The court decided that North Dakota, based on the administrative record for its BACT determination, had a reasonable basis for concluding that SCR is not technically feasible for treating North Dakota lignite at MRYS. The court upheld North Dakota's determination that SNCR is BACT.

There are two critical principles expressed in our BART guidelines that are relevant here. First, as part of a BART analysis, technically infeasible control options are eliminated from further review. For BART, EPA's criteria for determining whether a control option is technically infeasible are substantially the same as the criteria used for determining technical infeasibility in the BACT context. 70 FR 39165; EPA's ''New Source Review Workshop Manual,'' pages B.17–B.22. Second, the BART guidelines indicate that states generally may rely on a BACT determination for a source for purposes of determining BART for that source, unless new technologies have become available or best control levels for recent retrofits have become more stringent. 70 FR 39164. As a general rule, the selection of a recent BACT level as BART is the equivalent of selecting the most stringent level of control, and consideration of the five statutory BART factors becomes unnecessary.

Over our vigorous challenge of the information and analysis relied upon by North Dakota, the U.S. District Court upheld North Dakota's recent BACT determination based on the same

technical feasibility criteria that apply in the BART context. In light of the court's decision and the views we have expressed in our BART guidelines on the relationship of BACT to BART, we have concluded that it would be inappropriate to proceed with our proposed disapproval of SNCR as BART and our proposed FIP to impose SCR at MRYS 1 and 2 and LOS 2. While LOS 2 was not the subject of the BACT determination, the same reasoning that applies to MRYS 1 and 2 also applies to LOS 2. It is the same type of boiler burning North Dakota lignite coal, and North Dakota's views regarding technical infeasibility that the U.S. District Court upheld in the MRYS BACT case apply to it as well. Thus, with this action we are approving North Dakota's NO_X BART determinations for MRYS 1 and 2 and LOS 2, and no FIP for these units is necessary. The applicable limits are 0.36 lb/MMBtu for MRYS 1 and 0.35 lb/MMBtu for MRYS 2 and 0.35 lb/MMBtu for LOS 2.

We note, however, that the State has indicated a willingness to pursue the conduct of a pilot study at MRYS and/or LOS to analyze the expected replacement rate of SCR catalyst exposed to flue gas from the combustion of North Dakota lignite at these cyclone units in a low-dust or tail-end configuration. It is our expectation that the results of such a study could be used to inform further evaluation of SCR as a potential control technology when the State evaluates reasonable progress in the next planning period for regional haze. This position is supported by the State's December 20, 2011 letter from North Dakota Department of Health (NDDH), L. David Glatt, to EPA, Janet McCabe.

B. NO_X BART for Coal Creek Station (CCS) Units 1 and 2

We proposed a NO_X BART FIP limit for CCS 1 and 2 of 0.12 lb/MMBtu that would apply to each unit individually on 30-day rolling average basis. We based this limit on our proposed finding that SNCR plus separated overfire air (SOFA) plus low NO_X burners (LNB) was the best available retrofit technology. While we continue to find that SNCR plus SOFA plus LNB is the best available retrofit technology, we are changing the emission limit to 0.13 lb/MMBtu averaged over both units on a 30-day rolling average basis. Evidence submitted by commenters and our own additional research in evaluating comments has led us to conclude that this represents a more reasonable limit to apply on a 30-day rolling average basis.

This limit represents a control efficiency of 48% based on the average annual baseline emission rate of 0.22 lb/MMBtu (2003–2004) provided in the State's BART determination. This value is slightly lower than the 49% control efficiency we assumed in our proposal, a value that was based on the State's analysis. Beginning in 2010, CCS 2 voluntarily started employing LNC3, the more stringent level of combustion controls that the State evaluated in its BART determination. Annual average Clean Air Markets data for this unit reflects a NO_X emission rate of 0.153 lb/MMBtu. We estimate that SNCR would achieve an additional 25% reduction, equivalent to an emission rate of 0.115 lb/MMBtu. This compares to a value of 0.108 lb/MMBtu that the State originally estimated.

Great River Energy (GRE), the owner of CCS, asserted in comments that SNCR will only achieve a 20% reduction beyond LNC3. We find that 25% is a conservative and reasonable estimate. We considered several sources of information in arriving at this value. First, the Control Cost Manual states that in typical field applications, SNCR provides a 30% to 50% NO_X reduction. The manual provides a scatter plot with NO_X reduction efficiency plotted as a function of boiler size in MMBtu/hr.[1] The plot supports GRE's assertion that control efficiency could be lower than 50%, and could approach 30%, for larger boilers such as those at CCS. Second, Fuel Tech (one of the most recognized SNCR technology suppliers) estimates a range of 25% to 50% NO_X reduction with application of SNCR.[2] Lastly, ICAC has published information that supports a control efficiency of 20 to 30% for SNCR above LNB/combustion modifications.[3] Given this range of control efficiencies, we have settled on a control efficiency—25%—that is lower than the lowest value given by the Control Cost Manual, at the low end of the range estimated by Fuel Tech, and in the middle of the range estimated by ICAC.

To arrive at a final BART emission limit, we adjusted the projected annual average of 0.115 lb/MMBtu upward by 10% and then rounded to the nearest hundredth to arrive at 0.13 lb/MMBtu. In our experience, a 5 to 15% upward adjustment is appropriate when converting an annual average emission rate to a limit that will apply on a 30-day rolling average to account for the fact that shorter averaging periods result in higher variability in emissions due to load variation, startup, shutdown, and other factors.

We decided to allow the averaging across Units 1 and 2 in response to comments we received. The BART Guidelines state, ''You should consider allowing sources to ''average'' emissions across any set of BART-eligible emission units within a fenceline, so long as the emission reductions from each pollutant being controlled for BART would be equal to those reductions that would be obtained by simply controlling each of the BART-eligible units that constitute the BART-eligible source.'' 40 CFR part 51, appendix Y, section V. This principle applies here.

C. Other Resultant Changes

Because we are now approving North Dakota's NO_X BART determinations for MRYS 1 and 2 and LOS 2, the basis for our proposed disapproval of North Dakota's RPGs is slightly changed from our proposal. Disapproval is still warranted because North Dakota's RPGs do not represent our final NO_X BART FIP limits at CCS 1 and 2 or our final NO_X reasonable progress FIP limits at AVS 1 and 2 (or the Heskett or Coyote controls that North Dakota included in the SIP). As part of our FIP, we are finalizing RPGs that are consistent with the controls we are imposing at CCS 1 and 2 and AVS 1 and 2, and the Heskett and Coyote controls that North Dakota included in the SIP. For further details regarding our rationale, please refer to our proposal and to our response to comments.

Similarly, because we are now approving North Dakota's NO_X BART determinations for MRYS 1 and 2 and LOS 2, the basis for our proposed partial disapproval of North Dakota's LTS is slightly changed from our proposal. Partial disapproval is still warranted because we are disapproving North Dakota's NO_X BART determination for CCS 1 and 2 and NO_X reasonable progress determination for AVS 1 and 2, and the LTS does not reflect our final NO_X BART FIP limits at CCS 1 and 2 or our final NO_X reasonable progress FIP limits at AVS 1 and 2, or corresponding compliance provisions. Except for these missing elements, the LTS satisfies the requirements of 40 CFR 51.308(d)(3), so we are approving the remainder of the LTS. Our FIP fills the gap left by our partial disapproval of the LTS by specifying NO_X emission limits for CCS 1 and 2 and AVS 1 and 2, compliance schedules, and monitoring, recordkeeping, and reporting

[1] U.S. EPA, EPA Air Pollution Control Cost Manual, EPA/452/B–02–001, 6th Ed., January 2002, Section 4.2, Chapter 1, p. 1–3.

[2] *http://www.ftek.com/en-US/products/apc/noxout/.*

[3] Institute of Clean Air Companies, White Paper Selective Non-Catalytic Reduction (SNCR) for Controlling NO_X Emissions, February 2008, p. 9.

requirements. For further details regarding our rationale, please refer to our proposal and our response to comments.

IV. Basis for Our Final Action

We have fully considered all significant comments on our proposal, and, except as noted in section III, above, have concluded that no other changes from our proposal are warranted. Our action is based on an evaluation of North Dakota's SIP submittals and our FIP against the regional haze requirements at 40 CFR 51.300–51.309 and CAA sections 169A and 169B, and against the interstate transport requirements concerning visibility at CAA section 110(a)(2)(D)(i)(II). All general SIP requirements contained in CAA section 110, other provisions of the CAA, and our regulations applicable to this action were also evaluated. The purpose of this action is to ensure compliance with these requirements. Our authority for action on North Dakota's SIP submittals is based on CAA section 110(k). Our authority to promulgate our partial FIP is based on CAA section 110(c).

A. Regional Haze

We are approving most of North Dakota's RH SIP provisions because they meet the relevant regional haze requirements. Most of the adverse comments we received concerning our proposed partial approval of the RH SIP pertained to North Dakota's BART and reasonable progress determinations.

With respect to the BART determinations that we proposed to approve, we understand that there is room for disagreement about certain aspects of the State's analyses. Furthermore, we may have reached different conclusions had we been performing the determinations in the first instance. However, the comments have not convinced us that the State, conducting specific case-by-case analyses for the relevant units, acted unreasonably or that we should be disapproving the State's BART determinations that we proposed to approve.

With respect to North Dakota's reasonable progress determinations that we proposed to approve, we continue to disagree with the manner in which North Dakota evaluated visibility improvement when it evaluated single source controls and have disregarded this evaluation in our consideration of the reasonableness of North Dakota's reasonable progress control determinations. We also disagree with some of North Dakota's legal conclusions about the necessity of reasonable progress controls for certain sources—specifically, for Coyote Station for NO_X and for Heskett Station 2 for sulfur dioxide (SO_2). However, in these instances, North Dakota nonetheless included emission limits in the SIP that reflect reasonable levels of control for reasonable progress for this initial planning period. Here again, we understand that there is room for disagreement about the State's analyses and appropriate limits. And, again, we may have reached different conclusions had we been performing the determinations. However, the comments have not convinced us that the State, conducting specific case-by-case analyses for the relevant units, made unreasonable determinations for this initial planning period or that we should be disapproving the State's reasonable progress determinations that we proposed to approve.

As noted, we are disapproving North Dakota's NO_X BART determination for CCS 1 and 2 and its NO_X reasonable progress determination for AVS 1 and 2 and promulgating a partial FIP to establish the required limits and corresponding compliance provisions. For CCS 1 and 2, the State relied on values for costs of compliance supplied by the owner that were admittedly erroneous. As explained in detail in our response to comments, the comments we received have not convinced us that our disapproval of the State's NO_X BART determination for CCS 1 and 2 is unreasonable, or that our NO_X BART FIP determination and limits (as modified in this final action) are unreasonable. In particular, we conclude that GRE's latest cost estimates and cost effectiveness values for SNCR, as reflected in its November 2011 comments, are not based on reasonable assumptions and overestimate the costs of compliance. Instead, our consideration of the five statutory BART factors leads us to conclude that SNCR plus SOFA plus LNB is BART, with a limit of 0.13 lb/MMBtu on a 30-day rolling average basis. Also, we continue to find that the costs of SCR are not reasonable given the projected visibility improvement; the comments we received on this issue have not convinced us otherwise.

For AVS 1 and 2, consistent with our proposal, we are disapproving the State's determination under our reasonable progress requirements (40 CFR 51.308(d)(1)) that no additional NO_X emissions controls are warranted, and we are finalizing a FIP with a reasonable progress determination and a NO_X emission limit for AVS 1 and 2 of 0.17 lb/MMBtu on a 30-day rolling average basis. Nothing in the comments has convinced us that the State's determination was reasonable or that our proposed FIP was unreasonable. As we noted in our proposal, the costs for installation and operation of combustions controls at AVS 1 and 2 are very reasonable ($586 and $661 per ton) and the predicted NO_X reductions are substantial—3,500 tons per unit per year. Appropriate single-source modeling also indicates that the visibility benefits will be substantial—0.754 deciviews. Based on these facts, and given that North Dakota's RPGs will not meet the uniform rate of progress (URP), it was unreasonable for North Dakota to reject LNB at AVS 1 and 2. We have determined that the State's rejection of this level of control, and the corresponding RPGs, are not justifiable based on a reasonable consideration of the applicable regulatory factors—costs of compliance, time necessary for compliance, energy and non-air quality environmental impacts of compliance, and remaining useful life of the source. LNB is a modest, widely-used, cost-efficient means to achieve significant NO_X reductions, and the resultant visibility benefits will be comparable to or greater than the benefits achieved through selected controls at several BART units in North Dakota. We have also rejected comments that call for more stringent controls at AVS 1 and 2 in this planning period. While such controls may be appropriate in a later planning period, we cannot say that the State's rejection of such controls in this planning period was unreasonable. For further details regarding our rationale, please refer to our proposal and our response to comments.

Consistent with our proposal, we are approving the remaining elements of North Dakota's RH SIP because such elements meet the relevant requirements of our regional haze regulations.

B. Interstate Transport, Visibility Prong

The basis for this part of our action remains unchanged from our proposal. Nothing in the comments has convinced us that a change from our proposal is warranted. North Dakota's April 6, 2009 transport submittal contained only a cursory reference to CAA section 110(a)(2)(D)(i)(II)'s requirement for a SIP revision that contains adequate provisions ''prohibiting any source or other type of emission activity within the State from emitting any air pollutant in amounts which will * * * interfere with measures required to be included in the applicable implementation plan for any other State under part C [of the CAA] to protect visibility.'' Because of the impacts on visibility from the interstate transport of pollutants, we

interpret the ''good neighbor'' provisions of section 110 of the Act described above as requiring states to include in their SIPs either measures to prohibit emissions that would interfere with the RPGs required to be set to protect Class I areas in other states, or a demonstration that emissions from North Dakota sources and activities will not have the prohibited impacts. North Dakota's April 6, 2009 submittal contains neither. Thus, we are disapproving it. To the extent that the State intended to meet the requirement of section 110(a)(2)(D)(i)(II) with the RH SIP, the RH SIP submission itself is not fully approvable.

As required by section 110(c), we are promulgating a FIP to satisfy the requirements of CAA section 110(a)(2)(D)(i)(II) concerning visibility protection. As explained in section II, the FIP relies on the combination of the North Dakota RH SIP provisions that we are approving and the additions to the regional haze program for North Dakota that we are promulgating in our FIP for NO_X BART for CCS 1 and 2 and NO_X reasonable progress for AVS 1 and 2. Because this combination exceeds the stringency of BART and reasonable progress limits that were already factored into the Western Regional Air Partnership (WRAP) modeling for RPGs, this combination meets the visibility prong of CAA section 110(a)(2)(D)(i)(II). This combination of regional haze controls will ensure that emissions from sources in North Dakota do not interfere with other states' visibility programs as required by section 110(a)(2)(D)(i)(II) of the CAA.

For further details regarding our rationale, please refer to our proposal and our response to comments.

V. Issues Raised by Commenters and EPA's Responses

A. NO_X BART for Milton R. Young Station Units 1 and 2 and Leland Olds Station Unit 2

As noted in section III of this action, in a major change from our proposal, we are now approving North Dakota's NO_X BART determinations for MRYS 1 and 2 and LOS 2, and we are not proceeding with a FIP for NO_X BART for these units. We explain the basis for this change in section III.

We received numerous comments that were specific to the NO_X BART determinations for MRYS 1 and 2 and LOS 2. These related to a variety of issues—modeling and visibility improvement, costs of compliance, technical feasibility, appropriate emission limits, and other issues. The grounds for our decision to approve North Dakota's NO_X BART determinations for MRYS 1 and 2 and LOS 2 render irrelevant further consideration of these issues. Essentially, we are approving the State's determination of BART based on a federal court's ruling on our challenge to the State's BACT determination for MRYS. In establishing BACT, the State established an emission limit based on what it considered the maximum degree of reduction of NO_X, taking into account various factors similar to those in a BART determination. Thus, while we disagree with the vast majority of the comments that disputed our technical and legal analyses concerning NO_X BART for MRYS 1 and 2 and LOS 2, we generally are not summarizing or responding to those comments to the extent they are specific to the assessment of NO_X BART for MRYS 1 and 2 and LOS 2.[4] However, we are responding to comments that may be relevant to other aspects of this action.

B. Comments on Legal Issues

1. EPA's Authority

Comment: Multiple commenters stated that CAA Section 169A and the Regional Haze Rule (RHR) give the states (North Dakota in this instance) the lead in developing their regional haze SIPs. Some commenters went further in stating that North Dakota is given almost complete discretion in creating its RH SIP. These commenters argued that, because North Dakota is given such discretion, EPA lacks the statutory authority to disapprove the State's RH SIP. Specifically, some commenters pointed to the flexibility the State is granted in developing its BART determination, RPGs, modeling protocol and cost analysis. The State of North Dakota, for instance, argued that each factor in the five-factor analysis used to make its BART determination was appropriately weighed based on the State's own discretion. The State therefore argues that the EPA has no basis on which to disapprove the five-factor analysis.

Response: 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. EPA's review of SIPs is not limited to a ministerial type of automatic approval of a state's decisions. EPA must consider not only whether the State considered the appropriate factors but acted reasonably in doing so. In undertaking such a review, EPA does not ''usurp'' the state's authority but ensures that such authority is reasonably exercised. EPA has the authority to issue a FIP either when EPA has made a finding that the State has failed to timely submit a SIP or where EPA has found a SIP deficient. Here, EPA has authority on both grounds, and we have chosen to approve as much of the North Dakota SIP as possible and to adopt a FIP only to fill the remaining gap. Our action today is consistent with the statute. In finalizing our proposed determinations, we are approving the State's determinations in identifying BART eligible sources and largely approving the State's BART determinations for seven different emission units subject to BART. Also, we are largely approving the State's reasonable progress determinations. We are, however, disapproving the State's NO_X BART determinations for two units—CCS 1 and 2—and its NO_X reasonable progress determinations for two units—AVS 1 and 2.

The State's NO_X BART determinations for CCS 1 and 2 are not approvable because North Dakota did not properly follow the requirements of section 51.308(e)(1)(ii)(A). Specifically, North Dakota did not reasonably ''take into consideration the costs of compliance,'' when it relied on cost estimates that greatly overestimated the costs of controls. We have determined that the faults in the cost estimates were significant enough that they resulted in BART determinations for NO_X for CCS 1 and 2 that were both unreasoned and unjustified. Accordingly, these determinations are not approvable.

We are disapproving the State's determination that no NO_X controls are needed at AVS 1 and 2 to achieve reasonable progress because the State's determination is not reasonable under the relevant statutory and regulatory requirements.

In the absence of approvable NO_X BART determinations in the SIP for CCS 1 and 2 and in the absence of an approvable reasonable progress determination concerning NO_X controls at AVS 1 and 2, we are obliged to promulgate a FIP to satisfy the CAA requirements. Likewise, in the absence of an approvable SIP that addresses the requirement that emissions from North Dakota sources do not interfere with measures required in the SIP of any other state to protect visibility, we are obliged to promulgate a FIP to address the defect. This authority and

[4] Some commenters criticized the credibility and credentials of one of our sub-contractors. Because of their focused nature, we have included a response to some of those comments in our docket for this action, even though the substance of the issues is no longer relevant to our decision.

responsibility exists under CAA section 110(c)(1).

We also are required by the terms of two separate consent decrees, one in the U.S. District Court for the District of Colorado and one in the U.S. District Court for the Northern District of California to ensure that North Dakota's CAA requirements for regional haze and for 110(a)(2)(D)(i)(II), respectively, are finalized by March 2, 2012. Because we have found that the State's SIP submissions do not adequately satisfy either requirement in full and because we have previously found that North Dakota failed to timely submit these SIP submissions, we have not only the authority, but a duty to promulgate a FIP that meets those requirements.

Our action in large part approves the RH SIP submitted by North Dakota. The disapproval of the NO_X BART and reasonable progress determinations and imposition of the FIP is not intended to encroach on state authority. This action is only intended to ensure that CAA requirements are satisfied using our authority under the CAA.

Comment: The NDDH commented that states are free to deviate from the BART guidelines in the preparation of their BART analyses, except for power plants with a capacity exceeding 750 megawatts (MW).

Response: We agree that the BART guidelines are only mandatory under the regional haze regulations for ''fossil-fuel fired power plants having a total generating capacity greater than 750 megawatts.'' 40 CFR 51.308(e)(1)(ii)(B). However, the fact that a state may deviate from the guidelines for other BART sources does not mean that the state has unfettered discretion to act unreasonably or inconsistently with the CAA and our regulations. Where the BART guidelines are not mandatory, a state must still meet the requirements of the CAA and our regulations. In other words, the State must still adopt and apply the best available retrofit technology, considering the statutory factors.

Our regulations define best available retrofit technology to mean ''an emission limitation based on the degree of reduction achievable through the application of the *best system* of continuous emission reduction for each pollutant which is emitted by an existing stationary facility.'' 40 CFR 51.301 (emphasis added). We do not consider that this definition can simply be dismissed under the mantle of state discretion.

In addition, North Dakota's own regulations, which have been submitted for our approval and which we are approving with this action, provide as follows:

> ''33–15–25–03 Guidelines for best available retrofit technology determinations under the Regional Haze Rule.
>
> Title 40, Code of Federal Regulations, part 51, appendix y, as published in the **Federal Register** on July 6, 2005, is incorporated by reference into this chapter. The owner or operator of a fossil-fuel-fired steam electric plant with a generating capacity greater than seven hundred fifty megawatts of electricity shall comply with the requirements of appendix y. All other facility owners or operators *shall use* appendix y as guidance for preparing their best available control retrofit technology determinations.''

(Emphasis added.) Appendix Y contains EPA's BART guidelines. Our approval of this regulation makes it federally enforceable.

North Dakota appears to disavow the dictates of its own regulation:

> ''EGUs with a capacity of less than 750 MW * * * are free to deviate from the BART Guidelines in the preparation of their BART analyses.
>
> MRYS * * * *may use* the Guidelines as guidance only.''

State of North Dakota's November 21, 2011 comments, p. 22 (emphasis added). But, the regulation says that EGUs less than 750 MW ''shall use'' EPA's BART guidelines as guidance, not that they ''may use'' them as guidance or that they are ''free to deviate'' from them.

Given that North Dakota's own regulation, which we are making federally enforceable with this action, requires the use of the BART guidelines as guidance for BART analyses, we think it reasonable to conclude that any deviation from the guidelines must be based on a reasonable justification.

Regardless, the BART guidelines are mandatory for CCS, which is the one source for which we are disapproving the State's BART determination.

Comment: North Dakota meets the presumptive BART limits for NO_X at CCS 1 and 2, based on the 2005 BART Guidelines. EPA's rationale for disapproving the BART determinations at CCS 1 and 2 is therefore flawed and contrary to the BART Guidelines. EPA appears to be undertaking a national effort to change its BART Rule without going through notice and comment rulemaking to amend or repeal the rule. EPA is doing so by ''applying BART determinations made for sources in one state as a new presumptive limit for all states.'' Commenter cites 76 FR 58623 of the proposed rule, where EPA justifies a cost/ton ''that states other than North Dakota have considered reasonable for BART,'' but is higher than the presumptive BART limits.

Response: We disagree with the commenter. First, for each source subject to BART, the RHR, at 40 CFR 51.308(e)(1)(ii)(A), requires that states identify the level of control representing BART after considering the factors set out in CAA section 169A(g), as follows: States must identify the best system of continuous emission control technology for each source subject to BART taking into account the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use at the source, the remaining useful life of the source, and the degree of visibility improvement that may be expected from available control technology. 70 FR 39158. In other words, the presumptive limits do not obviate the need to identify the best system of continuous emission control technology on a case-by-case basis considering the five factors. A state may not simply ''stop'' its evaluation of potential control levels at the presumptive level of control if more stringent control technologies or limits are technically feasible. We do not read the BART guidelines in appendix Y to contradict the requirement in our regulations to determine ''the degree of reduction achievable through the application of the best system of continuous emission reduction'' ''on a case-by-case basis,'' considering the five factors. 40 CFR 51.301 (definition of Best Available Retrofit Technology); 40 CFR 51.308(e). Also, our interpretation is supported by the following language in our BART guidelines:

> While these levels may represent current control capabilities, we expect that scrubber technology will continue to improve and control costs continue to decline. You should be sure to consider the level of control that is currently best achievable at the time that you are conducting your BART analysis.

70 FR 39171. The presumptive limits are meaningful as indicating a level of control that EPA generally considered achievable and cost effective at the time it adopted the BART guidelines in 2005, but not a value that a state could adopt without conducting a five factor analysis considering more stringent, technically feasible levels of control.

The commenter focuses on narrow passages of the BART guidelines to support its view that the presumptive limits represent the most stringent BART controls that EPA can require for regional haze. However, these passages must be reconciled with the language of the RHR cited above, as well as other passages of the BART guidelines and associated preamble. A central concept expressed in the guidelines is that a

state is not required to consider the five factors if it has selected the most stringent level of control; otherwise, a state must fully consider the five factors in determining BART. 40 CFR part 51, appendix Y, section IV.D.1, step 1.9. Undoubtedly, as the commenter notes, the presumptive limits for NO_X represent cost effective controls, but it is well-understood that limits based on combustion controls do not represent the most stringent level of control for NO_X. Thus, a state which selects combustion controls and the associated presumptive limit for NO_X as BART may only do so after rejecting more stringent control technologies based on full consideration of the five factors. Our interpretation reasonably reconciles the various provisions of our regulations. We clearly communicated our views on this subject to North Dakota while it was developing its RH SIP, and, following our interpretation, North Dakota conducted an analysis of control technologies that would achieve a more stringent limit than combustion controls.

While North Dakota conducted a five-factor analysis to determine BART at CCS, its determination was based on erroneous values for the costs associated with potential loss of fly ash sales due to ammonia contamination, something the source acknowledged in June of 2011. 76 FR 58603. A BART determination based on substantially erroneous cost values does not meet the requirements of the CAA or our regulations to determine the best system of continuous emission control technology considering cost and the other statutory factors. Because we cannot approve the State's BART determination, we are authorized, and in this case obligated, to promulgate a FIP.

In promulgating a FIP for CCS, we arrived at an emission limit that is more stringent than the presumptive limit based on consideration of the five factors. Contrary to the commenter's suggestion, EPA's BART guidelines do not establish a presumptive cost effectiveness level that is a ''safe harbor'' or ''shield'' for state BART determinations, or that EPA, when promulgating a FIP, may not exceed in determining BART. Once a FIP is required, we stand in the state's shoes. In considering the cost factor, it is reasonable for us to consider other sources of information to inform our decision, including the cost values other states have considered reasonable. This is not EPA establishing a new presumptive limit or national rule; it is EPA, acting in the state's shoes, conducting a reasonable source-specific consideration of cost and the other regulatory factors. In addition, although not required, we considered cost effectiveness values that the State of North Dakota had considered to be reasonable in reaching its BART determinations. See 76 FR 58623 (''It is also within the range of values that North Dakota considered reasonable in its NO_X BART determinations * * *'')

Comment: EPA has failed to articulate, or apply, a SIP review standard that preserves state authority over BART determinations. EPA can't rely on vague references to the overarching purpose of the regional haze program to define what's reasonable. The CAA only requires consideration of the five statutory factors and emission limits that yield a reduction in visibility impairment. EPA has contradicted prior statements in various contexts, such as reports to Congress. EPA has provided no objective measure to gauge EPA's assessment. EPA's vague standards result in arbitrary and capricious decision making. EPA must articulate the standard by which it evaluates and disapproves a SIP and must support its decision with a plausible explanation.

Response: Our proposal clearly laid out the bases for our proposed disapproval of the State's BART and reasonable progress determinations, and we have relied on the standards contained in our regional haze regulations and the authority that Congress granted us to review and determine whether SIPs comply with the minimum statutory and regulatory requirements. To the extent a cost analysis relies on values that are inaccurate, a state has not considered cost in a reasoned or reasonable fashion. To the extent a state has considered visibility improvement from potential emissions controls in a way that substantially understates the improvement or does so in a way that is not consistent with the CAA, the state has not considered visibility improvement in a reasoned or reasonable fashion. In these circumstances, it is reasonable for EPA to disapprove the relevant aspects of the SIP. In determining SIP adequacy, we inevitably exercise our judgment and expertise regarding technical issues, and it is entirely appropriate that we do so. Courts have recognized this necessity and deferred to our exercise of discretion when reviewing SIPs. See, e.g., *Connecticut Fund for the Env't., Inc.* v. *EPA,* 696 F.2d 169 (2nd Cir. 1982); *Michigan Dep't. of Envtl. Quality* v. *Browner,* 230 F.3d 181 (6th Cir. 2000); *Mont. Sulphur & Chem. Co.* v. *United States EPA,* 2012 U.S. App. LEXIS 1056 (9th Cir. Jan. 19, 2012).

We disagree with the argument that we must approve a BART determination where the SIP reflects consideration of the five factors and the BART selection will result in some improvement in visibility. We think Congress expected more when it required the application of ''best available retrofit technology.''

While the commenter places great emphasis on EPA's prior statements in reports to Congress, these statements have no regulatory effect. Also, these statements are not as supportive of commenter's position as commenter suggests. For example, ''some flexibility'' does not suggest unfettered flexibility; a report's suggestion that a cooperative approach would make sense does not suggest that EPA will or must approve unilateral decision-making by a state no matter what.

Contrary to the commenter's assertion, we have not destroyed the State's primacy. In fact, we have approved the vast majority of the State's determinations. We are only rejecting the State's unreasonable analyses and decisions. We are authorized to do so.

Comment: The grounds invoked by EPA to disapprove the RH SIP are legislative in nature and cannot be imposed without advance notice and comment rulemaking. EPA's proposed action on North Dakota's SIP articulates a number of grounds not contained in CAA section 169A that must be met for a SIP to be ''approvable.'' These additional grounds have never been defined or promulgated with notice and comment rulemaking. For example, EPA's proposed action articulates a two pronged test for BART SIP approval: first, ''a state must meet the requirements of the CAA and our regulations for selection of BART''; and second, ''the state's BART analysis and determination must be reasonable in light of the overarching purpose of the regional haze program.'' 76 FR 58577. The commenter objects to the second prong, *i.e.,* that ''the state's BART analysis and determination must be reasonable in light of the overarching purpose of the regional haze program.'' According to the commenter, this is a new ''reasonableness'' standard that is neither defined nor separately set forth in the Act. The commenter asserts that EPA is proposing to measure a BART determination not just against the statutory criteria but also against EPA's own subjective view whether the result reached is reasonable enough to meet the ''overarching goal'' of the Act. EPA's new subjective reasonable enough requirement imposes a new legislative standard that either goes beyond or, for

the first time, purports to define ''the requirements of the Act.'' This empowers EPA to disapprove a state BART determination and replace it with its own on reasonableness grounds that have never been defined or first vetted through public notice and comment.

Response: First, even assuming that EPA's proposed action on the North Dakota RH SIP articulated new grounds for evaluating a regional haze SIP, the proposed action provides the public with the opportunity to comment. As evidenced by the commenter's submission, the commenter had the opportunity to comment on EPA's approach to evaluating the North Dakota RH SIP and to identify any concerns associated with the statement at issue from our proposal and other aspects of our action.

Second, the CAA requires states to submit SIPs that contain such measures as may be necessary to make reasonable progress toward achieving natural visibility conditions, including BART. The CAA accordingly requires the states to submit a regional haze SIP that includes BART as one necessary measure for achieving natural visibility conditions. In view of the statutory language, it is hardly a novel idea that the reasonableness of the state's BART analysis and determination would be evaluated in light of the purpose of the regional haze program. In addition, our regional haze regulations, at 40 CFR 51.308(d)(ii), provide that when a state has established a RPG that provides for a slower rate of improvement in visibility than the URP (as has North Dakota), the state must demonstrate, based on the reasonable progress factors—*i.e.,* costs of compliance, time necessary for compliance, energy and non-air quality environmental impacts of compliance, and remaining useful life of affected sources—that the rate of progress to attain natural visibility conditions by 2064 is not reasonable and that the progress goal adopted by the state is reasonable. 40 CFR 51.308(d)(iii) provides that, ''in determining whether the State's goal for visibility improvement provides for reasonable progress towards natural visibility conditions, the Administrator will evaluate'' the state's demonstrations under section 51.308(d)(ii). It is clear that our regulations and the CAA require that we review the reasonableness of the State's BART determinations in light of the goal of achieving natural visibility conditions. This approach is also inherent in our role as the administrative agency empowered to review and approve SIPs. Thus, we are not establishing a new reasonableness standard, as the commenter asserts.

Comment: EPA established a new adequacy criterion when it found that North Dakota's cost analysis did not provide a reasonable basis to make a NO_X BART determination for LOS 2. It was illegal for EPA to establish a new adequacy criterion without rulemaking.

Response: While we have decided to approve the State's NO_X BART determination for LOS 2, this comment may be relevant to other aspects of our final action.

Our prior response largely addresses this assertion. However, in addition, we think the illogic of the commenter's claim is revealed when the potential consequences of the commenter's views are examined. The necessary product of the commenter's view is that a state could rely on irrational values for any of the five factors, and EPA would be powerless to disapprove the SIP. We reject that view. We are not establishing new criteria for approval of a regional haze SIP. We are applying the criteria and requirements already specified in the CAA and our regulations. Cost is one of the factors a state must consider in determining BART. If North Dakota has relied on greatly inflated cost estimates in its consideration of the cost factor, it has not considered cost in any meaningful sense of the word.

It is also our opinion that the commenter, in its effort to put our action in a specific legal box—*i.e.,* ''illegal administrative action''—consistently misrepresents the nature of our action. This *is* a SIP review action, and we believe that EPA is not only authorized, but required to exercise independent technical judgment in evaluating the adequacy of the State's RH SIP, including its BART determinations, just as EPA must exercise such judgment in evaluating other SIPs. In evaluating other SIPs, EPA is constantly exercising judgment about SIP adequacy, not just to meet and maintain the NAAQS, but also to meet other requirements that do not have a numeric value. In this case, Congress did not establish NAAQS by which to measure visibility improvement; instead, it established a reasonable progress standard and required that EPA assure that such progress be achieved. Here, contrary to the commenter's assertion, we are exercising judgment within the parameters laid out in the CAA and our regulations. Our interpretation of our regulations and of the CAA, and our technical judgments, are entitled to deference. See, e.g., *Michigan Dep't. of Envtl. Quality* v. *Browner,* 230 F.3d 181 (6th Cir. 2000); *Connecticut Fund for the Env't., Inc.* v. *EPA,* 696 F.2d 169 (2nd Cir. 1982); *Voyageurs Nat'l Park Ass'n* v. *Norton,* 381 F.3d 759 (8th Cir. 2004); *Mont. Sulphur & Chem. Co.* v. *United States EPA,* 2012 U.S. App. LEXIS 1056 (9th Cir. Jan. 19, 2012).

Comment: EPA has no statutory authority to disapprove North Dakota's BART determination for LOS 2. CAA section 169A(b)(2) leaves that determination expressly and exclusively in the hands of the State. EPA's SIP approval authority under CAA section 110 only permits EPA to confirm whether the State considered the statutory factors; it does not authorize EPA to pass judgment on how the State considers them. The commenter cites the *American Corn Growers* and *UARG* decisions as support for its comments. Nor, according to the commenter, does section 110 permit EPA to propose its own emission controls. By doing so, EPA's FIP ''run[s] roughshod over the procedural prerogatives that the Act has reserved to the States'' (citing *Bethlehem Steel Corp.* v. *Gorsuch,* 742 F.2d 1028, 1036 (7th Cir. 1984)).

Response: While we have decided to approve the State's NO_X BART determination for LOS 2, this comment may be relevant to other aspects of our final action. The commenter reads too much into the language of 169A. We do not agree that the language, ''as determined by the State,'' grants the State unlimited discretion or ''sole control'' in making a BART determination, any more than the accompanying language, ''or the Administrator in the case of a plan promulgated under section 7410(c) of this title,'' grants EPA unlimited discretion in making a BART determination in a FIP.

Instead, while States are assigned the primary statutory and regulatory authority to determine BART, and have significant freedom to determine the weight and significance of the statutory factors, they have an overriding obligation to come to a reasoned determination. They may not act unreasonably or in an arbitrary and capricious fashion, and Congress has assigned EPA, as the reviewing agency, the role of determining whether a State's BART determination or reasonable progress determination is reasonable.

The commenter's citations to legislative history are unconvincing. Among other things, they are incomplete. The commenter ignores the intent behind the 1977 legislation:

> ''The Administrator must promulgate regulations which assure attainment of the national goal * * * Specifically, the regulations must require that States which contain mandatory class I areas, and States

whose emissions cause or contribute to visibility problems in such areas, revise their implementation plan to include two elements. The first element of the plan revision is that the State plan must provide for installation of ''best available retrofit technology'' for existing major stationary sources which cause or contribute to visibility impairment in such areas.''

95 Cong. Conf. Report H. Rept. 564, at 154.

Commenters suggest that visibility issues are only of state and local concern and that is why Congress left states with sole control. This is inconsistent with the very first sentence of the statute: ''Congress hereby declares as a *national goal* the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas * * *'' CAA section 169A, (emphasis added). It is also inconsistent with the legislative history, which states:

''There are certain national lands, including national parks, national monuments, national recreation areas, national primitive areas, and national wilderness areas, in which protection of clean air quality is obviously a critical national concern * * * Indeed, the millions of Americans who travel thousands of miles each year to visit Yosemite or the Grand Canyon or the North Cascades will find little enjoyment if, for example, upon reaching the Grand Canyon it is difficult if not impossible to see across the great chasm. If that were to come to pass—and several of our great national parks, including the Grand Canyon, are threatened today by such a fate—the very values which these unique areas were established to protect would be irreparably diminished, perhaps destroyed.''

95 Cong. House Report 294 at 137.

Thus, we do not agree that Congress assigned us a merely ministerial role; it is not evident how such a limited role would assure attainment of the national goal or the actual imposition of the best available retrofit technology where a state's BART determination is unreasonable, arbitrary and capricious, or not in accordance with the law.

We also disagree that our proposal is inconsistent with the *American Corn Growers* and *UARG* decisions. These cases dealt with EPA's authority to issue generic regulations regarding BART determinations. They did not address EPA's authority in reviewing a SIP.

Contrary to the commenter's assertion, the *Bethlehem Steel* case is inapplicable here. We are promulgating BART and reasonable progress limits under the authority of CAA section 110(c), not through our action on North Dakota's SIP. We have authority to promulgate our FIP under 110(c) on two separate grounds: first, based on our January 2009 finding of failure to submit the RH SIP; and second, based on our partial disapproval of the RH SIP.

Comment: Commenter stated that EPA is incorrect to assert that NDDH did not adequately consider all five statutory factors for LOS 2. Commenter stated that EPA concludes, in its own BART evaluation, that SNCR + ASOFA (NDDH's BART selection) is cost effective and provides substantial visibility benefits. When a state has taken into consideration the five statutory factors and selected a technology that reduces visibility impairments, it has complied with the statute and EPA must approve the SIP. Since EPA's own FIP analysis proves North Dakota's choice complies with the statute, EPA has no basis to disapprove it.

Response: While we have decided to approve the State's NO_X BART determination for LOS 2, this comment may be relevant to other aspects of our final action. The commenter cites no authority in the CAA or our regulations for its assertion that a BART determination that considers the five statutory factors is adequate as long as it provides some reduction in visibility impairment. We know of no such criterion. Instead, our regulations define BART as an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. Given that the BART limit must reflect the ''application of the best system of continuous emission reduction,'' we interpret the Act to require a reasonable consideration of the five factors, one that is not arbitrary and capricious.

Comment: EPA's effort to impose BART determinations by federal rulemaking impermissibly deprives source owners of the substantive procedural rights they are otherwise afforded under State law. The commenter notes that the State used a permit process to establish BART limits, and that a similar source-by-source adjudication of such limits must be provided by EPA. The commenter also asserts that EPA must allow for examination and cross-examination of witnesses, and that, otherwise, the process is not consistent with due process.

Response: While the State has chosen to use the permit process to establish BART limits for individual sources, there is nothing in the CAA or our regulations that requires states or EPA to use permits or a source-by-source adjudicatory proceeding to establish BART limits. Both the CAA and our regulations require that BART limits be contained in a SIP. In the absence of an approvable SIP, CAA section 110(c) requires us to issue a FIP. We have issued a partial FIP pursuant to CAA section 307. CAA section 307 provides that its provisions apply in lieu of the Administrative Procedure Act (APA). The procedures provided by CAA section 307 are adequate to ensure due process to source owners. We have provided a substantial opportunity for comment (a two-month long comment period) and an extensive public hearing that lasted 14 hours over two days. The commenter submitted over 140 pages of comments with several attachments, and other commenters submitted comments of similar length. It is not unusual for FIPs to include source-specific limits and requirements. An opportunity for examination and cross-examination of witnesses is not required by the CAA, nor is it required to ensure due process. Individuals and entities affected by EPA's action have had ample opportunity to challenge EPA's conclusions.

Comment: Sole control over BART determinations for EGUs under 750 MW is left to the states. Congressional intent to exclude federal involvement in BART determinations for smaller generating stations is apparent from the plain text of the statute and is binding on EPA. EPA may not disapprove a state BART determination for an EGU the size of Leland Olds.

Response: EPA disagrees with the suggestion that Congress intended to totally remove EPA from review of BART determinations for EGUs less than 750 MW. The statute merely says that for EGUs greater than 750 MW, BART must be determined in accordance with guidelines promulgated by EPA. That does not obviate the need for the State to select BART, after considering the five statutory factors. And, it does not remove EPA's review role over SIP submittals.

Comment: North Dakota has the authority under the RHR to review the new updated cost analyses provided by URS and Golder Associates on behalf of GRE.

Response: Our action does not prevent North Dakota from reviewing GRE's updated cost analyses, or from submitting a revised SIP. States always have the freedom to submit SIP revisions to EPA. We need not speculate in this action whether such a revision would be approvable. However, such a SIP revision is not the subject of this action, and we are neither obligated nor authorized to wait for such a revision before we finalize our proposed action. To the contrary, we have already exceeded the statutory deadline for promulgating a FIP or approving a SIP for regional haze, and, under two separate consent decrees, we must finalize this action by March 2, 2012.

GRE acknowledged in a June 2011 email that it had made errors in its original cost estimates for NO_X BART for CCS. The State relied on those erroneous cost figures in its NO_X BART analysis and determination for CCS in its RH SIP that it submitted on March 3, 2010. This is the main RH SIP submittal that we are acting on today.

Because of the magnitude of these acknowledged errors, it is appropriate to disapprove the BART determination for CCS 1 and 2 that is contained in the March 3, 2010 submittal. We explain in response to a prior comment why selection of the presumptive limits without a valid case-specific analysis supporting such limits as BART is not sufficient to meet the requirements of the regional haze regulations. Based on our disapproval of the SIP, and on separate grounds related to our January 2009 finding of failure to submit, we are authorized and obligated to promulgate a FIP for NO_X BART for CCS 1 and 2. CAA section 110(c). We have considered GRE's revised cost analyses in the context of our proposed FIP and address those analyses in a subsequent response.

Comment: Commenter stated that EPA's action is in violation of the 10th amendment to the Constitution.

Response: Our action does not compel North Dakota to enforce federal law and does not intrude on authority reserved to the states. Thus, our action is consistent with the 10th amendment to the Constitution.

Comment: Commenter stated that EPA's action is in violation of Article 4 of the Constitution.

Response: The comment does not specify which aspect of Article 4 we are alleged to have violated. However, we conclude that our action does not violate any aspect of Article 4 of the Constitution.

Comment: Commenter stated that Federal Land Managers (FLMs) are using their Air Quality Related Values Workgroup (FLAG) report, a guidance document, in highly inappropriate ways.

Response: This comment appears to relate to how the FLMs respond to proposed PSD permits rather than EPA's proposed actions here. Accordingly, we are not responding to the substance of this comment. Contrary to the commenter's assertion, we do not consider our own actions to be inflexible. We note that we are approving the great majority of the State's BART and reasonable progress determinations.

2. Interstate Transport Consent Decree

Comment: Commenter states that EPA wrongly uses the Interstate Transport consent decree to justify action by the September 1, 2011 deadline. Commenter claims that EPA separately acknowledged that the Interstate Transport consent decree never addressed the regional haze plan. North Dakota has sought leave of the court that issued the consent decree to intervene in the case. North Dakota is also seeking a declaration from the Court that EPA is exceeding its authority under that consent decree to use it for justification of the regional haze proposal.

Response: The United States District Court for the Northern District of California rejected the commenter's arguments in an order dated December 27, 2011. We agree that the transport consent decree does not address the regional haze plan. However, as the court in California recognized, we made an appropriate administrative decision to address the CAA's transport requirements and regional haze requirements in the same action. Given that we faced a September 1, 2011 deadline for our proposed transport action under the transport consent decree, and faced an uncertain deadline for proposed action and a January 26, 2011 deadline for final action under the then-lodged regional haze consent decree, we acted in a prudent and reasonable fashion to sign our notice of proposed rulemaking by the September 1, 2011 deadline in the transport consent decree.

Comment: North Dakota's Interstate Transport SIP, specifically the ''visibility'' element of CAA Section 110(A)(2)(D)(i)(II), must be approved. North Dakota commented that EPA had no reason not to act on the visibility portion of the State's interstate transport SIP submission according to EPA's 2006 guidance. Another commenter stated that the EPA ''admits'' in the Proposed North Dakota RH SIP/FIP that the State met the sole obligation of Section 110(A)(2)(D)(i)(II), and that the EPA's reasons for disapproval therefore lack basis.

Response: We fully explained the basis for our proposed disapproval of North Dakota's interstate transport SIP in our proposal. See 76 FR 58641–58642. We have fully considered the comments, but nothing in the comments has caused us to change our views. As we explained in our proposal, our 2006 guidance was premised on a certain set of assumptions—in particular, that states would submit their regional haze SIPs by the regulatory deadline and that the regional haze SIPs would be the appropriate means for states to establish that their SIPs contained adequate provisions to prevent interference with the visibility programs required in other states. It turned out we were mistaken in our assumptions, and we explained in our proposal that subsequent events have rendered our 2006 guidance inappropriate in this specific action. Thus, we appropriately and reasonably evaluated the State's interstate transport SIP against the statutory requirements and found it deficient. The State disagrees with the way in which we characterized the State's transport SIP in our proposal at 76 FR 58574, but we were clear in our discussion later in our notice that ''North Dakota did not explicitly state in its April 6, 2009, submittal that it intended that its Regional Haze SIP be used to satisfy the visibility prong * * *'' 76 FR 58641.

Basin Electric misrepresents our proposed action. While we indicated that the State had not explicitly indicated that it was submitting the RH SIP to meet the interstate transport requirements, which left us in an uncertain position, that was not the only basis for our conclusion that the RH SIP did not meet the transport requirements. Instead, we stated, ''Most importantly, however, EPA must review the April 6, 2009 submission in light of the current facts and circumstances, and the RH SIP revision that the State ultimately submitted does not fully meet the substantive requirements of the regional haze program * * * To the extent that the State intended to meet the requirement of section 110(a)(2)(D)(i)(II) with the RH SIP, the RH SIP submission itself is not fully approvable.'' 76 FR 58642.

The State and Basin Electric assert that we should approve the RH SIP as satisfying the transport requirements even though we are disapproving the SIP as meeting regional haze requirements. We disagree. Under the suggested approach, EPA would simultaneously codify in the Code of Federal Regulations disparate and conflicting requirements—the SIP limits

and associated requirements (or in the case of AVS, the lack thereof) for certain EGUs and the FIP limits and associated requirements for those same EGUs. This could lead to confusion regarding the requirements applicable to the industrial sources affected, including confusion in enforcement actions. Accordingly, we have decided to finalize our proposed disapproval of North Dakota's interstate transport SIP.

Comment: The NDDH commented that EPA has not provided any credible evidence that the additional emission reductions from the FIP will produce any discernible visibility improvement in out-of-state Class I areas and has not provided any credible evidence that these additional emission reductions are necessary to prevent North Dakota sources from interfering with another state's ability to protect visibility.

Response: In our proposal, we did not claim that our FIP to address the requirements of CAA section 110(a)(2)(D)(i)(II) would result in visibility improvement in out-of-state areas. We did not have the time or resources to re-do the WRAP modeling that states in the region had relied on in assessing the impacts of emissions reductions and in setting their RPGs. Instead, we noted that the emission limits in our proposed FIP to address certain deficiencies in the State's BART and reasonable progress measures in its RH SIP would exceed the emissions reductions for BART and reasonable progress for these sources that had been factored into the WRAP modeling for RPGs. As a result, we concluded that the limits in the FIP, in combination with the measures in the SIP that we had proposed to approve, would satisfy the interstate transport requirements for visibility. We continue to find that this is a reasonable conclusion. Although there may be other acceptable approaches to satisfying the requirements of CAA section 110(a)(2)(D)(i)(II) that would require additional visibility modeling, the approach that we have adopted does not require that we assess through modeling the visibility improvement that will result from our FIP to assure that North Dakota's emissions do not interfere with measures required in the plans of other states to protect visibility.

3. Other General Legal Comments

Comment: Some commenters stated that EPA cannot promulgate a FIP until it has taken final action on the related SIP.

Response: We have the authority to promulgate a FIP concurrently with a disapproval action. As has been noted in past FIP promulgation actions, if EPA ''finds that a State has failed to make a required submission * * * or * * * disapproves a [SIP] in whole or in part,'' CAA Section 110(c)(1) establishes a two-year period within which we must promulgate a FIP, and provides no further constraints on timing. See, e.g., 76 FR 25178, at 25202. North Dakota failed to submit its RH SIP to us by December 2007, as required by Congress. Two years later, North Dakota had still not submitted its RH SIP. When we made a finding in 2009 that North Dakota had failed to submit its RH SIP, (see 74 FR 2392), that created an obligation for us to promulgate a FIP by January 2011. We are promulgating the FIP concurrently with our disapproval action because of the applicable statutory deadlines requiring us at this time to promulgate regional haze BART determinations and reasonable progress (RP) determinations to the extent North Dakota's BART and RP determinations are not approvable.

We also note that North Dakota made this same argument to the U.S. District Court for the District of Colorado—in a motion opposing entry of a consent decree containing deadlines for EPA to promulgate a FIP for regional haze for North Dakota and in comments on the proposed consent decree. The court rejected North Dakota's argument. First, the court noted that we had proposed action on North Dakota's SIP in our September 1, 2011 proposal and we were, therefore, not proposing to take final action on the regional haze FIP before making a determination on North Dakota's SIP revision. Second, the court indicated that we would be authorized to promulgate the regional haze FIP even without taking final action on North Dakota's SIP. As we had argued, the court found that the duty to promulgate a FIP (triggered by our 2009 finding of failure to submit an RH SIP) remains ''*unless* the State corrects the deficiency, *and* the Administrator approves the plan or plan revision, *before* the Administrator promulgates such [FIP].'' Order Entering Consent Decree, *WildEarth Guardians* v. *Jackson,* Civil Action No. 11–cv–00001–CMA–MEH, USDC Colorado, p. 17, citing CAA section 110(c) (emphasis and brackets added by the court).

Comment: Commenter stated that EPA must review the ''blanket five year compliance date'' to install and operate BART to ensure that it is as expeditious as practicable, as required by the CAA.

Response: We have reviewed the compliance dates for meeting BART limits that are contained in the portions of the SIP we are approving and in the FIP we are promulgating. These dates are reasonable given the magnitude of the retrofits being undertaken. We note that the State permits that we are approving as part of this action provide for compliance as expeditiously as practicable, but in no event later than five years.

C. Comments on Modeling

Comment: Several commenters questioned aspects of the single-source CALPUFF modeling that North Dakota included in the SIP and which EPA relied upon in our evaluation of visibility impacts. Among other things, commenters questioned (1) Whether CALPUFF overestimates nitrate formation, (2) whether newer versions of CALPUFF would give more accurate results, (3) the method for establishing natural visibility background, (4) how to establish ammonia background concentrations, and (5) the method for interpreting model results as they relate to visibility improvement. The commenters submitted revised single-source CALPUFF modeling results to address what they believed to be deficiencies in the single-source CALPUFF modeling that North Dakota included in the SIP.

Response: While each of these comments is addressed separately in detailed responses below, a general response is warranted. We note that many of these comments were submitted by Minnkota and Basin Electric and were directed specifically to EPA's proposal regarding SCR at MRYS 1 and 2 and LOS 2. As we have explained, such comments are not relevant to our final action. Nonetheless, we are responding to most of the comments in the event that they could be interpreted as having broader application to the assessment of visibility improvement from potential control options.

The second point we note is that the source owners are essentially questioning modeling that they conducted and submitted to the State as part of their BART evaluations, and that the State specifically called for and included in the SIP. The State established procedures for single-source BART modeling used to support its SIP in the ''Protocol for BART-Related Visibility Impairment Modeling Analyses in North Dakota'' (the BART modeling protocol). North Dakota RH SIP, Appendix A.1. North Dakota intended for the protocol to apply to ''visibility modeling for both identification of sources 'subject to BART' (*i.e.,* BART screening), and for determining the degree of visibility improvement related to the selection of BART controls.'' North Dakota RH SIP, Appendix A.1, p. 1. In fact, North

Dakota specifically stated: ''[A]ll BART-related single-source modeling for sources in North Dakota must follow the protocol outlined here. Because of this requirement, the NDDH will not expect companies which operate BART-eligible sources to provide individual protocols for their BART-related modeling.'' *Id.,* p. 3. North Dakota's protocol conforms to the BART Guidelines.[5] It also follows recommendations for modeling long range transport contained in 40 CFR part 51, appendix W (''The Guideline on Air Quality Models'') and EPA's Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts. Furthermore, as discussed in Section 3 of the SIP, *Plan Development and Consultation,* the protocol was developed in consultation with EPA and FLM meteorologists. Adherence to the protocol ensures that a consistent comparison of visibility improvement can be made for potential control technologies across different individual units and different pollutants.

As the State's single-source BART modeling followed established guidance and was developed in consultation with FLMs and EPA, we find that it provides a reasonable basis for making control technology determinations. We do not agree with the sources' attempt to deviate from the established protocol for assessing visibility impacts. This is because it would lead to a less consistent and rational assessment of potential control options. Nonetheless, we have considered the revised single-source modeling and the comments submitted by the commenters in making our final action. We conclude that nothing contained in their modeling analysis undermines the single-source modeling that North Dakota included in the SIP.

Comment: Two commenters stated that the receptor-specific approach to identifying the 98th percentile result in CALPUFF is more technically correct than the default day-specific approach. The commenters also supplied revised CALPUFF modeling based on the receptor-specific approach. These modeling results suggest that controls would achieve less visibility improvement than indicated by North Dakota's single-source BART modeling.

[5] There is one aspect of the protocol that does not conform to the BART guidelines—North Dakota's inclusion of the 90th percentile modeling results in addition to the 98th percentile. The use of the 90th percentile modeling results is not consistent with the CAA. 70 FR 39121. We provide more detail about the deficiency in the use of the 90th percentile value in subsequent responses.

Response: We do not agree that the receptor-specific approach is more technically correct; it is not part of the standard CALPUFF model and merely serves to decrease the conservatism of the model predictions through the creation of 98th percentile values that are specific to specific receptor locations within a Class I area. The standard CALPUFF approach considers the daily impacts within a Class I area at all receptor points; *i.e.,* the model predicts the highest daily value for each day of the year from all receptors within a Class I area. The 98th percentile reflects the eighth highest of these daily values.

In its BART modeling protocol, North Dakota stated that ''the context of the 98th percentile 24-hour delta-deciview prediction is with respect to days of the year, and is not receptor specific.'' RH SIP, Appendix A.1, Section 4.0, p. 50. In addition, in establishing the 98th percentile as a reasonable contribution threshold in the BART Guidelines, EPA intended that the day-specific, or ''day-by-day,'' approach be used. 70 FR 39121. This was the approach EPA considered appropriate to account for the assumptions and uncertainties in CALPUFF; the receptor-specific approach goes beyond what EPA considers appropriate to address these assumptions and uncertainties and would undermine the goal of achieving natural visibility conditions. Therefore, we do not consider the revised CALPUFF modeling results based on the flawed receptor-specific approach that were submitted by the commenters to be useful in assessing visibility impacts..

Comment: Several of the commenters argue that it is inappropriate to evaluate visibility impacts in comparison to natural background visibility conditions. Instead, the commenters propose to evaluate visibility impacts in comparison to current, degraded visibility conditions. The commenters further argue that EPA's use of natural conditions is inconsistent with section 169A of the CAA and that EPA should amend its BART Guidelines to use current, degraded visibility conditions.

Response: We disagree. EPA's approach is consistent with Congress's intent in passing section 169A, and the proposal to use degraded visibility conditions is inconsistent with section 169A. Visibility impacts must always be evaluated relative to some reference visibility condition, and a given reduction in ambient $PM_{2.5}$ will result in smaller relative improvement in visibility when compared to polluted conditions versus clean conditions. Because current degraded visibility conditions are considerably worse than natural background visibility, comparison of a BART source's impact relative to current degraded visibility conditions would result in a smaller relative benefit than would a comparison relative to natural background visibility. EPA previously considered and responded to the same comment in 40 CFR part 51, appendix Y, promulgated at 70 FR 39104, July 6, 2005. After receiving this comment on the BART Guidelines, EPA considered the approach of assessing a BART-eligible source's impacts on visibility by using current or near-term future conditions, and EPA determined that BART visibility impacts should be evaluated in comparison to natural background visibility. In the final rulemaking EPA wrote (70 FR 39124):

> ''Using existing conditions as the baseline for single source visibility impact determinations would create the following paradox: the dirtier the existing air, the less likely it would be that any control is required. This is true because of the nonlinear nature of visibility impairment. In other words, as a Class I area becomes more polluted, any individual source's contribution to changes in impairment becomes geometrically less. Therefore the more polluted the Class I area would become, the less control would seem to be needed from an individual source. We agree that this kind of calculation would essentially raise the ''cause or contribute'' applicability threshold to a level that would never allow enough emission control to significantly improve visibility. Such a reading would render the visibility provisions meaningless, as EPA and the States would be prevented from assuring ''reasonable progress'' and fulfilling the statutorily-defined goals of the visibility program. Conversely, measuring improvement against clean conditions would ensure reasonable progress toward those clean conditions.''

See, also, Memorandum from Gail Tonnesen, Regional Modeler, to North Dakota Regional Haze File, dated September 1, 2011, regarding ''Modeling Single Source Visibility Impacts.'' This memorandum is included in Appendix B of the Technical Support Document (TSD) for this action.

Comment: Two commenters performed new CALPUFF simulations using EPA's current regulatory version 5.881 and submitted these modeling results to EPA during the comment period. The commenters found lower visibility impacts using CALPUFF version 5.8 than did the State with an earlier CALPUFF version 5.711a.

Response: For these new model results, the commenters did not submit a modeling protocol for EPA review and did not provide a complete copy of the CALPUFF input and output files. As a result, EPA was not able to fully review the data sets used in this modeling.

Moreover, while EPA did approve the use of the Rapid Update Cycle meteorology for modeling the Heskett facility, EPA has not approved this alternate modeling protocol for other BART sources in North Dakota and has not reviewed or approved other modifications to the modeling approach that the commenters used in developing new CALPUFF results.

From the information that the commenters provided, EPA determined that the differences in the new CALPUFF version 5.8 modeling results are due in part to a change in the natural background visibility that was used in the modeling analysis. The State's modeling protocol called for use of the 20% best natural visibility days in its BART analysis while the commenters' new CALPUFF version 5.8 analysis used the annual average natural visibility days. If the commenters had adopted the same approach as North Dakota and compared CALPUFF version 5.8 visibility impacts to the 20% best natural visibility days, the results of the new analysis would have been more similar to the original modeling performed by North Dakota.

We do not find that the commenters' new modeling demonstrates that single-source modeling performed according to North Dakota's BART modeling protocol should be disregarded. That modeling was conducted using the latest version of CALPUFF that was available at the time, and we are approving the great majority of North Dakota's BART determinations that relied on results from that modeling. In our FIP, in which we are merely filling gaps in the SIP, we are not required to conduct new modeling using CALPUFF version 5.8 or disregard the results of the modeling conducted using CALPUFF version 5.711a. In fact, we find the better course is to rely on modeling based on the same version of the model that the State employed to ensure we are using a consistent comparison. See, *Mont. Sulphur & Chem. Co.* v. *United States EPA,* 2012 U.S. App. LEXIS 1056 (9th Cir. Jan. 19, 2012).

Comment: The commenters argue that CALPUFF overstates visibility impact due to the complexity of the chemistry affecting visibility impairment and that EPA acknowledges that ''the simplified chemistry in the [CALPUFF] model tends to magnify the actual visibility effects of [a] source.'' 70 FR 39121. The commenters further state that when EPA adopted the BART Guidelines, EPA concurred with ''the concerns of commenters that the chemistry modules of the CALPUFF model are less advanced than some of the more recent atmospheric chemistry simulations.'' Id. at 39123. The commenters also assert that several published papers or presentations show that CALPUFF over predicts nitrate by a factor of 2 to 4 in the winter.

Response: For the reasons already stated, EPA's reliance on the CALPUFF modeling results that the State included in the SIP is reasonable. In addition, EPA has acknowledged that the simplified chemistry used in the CALPUFF model creates uncertainty in the accuracy of the model for predicting visibility impacts for pollutants such as NO_X that are converted from the gas phase to aerosol through complex photochemical reactions. However, it is uncertain whether the simplified chemistry will always overpredict visibility impacts. For example, Anderson *et al.* (2010) [6] found that the CALPUFF model frequently predicted lower nitrate concentrations compared to the Comprehensive Air Quality Model (CAMx) photochemical grid model, which has a much more rigorous treatment of photochemical reactions. EPA recognized the uncertainty in the CALPUFF modeling results, and EPA made the decision in the final BART guidelines that the model should be used to estimate the 98th percentile visibility impairment rather than the highest daily impact value as proposed. 70 FR 39121. We made the decision to consider the less conservative 98th percentile (*i.e.,* the eighth highest 24-hour deciview impact in a year rather than the highest) primarily because the chemistry modules in the CALPUFF model are simplified and might in some cases predict a maximum 24-hour impact that is an ''outlier.'' Id. If recent updates to CALPUFF cause the model to predict lower visibility impacts, the use of the updated model might also require EPA to reconsider the choice of the less conservative 98th percentile for evaluating visibility impacts. In any event, our reliance on CALPUFF modeling is reasonable for the reasons discussed above.

Comment: Several commenters suggested that the State has unlimited discretion to consider visibility or cost or other factors in any way it wishes, even in ways that are inaccurate or inconsistent with the purpose of the CAA.

Response: We disagree. We have already largely addressed the assertions in this comment in our responses to comments on our legal authority. Furthermore, as a hypothetical example, EPA would not defer to a state determination that the remaining useful life of a source is one year if relevant evidence indicates the remaining useful life is 20 years. Limits on state discretion are inherent in the CAA and our regulations; otherwise, states would be free to reach decisions that are arbitrary and capricious or inconsistent with the purpose behind the CAA and EPA's regulations. As we have stated, North Dakota's cumulative modeling approach thwarts the goal stated by Congress in CAA section 169A and underlying the RHR.

Comment: One commenter claimed that pictorial examples demonstrate that the visibility benefits which EPA claims can be achieved with NO_X control technologies are not perceptible. The commenter compares archived pictures copied from the National Park Service (NPS) Web site, along with the monitored haze index, for days having varying levels of visibility impairment. For example, the commenter compares two pictures from different days for which the haze index changes by 1.26 deciviews and concludes that ''no perceptible difference can be seen * * *''

Response: We do not expect that a 1.0 deciview change in visibility, which is considered a ''small but noticeable change in haziness under most circumstances'' (64 FR 35725), could be easily perceived in a small picture on the printed page. Moreover, North Dakota did not provide visibility improvement relative to a pre-control baseline as recommended by the BART guideline (70 FR 39170), so many of the estimates of visibility improvement contained in the SIP are misleadingly low. Regardless, the BART Guidelines establish that predicted visibility improvement below perceptibility thresholds does not provide a basis to automatically eliminate a control option: ''Even though the visibility improvement from an individual source may not be perceptible, it should still be considered in setting BART because the contribution to haze may be significant relative to other source contributions in the Class I area. Thus, we disagree that the degree of improvement should be contingent upon perceptibility. Failing to consider less-than-perceptible contributions to visibility impairment would ignore the CAA's intent to have BART requirements apply to sources that contribute to, as well as cause, such impairment.'' 70 FR 39129. The

[6] Anderson, B., K. Baker, R. Morris, C. Emery, A. Hawkins, E. Snyder ''Proof-of-Concept Evaluation of Use of Photochemical Grid Model Source Apportionment Techniques for Prevention of Significant Deterioration of Air Quality Analysis Requirements'' Community Modeling and Analysis System (CMAS) 2010 Annual Conference, October 11–15, 2010, Research Triangle Park, NC. *http://www.cmascenter.org/conference/2010/agenda.cfm.*

importance of visibility impacts below the thresholds of perceptibility cannot be ignored given that regional haze (as contrasted with reasonably attributable visibility impairment) is a problem that is produced by a multitude of sources and activities which are located across a broad geographic area.

Comment: Commenter states that it takes a larger change in pollutant emissions to cause a perceptible visibility change when the change is measured against current degraded visibility conditions rather than ''natural'' visibility conditions. Visibility benefits estimated relative to natural background will ''tend to be five to seven times larger'' than the benefits estimated relative to current degraded visibility. Therefore, using the natural background conditions overstates the visibility improvement that would be achieved by controls at the time of installation.

Response: As noted in our responses to other similar comments, it is precisely this effect that leads us to conclude that the only approach consistent with the statutory and regulatory goals when considering visibility improvement associated with potential single-source control options is to use natural background values in the model. The goal is reasonable progress, not stasis.

Comment: One commenter argues that the natural background specified by EPA significantly exaggerates how clean natural conditions actually are. The commenter provides a report on natural visibility background which argues that EPA's estimate of natural conditions significantly understates the extent of natural particulate emissions, including dust and wildfires, which are uncontrollable.

Response: EPA recognized that variability in natural sources of visibility impairment cause variability in natural haze levels as described in its ''Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule.'' [7] The preamble to the BART guidelines (70 FR 39124) describes an approach used to measure progress toward natural visibility in Mandatory Class I Areas that includes a URP toward natural conditions for the 20 percent worst days and no degradation of visibility on the 20 percent best days. The use of the 20 percent worst natural conditions days in the calculation of the URP takes into consideration visibility impairment from wild fires, windblown dust and other natural sources of haze. The ''Guidance for Estimating Natural Visibility'' also discusses the use of the 20 percent best and worst estimates of natural visibility, provides for revisions to these estimates as better data becomes available,[8] and discusses possible approaches for refining natural conditions estimates (pages 3–1 to 3–4).

For the evaluation of visibility impacts for BART sources, EPA recommended the use of the natural visibility baseline for the 20% best days for comparison to the ''cause or contribute'' applicability thresholds. This estimated baseline is reasonably conservative and consistent with the goal of attaining natural visibility conditions. While EPA recognizes that there are natural sources of haze, the use of the 20% worst natural visibility days is inappropriate for the ''cause or contribute'' applicability thresholds. For example, if BART source visibility impacts were evaluated in comparison to days with very poor natural visibility resulting from nearby wild fires or dust storms, the BART source impacts would be significantly reduced relative to these poor natural visibility conditions and would not be protective of natural visibility on the best 20% days.

The commenter and the cited report on natural visibility by Robert Paine appear to suggest that EPA requires the use of the best 20% visibility days for all aspects of visibility analysis. This does not accurately characterize EPA's recommended use of the 20% worst natural visibility days for URP calculations and the 20% best natural visibility days for the ''cause or contribute'' applicability thresholds. For example, natural visibility conditions at the Badlands National Park for the best 20%, annual average, and worst 20% natural visibility days are 2.9, 5.0, and 8.1 deciviews, respectively.[9] By contrast, current visibility conditions at the Badlands National Park for the best 20%, annual average, and worst 20% days are 6.9, 11.6 and 17.1 deciviews, respectively. The URP calculation uses the worst 20% natural visibility value of 8.1 deciviews, and this value adequately represents the impacts of natural sources of visibility impairment. Finally, as part of the settlement of a case brought by the Utility Air Regulatory Group challenging the BART Guidelines,[10] EPA agreed to issue guidance clarifying that states may use either the 20% best or the annual average in estimating natural visibility in the evaluation of a BART source's impacts. This guidance makes clear that states have the flexibility to use either approach in estimating natural background conditions. The State was not required to use the annual average and did not. Similarly, in issuing a FIP, we are not required to use the annual average either.

The commenter cited modeling studies that purportedly show that the model-predicted natural haze levels are substantially larger than the natural haze levels used by EPA. In fact, the results of those studies compare well with EPA's natural background levels. The modeling study by Tonnesen *et al.*[11] predicted annual average natural $PM_{2.5}$ concentrations in North Dakota in the range of 1.9 to 2.5 ug/m^3, while the Koo *et al.* study [12] predicted annual average natural $PM_{2.5}$ concentrations in the range of 2.5 to 3.1 ug/m^3 in North Dakota. These model estimates are consistent with EPA's estimated 2.6 ug/m^3 annual average $PM_{2.5}$ concentration at Class I Areas in western North Dakota.

Comment: One commenter felt that EPA's decision appears to be driven by its desired outcome—more emission reductions—and not by any legal basis for disapproving the North Dakota SIP.

Response: Our decision is driven by our interpretations of the CAA and our

[7] Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule, U.S. Environmental Protection Agency, September 2003. *http://www.epa.gov/ttncaaa1/t1/memoranda/rh_envcurhr_gd.pdf,* page 1–1: ''Natural visibility conditions represent the long-term degree of visibility that is estimated to exist in a given mandatory Federal Class I area in the absence of human-caused impairment. It is recognized that natural visibility conditions are not constant, but rather they vary with changing natural processes (e.g., windblown dust, fire, volcanic activity, biogenic emissions). Specific natural events can lead to high short-term concentrations of particulate matter and its precursors. However, for the purpose of this guidance and implementation of the regional haze program, natural visibility conditions represents a long-term average condition analogous to the 5-year average best- and worst-day conditions that are tracked under the regional haze program.''

[8] Guidance for Estimating Natural Visibility Conditions * * *: ''The preamble further stated that 'with each subsequent SIP revision, the estimates of natural conditions for each mandatory Federal Class I area may be reviewed and revised as appropriate as the technical basis for estimates of natural conditions improve.' ''

[9] Natural Haze Levels II Committee Report.

[10] Settlement Agreement in *Utility Air Regulatory Group* v. *EPA,* Case No. 06–1056 in the United States Court of Appeals for the District of Columbia Circuit, April 19, 2006.

[11] Tonnesen, G., Omary, M., Wang, Z., Jung, C.J., Morris, R., Mansell, G., Jia, Y., Wang, B., Adelman, Z., 2006. Report for the Western Regional Air Partnership Regional Modeling Center. University of California Riverside, Riverside, California, November. *http://pah.cert.ucr.edu/aqm/308/reports/final/2006/WRAP-RMC_2006_report_FINAL.pdf.*

[12] Koo, B.; Chien, C.J.; Tonnesen, G.; Morris, R.; Johnson, J.; Sakulyanontvittaya, T.; Piyachaturawat, P.; Yarwood, G.; Natural emissions for regional modeling of background ozone and particulate matter and impacts on emissions control strategies, *Atmos. Env.,* 44:19, 2372–2382.

regulations. We note that we are approving the vast majority of North Dakota's decisions.

Comment: One commenter stated that EPA should not ignore two of the three years of CALPUFF modeling results in our review of modeling results presented by North Dakota. The commenter suggested that this is inconsistent with EPA's typical practice of using long-term averages when addressing regional haze as is necessary to prevent undue influence from short-term events or unusual meteorological events.

Response: In our review of the single-source CALPUFF modeling results presented by North Dakota, we cited the change in the maximum 98th percentile impact over the modeled three year meteorological period (2001–2003). As the 98th percentile value is intended to reflect the 8th high value in any year, it already eliminates 7 days per year from consideration in order to account for short-term events, unusual meteorological conditions, and any over-prediction bias in the model. Therefore, the modeling results which we cited in our proposal are designed to exclude influence from unusual events or meteorological conditions and are sufficient to address the commenter's concerns. We also note that our approach is consistent with the method used by North Dakota in identifying subject-to-BART sources where a source is considered to contribute to impairment if it ''exceeds the threshold when the ninety-eighth percentile of the modeling results based on any one year of the three years of meteorological data modeled exceeds five-tenths deciviews.'' North Dakota RH SIP, p. 63. We find that this is a reasonable method for the purposes of evaluating visibility improvements associated with potential control options.

Comment: Commenters stated that EPA should not ignore the 90th percentile impact in our review of the CALPUFF visibility results presented by North Dakota.

Response: In the BART Guidelines, EPA addressed the appropriate interpretation of CALPUFF modeling results within the context of subject-to-BART modeling. We rejected the use of the 90th percentile because it would be inconsistent with the Act: ''The use of the 90th percentile value would effectively allow visibility effects that are predicted to occur at the level of the threshold (or higher) on 36 or 37 days a year. We do not believe that such an approach would be consistent with the language of the statute.'' 70 FR 39121. On the same page, EPA explained that the 98th percentile was sufficient to account for any overestimation of visibility benefits by CALPUFF.

While the BART Guidelines do allow states to consider the ''frequency, duration, and intensity'' of a source's visibility impact when making control determinations, the use of the 90th percentile would over-compensate for any uncertainties in CALPUFF and would underestimate visibility benefits from potential control options and unduly bias the resulting analysis. When the 90th percentile is used to assess predicted visibility improvement from a potential control option, the 37th or 38th highest predicted improvement value from 365 predicted daily values is selected; higher predicted improvement values on 36 or 37 days a year are ignored. This is not rational. In the actual BART determination, a state could so dilute the predicted visibility improvement, one of the very goals of CAA section 169A, as to nullify its initial determination using the 98th percentile that the source is subject to BART. Accordingly, the BART guidelines specifically mention the use of the 98th percentile as an option to compare pre- and post-control modeling runs; use of the 90th percentile is not mentioned. 70 FR 39170. Moreover, the FLMs have affirmed the use of the 98th percentile in their most recent guidance for evaluating visibility impacts at Class I areas. FLAG 2010, p. 23.[13]

Comment: One commenter stated that CALPUFF overpredicts visibility impacts associated with nitrates due to incorrect (too high) ammonia background. The commenter stated that monitored background ammonia data from Wyoming shows lower concentrations. The commenter also cites a study by Colorado Department of Public Health and Environment (CDPHE) related to the sensitivity of the CALPUFF model to ammonia background concentrations.

Response: The monthly ammonia background concentrations used by North Dakota were derived from data collected at the State's only ammonia monitor located near Beulah and range from a low of 0.98 ppb to a high of 2.29 ppb. (BART modeling protocol, Table 3–4). Due to their proximity to the North Dakota sources and Class I areas, the Beulah ammonia background concentrations are clearly more representative than those which the commenter cites for Wyoming that ''were on the order of only 0.1 ppb.'' We also note that, in its revised modeling, the commenter did not use alternate ammonia background concentrations that would differ from those used by North Dakota.

With regard to the ammonia background sensitivity study conducted by CDPHE,[14] the commenter has not shown that the study is relevant to North Dakota. CDPHE found that visibility impacts are ''not very sensitive to the background ammonia concentration across the range from 1.0 ppb to 100.0 ppb.'' *Id* at 24. Therefore, we disagree with the commenter's assertion that CALPUFF overpredicts visibility impacts associated with nitrates due to incorrect (too high) ammonia background.

Comment: One commenter cited a paper by Terhorst and Berkman (2010) regarding the impact of the Mohave Generating Station (MGS), also known as the Mohave Power Project (MPP), on visibility in the Grand Canyon. The MGS was located about 115 km from the Grand Canyon National Park (''GCNP'') and was shut down in 2005. Based on measured values, and after controlling for the prevailing environmental and anthropogenic factors in the region, the authors found virtually no evidence that the MGS closure improved visibility in the GCNP or that the plant's operation degraded it. This was in contrast to air quality transport models, including CALPUFF, that predicted visibility would have improved by 5% or more after closure.

Response: For the reasons stated in our responses to comments earlier in this section, our reliance on the CALPUFF modeling the State submitted in the SIP is reasonable. In addition, the study by Terhorst and Berkman does not convince us that use of CALPUFF modeling is inappropriate for this action or that the CALPUFF modeling results should be ignored. A model such as CALPUFF essentially holds constant a number of factors in order to isolate the impacts of a single source. As acknowledged by the study's authors, it is extremely difficult in observational analyses to sufficiently control for all factors, including emissions from other sources, to be able to isolate the impacts of closure of a facility, especially one located over 100 km from the Class I area at issue. In fact, the paper notes that coarse soil mass impacts are an omitted variable in the analytical analysis and that changes in those

[13] The complete reference is: U.S. Forest Service, National Park Service, and U.S. Fish and Wildlife Service. 2010. Federal land managers' air quality related values work group (FLAG): phase I report—revised (2010). Natural Resource Report NPS/NRPC/NRR—2010/232. National Park Service, Denver, Colorado.

[14] CALMET/CALPUFF BART Protocol for Class I Federal Area Individual Source Attribution Visibility Impairment Modeling Analysis, Colorado Department of Public Health and Environment, October 24, 2005.

emissions may have counteracted the visibility improvements expected from the source shutdown.

Comment: One commenter noted that the BART Guidelines allows states to consider if the time of year is important (e.g., high impacts are occurring during tourist season)''. 70 FR 39130. The commenter provided information that shows that 85% of all visits to Theodore Roosevelt National Park (TRNP) occur during the period from mid-May to mid-October but that nitrate concentrations measured at TRNP and Lostwood Wilderness Area (LWA) during this period are extremely low.

Response: We agree that our BART guidelines acknowledge that states may consider the timing of impacts in addition to other factors related to visibility impairment. However, states are not required to do so, and to our knowledge, this was not part of North Dakota's analysis. We are not required to substitute a source's desired exercise of discretion for that of the State's. Furthermore, for purposes of our FIP, we stand in the shoes of the State. In that capacity, we are not required to consider the seasonality of impacts, and we have chosen not to. The experience of visitors who come to the Class I areas in North Dakota during periods other than mid-May to mid-October is not discounted.

As a factual matter, the commenter's assertions are misleading. A review of the Interagency Monitoring of Protected Visual Environments (IMPROVE) monitoring data on the WRAP Technical Support System [15] reveals that significant nitrate impacts occur during periods of high visitation at TRNP. For example, the contribution to visibility impairment from nitrates in May and October of 2002 was 26.9% and 37.9%, respectively. There was also relatively high visitation to the Park during these months.[16]

Also, the commenter's reference to 40 CFR 51.301's definition of ''adverse impact on visibility'' is misplaced. This term is defined for purposes of 40 CFR 51.307 only and is not used in 40 CFR 51.308. Section 51.307 applies to new source review only, not to the regional haze program.

Comment: One commenter states that further controlling NO_X emissions from North Dakota sources would not advance the goal of improving visibility. The commenter bases this statement on (1) back trajectory analysis that shows that emissions from North Dakota point sources only impact TRNP and LWA a small part of the time, and (2) a modeling study of large North Dakota point sources of NO_X emissions that followed North Dakota's 2005 EPA-approved protocol and shows that these sources contribute a very small fraction of light extinction attributable to nitrates.

Response: We disagree that controlling large NO_X point sources in North Dakota will not advance the goal of improving visibility.

IMPROVE monitoring data shows that nitrates (from all sources) are among the highest contributors to visibility impairment at TRNP and LWA on the worst 20% visibility days. The contribution to visibility impairment from nitrate at TRNP from 2000–2004 ranged between 13.8% and 24.1%, with nitrate contributing more than any other pollutant in 2001 and 2002. Similarly, the contribution to visibility impairment from nitrate at LWA from 2000–2004 ranged between 19.2% and 31.5%, with nitrate contributing more than any other pollutant in 2004.

In order to help states identify the origins of haze-forming pollutants, such as nitrates, the WRAP conducted source apportionment analyses that identify the contribution from source regions and types to specific Class I areas. These source apportionment methods included CAMx Particle Source Apportionment Technology (PSAT) and the Weighted Emissions Potential (WEP). Both of these analysis tools can be found on the WRAP Technical Support System.[17] As described below, these analyses clearly demonstrate that North Dakota point sources are among the largest contributors to nitrates at TRNP and LWA on the 20% worst visibility days.

PSAT is a tracer analysis approach that utilizes a mass-tracking algorithm in the CAMx air quality model to explicitly track the chemical transformations, transport, and removal of haze-forming pollutants associated with a particular source region, source type, or combination of the two. The WRAP PSAT results demonstrate that in 2002, North Dakota point sources were the third and fifth largest contributors to nitrate on the worst 20% visibility days at TRNP and LWA, respectively (see charts and tables contained in docket).

The WEP analysis relies on an integration of gridded emissions data, back trajectory residence time data, a one-over-distance factor to approximate deposition, and a normalization of the final results. This method does not produce highly accurate results because, unlike the CAMx air quality model and associated PSAT analysis, it does not account for chemistry and removal processes. Nonetheless, it is more informative than the simpler back trajectory analysis submitted by the commenter because WEP incorporates gridded emissions in addition to back trajectory. The WRAP WEP results show that the grid cells in which the North Dakota BART sources are located have among the highest potential to contribute to nitrate on the worst 20% visibility days at TRNP and LWA (see graphics contained in docket).

Based on the WRAP source apportionment analyses, we find that there is ample evidence to conclude that further controlling NO_X emissions from North Dakota point sources would advance the goal of improving visibility.

Comment: One commenter submitted new single-source modeling for the AVS units that are subject to reasonable progress. The new modeling included results based on the current EPA-approved version of CALPUFF and use of annual average natural background conditions.

Response: In our proposal, we noted that North Dakota provided modeling results showing a ''visibility improvement of 0.754 deciviews at Theodore Roosevelt [2002] from the installation of LNB for both units combined.'' 76 FR 58632. The commenter's new modeling for the two units combined shows a visibility improvement of 0.39 deciviews at Theodore Roosevelt (98th percentile, 2002). As we have stated elsewhere in response to comments, EPA has not reviewed or approved the specific modeling methodology used by the commenter for AVS; because the newly submitted modeling uses annual average natural background conditions, it is not consistent with North Dakota's protocol for single-source modeling in the BART context. In our consideration of visibility improvement as an additional factor to the statutory and regulatory reasonable progress factors, we are not convinced that we must disregard North Dakota's visibility improvement value of 0.754 deciviews in favor of the commenter's lower estimate. For reasons already explained, we find it reasonable to continue to consider and rely on single-source CALPUFF modeling that has been conducted in accordance with North Dakota's modeling protocol for BART sources.

However, even if we were required to consider the commenter's new modeling results, they would not cause us to change our opinion about our disapproval of the State's determination

[15] *http://vista.cira.colostate.edu/tss/Results/HazePlanning.aspx.*

[16] *http://www.nature.nps.gov/stats/park.cfm?parkid=467.*

[17] *http://vista.cira.colostate.edu/tss/Results/HazePlanning.aspx.*

that no NO_X controls are needed at AVS 1 and 2 for purposes of reasonable progress or our determination that LNB must be installed for purposes of reasonable progress. The costs for LNB are very reasonable—$586 and $661 per ton for AVS 1 and 2, respectively. This is well below cost effectiveness values the State found reasonable in making some of its BART determinations. Also, the AVS units are not small EGUs. To the contrary, at 435 MW apiece, they are comparable to some of the larger EGUs in the State, and their NO_X emissions are considerably greater than emissions from some other EGUs in North Dakota. North Dakota predicted that LNB at AVS would achieve NO_X reductions of about 3,500 tons per unit per year. These reductions are substantially greater than those that will be achieved at the Stanton Station (maximum reduction of 983 tons per year, based on firing of lignite) and LOS 1 (reduction of 1,246 tons per year reduction), where the State selected SNCR as BART, and significantly greater than the reductions that will be achieved at CCS (reduction of 2,572 tons per year, based on our FIP), the largest EGU in the State. Finally, even the commenter's new modeling predicts combined visibility improvement of 0.39 deciviews for LNB on both units. Even if one were to consider this on a unit-by-unit basis, 0.2 deciviews per unit is significant, and we find that this level of visibility improvement, when considered along with the four statutory factors under reasonable progress, would continue to support our selection of LNB for AVS 1 and 2.

Comment: One commenter stated that: ''EPA has no basis in law for rejecting the cumulative modeling performed by the State for AVS since, as EPA admits, there is no requirement that visibility impacts be addressed under a four-factor analysis for a reasonable progress source. That is, there is no authority that precludes the State from modeling the way it did.'' In addition, EPA ignores the fact that reasonable progress is not the same as BART.

Response: The following language from 40 CFR 51.308(d)(1)(ii) applies because North Dakota established a RPG that provides for a slower rate of progress than would be needed to attain natural conditions by 2064:

> [T]he State must demonstrate, based on the factors in paragraph (d)(1)(i)(A) of this section, that the rate of progress for the implementation plan to attain natural conditions by 2064 is not reasonable; and that the progress goal adopted by the State is reasonable.

The factors in paragraph (d)(1)(i)(A) are ''the costs of compliance,'' ''the time necessary for compliance,'' ''the energy and non-air quality environmental impacts of compliance,'' and ''the remaining useful life of any potentially affected sources.'' ''Visibility improvement'' is not one of the factors listed. EPA is required to determine ''whether the State's goal for visibility improvement provides for reasonable progress towards natural visibility conditions.'' 40 CFR 51.308(d)(1)(iii). In doing so, we must ''evaluate the demonstrations developed by the State'' pursuant to (d)(1)(ii). There is accordingly no explicit requirement for the State to take into account visibility impacts in determining what measures are reasonable. For regional haze, which is caused by emissions from numerous sources located over a wide geographic area, this makes sense. Controls on one specific source may have little measurable impact on visibility, but controls on multiple similar sources would likely have an impact on improving visibility. We note that states are unlikely to reach the national goal without, at some point, focusing on emissions from a range of sources. In these first regional haze SIPs, however, states have focused on those individual sources with the largest potential impacts on visibility.

When a state considers the visibility improvement associated with controlling just one source or a small handful of sources in attempting to demonstrate that its progress goal is reasonable, it is not appropriate for the state to model visibility improvement on a source-by-source basis in a way that is inconsistent with the CAA. As discussed above, given the nature of visibility impairment, a single source's impact on visibility under current, degraded visibility conditions is much less than when compared against a clean background. North Dakota's approach using current degraded background would almost always result in the conclusion that reducing emissions will have little or no impact on visibility.

North Dakota used cumulative modeling, which assumed current degraded background to evaluate and reject single-source control options for reasonable progress for every reasonable progress source in North Dakota. Such an approach to single-source modeling is inconsistent with the CAA. As we explained in the TSD for our proposal, we had previously considered and rejected the use of current degraded background in promulgating the BART Guidelines.[18] The central logic of our interpretation, as expressed in the BART Guidelines, applies with equal force to single-source analysis of potential control options in the reasonable progress context. In the BART Guidelines, we said the following:

> In establishing the goal of natural conditions, Congress made BART applicable to sources which 'may be reasonably anticipated to cause or contribute to any impairment of visibility at any Class I area.' Using existing conditions as the baseline for single source visibility impact determinations would create the following paradox: the dirtier the existing air, the less likely it would be that any control is required. This is true because of the nonlinear nature of visibility impairment. In other words, as a Class I area becomes more polluted, any individual source's contribution to changes in impairment becomes geometrically less. Therefore the more polluted the Class I area would become, the less control would seem to be needed from an individual source. We agree that this kind of calculation would essentially raise the 'cause or contribute' applicability threshold to a level that would never allow enough emission control to significantly improve visibility. Such a reading would render the visibility provisions meaningless, as EPA and the States would be prevented from assuring 'reasonable progress' and fulfilling the statutorily-defined goals of the visibility program. Conversely, measuring improvement against clean conditions would ensure reasonable progress toward those clean conditions.
>
> 70 FR 39124.

In other words, it is our interpretation that North Dakota, if it wished to consider visibility improvement in single-source modeling of potential control options, could only reasonably do so by modeling those controls against natural background conditions. Thus, we reject the commenter's assertion. As we stated in our proposal, the statutory and regulatory goal is reasonable progress toward natural visibility conditions, not to preserve degraded conditions. 76 FR 58629. The State's and commenter's approach resulted in the rejection of very effective and inexpensive controls, and that approach could be used to preclude adoption of controls indefinitely. For the reasons expressed here and in our proposal, that is not reasonable.

Comment: Two commenters stated that EPA should consider the dollars per deciview ($/deciview) as a measure when making either BART or reasonable progress determinations. Both commenters suggested that EPA relied too heavily on cost effectiveness in evaluating control options. And both commenters claimed that EPA has

[18] Memorandum from Gail Tonnesen, Regional Modeler, to North Dakota Regional Haze File, dated September 1, 2011, regarding ''Modeling Single Source Visibility Impacts.'' This memorandum is included in Appendix B of the TSD for this action.

endorsed the dollar per deciview approach, citing relevant BART and reasonable progress guidance.

Response: For BART, the BART Guidelines require that cost effectiveness be calculated in terms of annualized dollars per ton of pollutant removed, or $/ton. 70 FR 739167. The commenters are correct in that the BART Guidelines list the $/deciview ratio as an additional cost effectiveness metric that can be employed along with $/ton for use in a BART evaluation. However, the use of this metric further implies that additional thresholds or notions of acceptability, separate from the $/ton metric, would need to be developed for BART determinations. We have not used this metric for BART purposes because (1) It is unnecessary in judging the cost effectiveness of BART, (2) it complicates the BART analysis, and (3) it is difficult to judge. In particular, the $/deciview metric has not been widely used and is not well-understood as a comparative tool. In our experience, $/deciview values tend to be very large because the metric is based on impacts at one Class I area on one day and does not take into account the number of affected Class I areas or the number of days of improvement that result from controlling emissions. In addition, the use of the $/deciview suggests a level of precision in the CALPUFF model that may not be warranted. As a result, the $/deciview can be misleading. We conclude that it is sufficient to analyze the cost effectiveness of potential BART controls using $/ton, in conjunction with an assessment of the modeled visibility benefits of the BART control. We also note that North Dakota did not rely on the $/deciview metric in its evaluation of BART controls.

Within the context of reasonable progress, the *Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program,* page 5–2, states that ''[y]ou should evaluate both average and incremental costs.'' This is consistent with the approach under BART. As commenters note, the guidance then states that ''simple cost effectiveness estimates based on a dollar-per-ton calculation may not be as meaningful as a dollar-per-deciview calculation, especially if the strategies reduce different groups of pollutants.'' However, the guidance makes this statement on the basis that ''different pollutants differently impact visibility impairment.'' That is, for example, a one ton reduction in SO_2 would have a greater visibility benefit than a one ton reduction of coarse mass. As only SO_2 and NO_X controls were evaluated for the reasonable progress point sources, and these pollutants have similar impacts on visibility (per the IMPROVE equation),[19] the use of the $/deciview is not particularly relevant or informative. In addition, we did not use the $/deciview metric for our evaluation of RP controls for largely the same reasons as stated above for BART controls. As we noted in our proposal, ''it is important to recognize that dollars per deciview values will always be significantly higher, often by several orders of magnitude, than the more commonly used and understood dollars per ton values.'' 76 FR 58630. North Dakota's use of current degraded background in its modeling for potential single-source control options had the effect of greatly increasing the disparity between $/deciview and $/ton values because the modeling significantly underestimated the benefits of controls.

Comment: Commenters performed CALPUFF simulations using a revised CALPUFF version 6.4 that includes updates to the chemical and particle transformations and submitted these results to EPA during the comment period.

Response: We have already explained why we may reasonably rely on the modeling performed in accordance with the State's BART modeling protocol. We have additional reasons for disagreeing that the newer CALPUFF version 6.4 results should be used in this action to determine potential visibility impacts. The newer version of CALPUFF has not received the level of review required for use in regulatory actions subject to EPA approval and consideration in a BART decision making process. Based on our review of the available evidence, we do not consider CALPUF version 6.4 to have been shown to be sufficiently documented, technically valid, and reliable for use in a BART decision making process. In addition, the available evidence would not support approval of these models for current regulatory use. The newer versions of the model introduce additional chemical mechanisms that have not gone through the public review process required for approval by the Agency.

Comment: North Dakota's proposed RH SIP emission reductions are sufficient to meet the CAA's visibility objectives relative to the 2018 milestone. North Dakota's BART emission reductions properly and effectively reduce statewide haze production by more than the 23.3% fraction of the 60-year RHR timeline (by 2018). EPA improperly asserts that North Dakota cannot meet the 2018 URP. In fact, the infrequency of the winds blowing the major emission source plumes toward the Class I areas and the zero progress toward controlling Canadian and uncontrollable emissions (such as wildfires and windblown dust) are the cause of the inability for North Dakota to meet the 2018 milestone goal, not in-state source emissions. EPA should not penalize North Dakota and reject its RH SIP because North Dakota cannot control impacts from sources beyond its control. In fact, the RHR and the UARG settlement with EPA in 2006 state that, ''EPA does not expect States to restrict emissions from domestic sources to offset the impacts of international transport of pollution.''

Response: Contrary to the commenter's assertion, the Class I areas in North Dakota will not meet the URP in 2018, something North Dakota acknowledges. We are not penalizing North Dakota, and we are not seeking controls in North Dakota to offset impacts from outside the State. We explain elsewhere why we are disapproving North Dakota's NO_X BART determination for CCS 1 and 2 and its reasonable progress determination concerning AVS 1 and 2. We are acting to ensure that reasonable BART and reasonable progress controls are put in place. North Dakota may not use out-of-state emissions as a basis to ignore controls on in-state sources where such controls are clearly reasonable. We note that we are approving the majority of North Dakota's BART and reasonable progress determinations and that our FIP is modest in scope.

Comment: One commenter notes that EPA's proposed FIP states that ''Appendix W outlines specific criteria for the use of alternate models and it does not appear that those criteria have been satisfied for the use of North Dakota's hybrid modeling.'' 76 FR 58624 and 58637. The commenter asserts that ''EPA does not, however, identify any criteria North Dakota purportedly did not satisfy.'' The commenter then seeks to supply, in retrospect, evidence that the criteria for alternative models, as specified in Appendix W section 3.2, are in fact met.

Response: As specified in Appendix W, ''[d]etermination of acceptability of a model is a Regional Office responsibility.'' 70 FR 68232. EPA Region 8 has not determined that North Dakota's hybrid modeling (aka ''cumulative modeling using current degraded background'') is acceptable for the purposes of assessing single-source visibility impacts under BART. In June 2007, EPA reviewed the ''Modeling Protocol for Regional Haze Reasonable Progress Goals in North Dakota.'' Our

[19] See Appendix A of our TSD for detailed explanation of the IMPROVE equation.

review of the protocol at that time was within the context of establishing RPGs, and not within the context of assessing single-source impacts under BART. Instead, and as described above, North Dakota prepared a separate modeling protocol for the purposes of BART. We reiterate that, as the State's single-source BART modeling followed established modeling guidance and was developed in consultation with FLMs and EPA, we find that it provides a reasonable basis for making control technology determinations.

Comment: Commenter stated that EPA notes in the FIP that ''North Dakota is the only WRAP State which opted to develop its own reasonable progress modeling methodology.'' Commenter stated that the NDDH modeling approach represents an adjustment, or a refinement (for pollutant transport and dispersion), of the cumulative reasonable progress modeling conducted by WRAP for western states. In particular, the NDDH modeling provides a much better resolution of source to receptor locations. Commenter stated EPA asserts that ''[t]he settings North Dakota used in the CALPUFF model within the hybrid modeling system would not be considered technically sound if contained in a regulatory modeling protocol in future projects.'' However, NDDH's modifications to the model settings allows North Dakota's specific environment to be considered.

Response: North Dakota designed its cumulative modeling system specifically to include transported pollutants, in addition to emissions from individual BART sources. North Dakota then used the model results to evaluate BART source visibility impacts relative to the cumulative impact of all other emissions sources. The State's cumulative approach contradicts the model approach recommended by EPA in the BART Guidelines in which BART source impacts are evaluated relative to natural background visibility. As discussed in the response to comments above, EPA specifically considered and rejected cumulative analyses for BART sources in the BART Guidelines. The effect of North Dakota's cumulative modeling approach is to evaluate BART visibility impacts relative to current degraded visibility conditions, and as described in the BART Guidelines and in response to comments above, this would create the paradox that, the worse the current visibility, the less likely it would be that any control would be required. The commenter also describes the State's approach as similar to the cumulative reasonable progress modeling conducted by WRAP for the western states. WRAP's cumulative reasonable progress modeling was designed to evaluate progress in reducing cumulative visibility impacts from all emissions sources for the worst 20% visibility days. WRAP's cumulative modeling did not evaluate the impacts from individual BART sources, and therefore WRAP also performed single source modeling using the CALPUFF model to evaluate single source BART impacts on the best visibility days. Moreover, WRAP followed the BART Guidelines in comparing those BART visibility impacts to natural visibility conditions on the 20% best days. While it could be reasonable to perform modeling for BART sources using CALPUFF with background concentration data from the Community Multi-Scale Air Quality (CMAQ) model, as North Dakota has done, the BART source visibility impacts must still be evaluated relative to natural background visibility. The State's approach of comparing the BART source impacts to cumulative visibility impacts is essentially the same as comparing those results to current degraded visibility conditions, and, therefore, does not follow the guidelines established by EPA and followed by both WRAP and all other states. As noted in other responses, the reasons for our rejection of North Dakota's modeling approach in the BART context also apply to North Dakota's use of that approach to model the visibility benefits of single-source control options in the reasonable progress context.

Comment: Commenter states that the cumulative approach is exemplified in the refined visibility modeling conducted by WRAP for western states (which EPA has endorsed in Appendix A of the TSD to its FIP proposal).

Response: Our applicable response to a similar comment is provided elsewhere in this section. Such an approach is suitable for determining the cumulative benefit of an overall control strategy vis-à-vis the URP on the 20% worst days. It is not suitable for evaluating the benefits of potential control options at individual sources.

Comment: Commenter stated that EPA suggests that using single source modeling based on natural background conditions is appropriate for assessing visibility improvement from BART controls, because the goal of the regional haze program is to ultimately have natural background visibility conditions. NDDH provides a number of technical weaknesses of single source modeling with natural background. For example, North Dakota asserts the single source modeling overstates perceived visibility changes and ignores the impact of all other sources on background visibility.

Response: We address these assertions in our responses to other comments in this section.

Comment: One commenter stated that it is appropriate to consider both the degree of visibility improvement in a given Class I area as well as the cumulative effects of improving visibility across all of the Class I areas affected. The commenter contends that not considering the cumulative improvement across multiple Class I areas ignores impacts to all but the most impacted Class I area.

Response: In its SIP, North Dakota considered the visibility improvement at both TRNP and LWA. Therefore, the modeling analyses presented by North Dakota did not ignore the visibility improvement that would be achieved at areas other than the most impacted Class I area. In our proposal, for convenience, we generally only cited the visibility improvement at Theodore Roosevelt, the most impacted Class I area in the baseline modeling. However, our evaluation of the visibility benefits was made in consideration of all of the single-source modeling results presented in North Dakota's SIP.

Comment: One commenter stated that they shared our concern that North Dakota did not adequately consider the visibility benefits of the control strategies it evaluated. Specifically, the commenter pointed out that for three EGUs, North Dakota used incorrect techniques to assess (and underestimate) visibility improvements. That is, instead of evaluating a candidate BART strategy by determining the visibility improvement that would result from that particular strategy versus a ''standard'' baseline (e.g., the proposed SO_2 control options), the only analyses of visibility improvements were of the incremental differences between competing BART options.

Response: We agree that the visibility improvement of a control technology should be assessed relative to a pre-control baseline. As we have noted elsewhere in our response to comments, this approach is recommended in the BART Guidelines. 70 FR 39170. However, where North Dakota failed to provide this information, we were able to rely on the incremental visibility improvement over lower control options. Our evaluation of the visibility benefits for the three EGUs in question took into account that the lower visibility improvement presented by North Dakota was simply an artifact of the methodology.

Comment: One commenter stated that North Dakota should have treated TRNP

as single Class I area in their modeling analyses.

Response: We concur that TRNP should have been treated as a single Class I area in the modeling analyses. However, we have no evidence that doing so would have led to control technology determinations different than those made by North Dakota or EPA.

Comment: One commenter suggested that EPA could have addressed modeling issues that it identified in its proposal by conducting its own modeling analyses, as it did regarding BART determinations in other EPA regional offices.

Response: As stated elsewhere in our responses to comments in this section, we find that North Dakota's single-source modeling provides a reasonable basis for making control technology determinations. Therefore, we did not find it necessary to conduct our own modeling analyses.

Comment: From a visibility impairment standpoint, it appears to be more beneficial to reduce NO_X than to reduce SO_2 in North Dakota's cool climate. However, by placing more emphasis upon cost per-ton ($/ton) of pollutants removed than on visibility improvement, the advantages of reducing NO_X versus SO_2 are overlooked if both are measured with the same $/ton yardstick. For this reason, we recommend that the primary emphasis should be placed upon the dollars per deciview of improvement. EPA has stated in its Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (June 1, 2007), ''in assessing additional emissions reduction strategies for source categories or individual, large scale sources, simple cost effectiveness based on a dollar-per-ton calculation may not be as meaningful as a dollar per deciview calculation.'' The same logic applies to BART. Nevertheless, the commenter notes that both North Dakota and EPA have based their BART determinations on cost-per-ton of pollutant removed, and the commenter included information to show that the EPA BART proposals are internally consistent and reasonable.

Response: As noted elsewhere, evidence we have reviewed suggests that the relative benefits are similar. In any event, we have not ignored visibility benefits in our assessments. It is not necessary to use dollars per deciview to reasonably consider the regulatory factors and arrive at reasonable control determinations. As we have explained in responses to other comments in this section, there can be significant issues with the use of dollars per deciview values.

Comment: One commenter suggested that the modeling issues raised by EPA, including the use of a degraded background, should be addressed as part of North Dakota's 2013 ''mid-course correction'' and that more emphasis should be placed upon the cumulative visibility benefits that could be derived from the BART program.

Response: The requirements for periodic reports describing progress towards the RPGs are contained in the RHR (40 CFR 51.308(g)). The RHR does not explicitly require that updated visibility modeling be included as an element of the periodic progress report. Nonetheless, to the extent that North Dakota chooses to submit updated modeling to meet other periodic progress reporting requirements, we will address it at that time.

D. Comments on Costs

1. General

Comment: Commenter stated that EPA cannot replace the State's site-specific cost estimates solely for the purpose of ensuring consistency across states. EPA also cannot reject cost items because EPA deems them atypical. Doing so undermines the statute, which provides that BART is a state determination.

Response: As we explain in our response to a previous comment, we have authority to assess the reasonableness of a state's analysis of costs. We are not relegated to a ministerial role. We have not replaced cost estimates solely for the purpose of ensuring consistency across states. When a source puts forward costs estimates that are atypical, it is reasonable for us to scrutinize such estimates more closely to determine whether they are reasonable or inflated. Also, given that the assessment of costs is necessarily a comparative analysis, it is reasonable to insist that certain standardized and accepted costing practices be followed absent unique circumstances. Thus, our BART guidelines state, ''In order to maintain and improve consistency, cost estimates should be based on the OAQPS Control Cost Manual, where possible.'' 70 FR 39166.

Comment: Commenter stated that EPA misapplies cost effectiveness to measure emissions reductions, because the purpose of BART is visibility improvement. Citing the BART Guidelines, commenter stated that more weight should be placed on the incremental rather than the average cost effectiveness.

Response: In our review and analyses, we have considered cost effectiveness values in conjunction with estimates of visibility improvement. Our analysis methods are consistent with those called for by the BART guidelines. We have considered both average and incremental cost effectiveness. The BART guidelines do not require that greater weight be placed on incremental cost effectiveness and advise the use of caution not to misuse the cost effectiveness values. 70 FR 39167–39168.

Comment: Commenter stated that EPA cannot replace the statutory requirement that states weigh costs of compliance with a requirement that states select BART based on a uniform national cost effectiveness metric. Commenter further stated that EPA essentially elevated cost effectiveness to being a statutory factor for BART determinations in the BART Guidelines, and that this was incorrect based on CAA section 169(A).

Response: For power plants larger than 750 MW, the BART guidelines are mandatory and specify that the Control Cost Manual should be used to estimate costs where possible and that cost effectiveness in $/ton be considered. We note that it is too late to challenge the BART guidelines in this action. That said, the BART Guidelines do not, as the commenter contends, require states to select BART based on a ''uniform national cost effectiveness metric'' without consideration of the other relevant factors.

For BART sources other than power plants larger than 750 MW, North Dakota has specified in its SIP that the BART guidelines must be used as guidance. Furthermore, any analysis of the costs of compliance must be reasonable, and the starting point is an accurate estimate of the costs of potential control options. From there, we must have some means to assess the reasonableness of the costs, and cost effectiveness in $/ton is a widely used and understood metric.

Comment: Commenter stated that, in the preamble to the RHR, EPA established a cost effectiveness value threshold of $1,350/ton for NO_X retrofit control technologies. Another commenter cited appendix Y, alleging that it states that NO_X control costs above $1,500/ton are not cost effective for BART. Commenter stated that EPA is therefore inaccurate in the FIP for citing NO_X control costs over $1,500 per ton as cost effective.

Response: EPA disagrees. While EPA described various dollar-per-ton costs as ''cost-effective'' in various preambles (e.g., 70 FR 39135–39136), EPA did not establish an upper cost effectiveness

threshold for BART determinations. We note that North Dakota and other states have identified NO_X control costs well over $1,500 per ton of emissions reduced as being cost effective, and that the relevance of a particular dollar-per-ton figure for controls will depend on consideration of the remaining statutory factors.

2. Comments Regarding Our Reliance on the EPA Air Pollution Control Cost Manual

Comment: One commenter stated that the Control Cost Manual is in no way binding, and that any deviation from the manual by the State is no cause for SIP disapproval. The commenter also stated that cost analyses must take into consideration source-specific costs.

Response: In today's rule, we are disapproving the BART determination for one source, CCS. We note that the BART guidelines are mandatory for CCS because it is larger than 750 MW. The BART Guidelines state that ''[i]n order to maintain and improve consistency, cost estimates should be based on the OAQPS Control Cost Manual, [now renamed ''EPA Air Pollution Control Cost Manual, Sixth Edition, EPA/452/B–02–001, January 2002] where possible.'' 70 FR at 39166. In addition, the preamble to the BART Guidelines states that ''[w]e believe that the Control Cost Manual provides a good reference tool for cost calculations, but if there are elements or sources that are not addressed by the Control Cost Manual or there are additional cost methods that could be used, we believe that these could serve as useful *supplemental information*.'' 70 FR 39127 (emphasis added). Finally, the BART Guidelines are clear that ''cost analysis should also take into account any site-specific design or other conditions * * * that affect the cost of a particular BART technology option.'' 70 FR 39166. However, documentation of cost estimates is necessary, particularly for items that deviate from the Control Cost Manual: ''You should include documentation for any additional information you used for the cost calculations, including any information supplied by vendors that affects your assumptions regarding purchased equipment costs, equipment life, replacement of major components, and any other element of the calculation that differs from the Control Cost Manual.'' Id. In sum, the BART Guidelines direct states to use the Control Cost Manual where possible, but also allow for the use of supplemental information and site-specific factors, as necessary, as long as the latter information is justified and documented.

The Control Cost Manual contains two types of information: (1) A generic costing methodology, known as the overnight method and (2) study level capital cost estimates for certain general types of pollution control equipment, such as SCR. The overnight method has been used for decades for regulatory control technology cost analyses.[20] While we agree that the strict application of the study level analysis is not required in all cases, we maintain that following the overnight method ensures equitable BART determinations across states and across sources. Cost effectiveness is determined by comparing annual cost per ton of pollutant removed for the source of interest to the range of cost effectiveness values for other similar facilities calculated in the same way. If a given cost effectiveness value falls within the range of costs borne by others, it is per se cost effective unless unusual circumstances exist at the source. 70 FR 39168. Thus, cost effectiveness is a relative determination, based on costs borne by other similar facilities. To compare costs among units, a level playing field must be established by following the same cost rules in each determination.[21] Thus, in evaluating BART cost effectiveness, it is important that a consistent set of rules be used. Otherwise, one runs the risk of comparing two approaches that cannot be validly compared when making the cost effectiveness determination. This concept of comparability is integral to the achievement of the national goal specified in CAA section 169A and its legislative history as discussed elsewhere in our response to comments—visibility impairment and improvement is not merely a state or local concern. It impacts visitors to our national parks and wilderness areas from all across the United States.

The cost estimates supplied by North Dakota were frequently based on cost estimating methods that deviate from the overnight method that is used for regulatory purposes. As described above, these costs are not suitable for the purpose of determining whether the costs of BART controls are reasonable relative to costs incurred at other facilities.

Comment: One commenter stated that EPA ignores the disclaimer in the Control Cost Manual that the manual does not address controls for EGUs. To support this position, the commenter provides the following quote from the Control Cost Manual:

> ''Furthermore, this Manual does not directly address the controls needed to control air pollution at electrical generating units (EGUs) because of the differences in accounting for utility sources. Electrical utilities generally employ the EPRI Technical Assistance Guidance (TAG) as the basis for their cost estimation processes.'' [1]

The commenter also provides footnote 1 to this quote which reads as follows:

> ''This does not mean that this Manual is an inappropriate resource for utilities. In fact, many power plant permit applications use the Manual to develop their costs. However, comparisons between utilities and across the industry generally employ a process called ''levelized costing'' that is different from the methodology used here. (*EPA Air Pollution Cost Control Manual, Sixth Edition* page 1–3)''

Response: We disagree with the commenter's conclusion regarding this quote from the Control Cost Manual. The quote is merely a factual observation; electric utilities, in their planning and cost estimating for their own purposes, use a different accounting method than required by the Control Cost Manual. The footnote clarifies that the Control Cost Manual is appropriate for utilities for regulatory purposes.

The utility industry uses a method known as ''levelized costing'' to conduct its internal comparisons.[22] The utility industry's levelized costing methods differ from the methods specified by the Control Cost Manual. Utilities use ''levelized costing'' to allow them to recover project costs over a period of several years and, as a result, realize a reasonable return on their investment. The Control Cost Manual uses an approach sometimes referred to as ''overnight costing'' that treats the costs

[20] See, for example, the NSR Manual, Appendix B, which lays out the overnight method currently required in the Control Cost Manual.

[21] See discussion of this issue in Letter from John Bunyak and Sandra V. Silva, Fish & Wildlife Service, to Mary Uhl, New Mexico Environmental Department, August 17, 2010, p. 5, footnote 9 (November 7, 2007, statement from EPA Region 8 to the North Dakota Department of Health: ''* * * in order to maintain and improve consistency, cost estimates should be based on the OAQPS Cost Control Manual. Therefore, these analyses should be revised to adhere to the Cost Manual methodology.''), p. 6 (quoting a May 10, 2010 EPA letter to North Dakota Department of Health: ''These accounting items [owner's cost] are unauthorized under the Cost Control Manual, create an unlevel playing field for comparison with other BACT analyses and alone account for an increase in capital costs from the Cost Control Manual by a factor of 1.6.''). See discussion in: Letter from Andrew M. Gaydosh, Assistant Regional Administrator, EPA Region 8, to Terry O'Clair, Director, Division of Air Quality, North Dakota Department of Health, Re: EPA's Comments on the North Dakota Department of Health's April 2010 Draft BACT Determination for NO_X for the Milton R. Young Station, May 10, 2010, pp. 14–16.

[22] As explained in the next response, the Control Cost Manual allows the use of levelized costing, but it is different from the levelized costing that the utility industry prefers.

of a project as if all the materials and labor are paid for within a very short period of time. The Control Cost Manual approach is intended to allow a fair comparison of pollution control costs between similar applications for regulatory purposes.

Estimates prepared using the utility industry's levelized costing are not comparable to estimates prepared using the Control Cost Manual. Estimates using the utility industry's levelized method are generally higher than EPA cost effectiveness estimates since the utility industry's levelized method estimates are stated in future dollars and include costs not included in the EPA method, such as inflation and interest during construction. That is why the BART guidelines specify the use of the Control Cost Manual where possible and why it is reasonable for us to insist that the Control Cost Manual method be used to estimate costs. This is the method that has been used to determine the reasonableness of cost effectiveness values in regulatory settings for many, many years; it ensures the use of a common, well-understood metric. Without a like-to-like comparison, it is impossible to draw rational conclusions about the reasonableness of the costs of compliance for particular control options.

Comment: Commenter stated that EPA's rejection of levelized costs is inconsistent with the Control Cost Manual. Commenter also cites EPA's New Source Review (NSR) Manual to argue that levelized costs are acceptable and should not be disapproved.

Response: The issue here is one of semantics rather than a dispute over levelization. We agree levelization is allowed by the Control Cost Manual, and we levelized costs in preparing cost estimates for our proposal. However, the commenter levelized in nominal dollars, while EPA's consultant levelized in constant dollars consistent with the Control Cost Manual. The constant dollar approach is the correct approach. It levelizes O&M costs excluding inflation.

The Control Cost Manual approach equalizes all future O&M costs into equal annual payments in constant dollars over the life of the system, translated to year zero using the Equivalent Uniform Annual Cash Flow method or EUAC. See also NSR Manual, p. b.4. The dispute arises over the inclusion of inflation. The Control Cost Manual ''recommends making cost comparisons on a current real dollar basis'' * * *.'' ''The constant dollar approach described in the Control Cost Manual annualizes (in constant dollars) the cost of installation, maintenance, and operation of a pollution control system * * *'' ''The estimator can levelize annual O&M costs over the life of the project, consistent with the manual's constant dollar approach * * *'' The commenter asserts that the NSR Manual directs the use of levelized cost in the PSD context, but we note this source also clarifies that the interest rate used to annualize the cost ''does not consider inflation.'' NSR Manual, p. b.11.

Comment: One commenter stated that comparing the State's and EPA's cost methods is essentially comparing apples to oranges. The commenter stated that, because EPA uses a cost method which is uniform and relied upon nationwide, and North Dakota and the utilities' cost method ''markedly deviates from EPA's cost method, reliance on the estimates produced by the State are unreasonable.''

Response: We agree with the commenter that the costs developed by the State are in many cases not directly comparable to those prepared by EPA. In particular, costs developed using the overnight cost method for (environmental) regulatory purposes are not directly comparable to those developed using the utility cost method. Both approaches are correct for their respective purposes, but each must be used within the appropriate context. We also agree that consistency of methods is necessary to ensure that costs are assessed equitably. In our proposal, where we compared our costs with those supplied by North Dakota, we identified where different cost methods and assumptions were used. While we don't always agree with every detail of the State's cost estimates, we explain in other responses the bases for our conclusions that the State's control determinations are reasonable or unreasonable.

Comment: Commenter also listed several reasons why it believes the Control Cost Manual does not provide accurate estimates of current SNCR costs.

Response: Our reliance on the Control Cost Manual is addressed above. As stated, the BART Guidelines direct states to use the Control Cost Manual where possible, but to also allow for supplemental information and take into account site-specific factors as necessary, as long as the latter information is justified and documented. Accordingly, where appropriately justified and documented, we have incorporated site-specific costs into our SNCR cost estimates. We also note that our SNCR cost effectiveness values compare well with the range cited by the vendor community of $1,500 to 2,500 per ton of NO_X removed.[23]

E. Comments on BART Determinations

1. General Comments

Comment: Commenter stated that EPA's proposed incorporation of a ''margin of compliance'' into its BART determinations is contrary to the CAA, and is not supported by EPA's own regulations and guidance. Commenter specifically cited EPA's proposed increase of the MRYS Units 1 and 2 NO_X emission limits from .05 lb/MMBtu to .07 lb/MMBtu, stating that this was a weakening not allowed by the CAA and reliant on factors that were not articulated in the CAA. Commenter used this rationale in stating that EPA must establish BART emission rates of .05 lb/MMBtu for MRYS Units 1 and 2 and LOS Unit 2, and a BART emission rate of .108 lb/MMBtu for CCS Units 1 and 2. Another commenter stated that as a general note, in almost every instance North Dakota, and by extension EPA, has converted the purportedly annual emission rate used in the BART analyses to a 30-day emission limit by increasing it by a seemingly arbitrary percentage increase. This has ranged from a low percentage up to at least 40%. There is no support in the record for these increases, and it is not always clear that the original levels are not feasible as 30 day limits. While the commenter agreed that there can be additional variability in 30-day averages as compared to annual, EPA must adequately support any changes it makes to the emission levels analyzed.

Response: In keeping with the BART Guidelines, we evaluated cost effectiveness on an annual basis. Specifically, we calculated cost effectiveness as the total annualized costs of control divided by annual emissions reductions. When discussing cost effectiveness in our proposal, we gave both the emissions reductions and emission rates (lb/MMBtu) on an annual basis. By contrast, the BART Guidelines indicate that EGU BART emission limits should be specified as 30-day rolling average limits. It is commonly understood that shorter averaging periods result in higher variability in emissions due to load variation, startup, shutdown, and other factors. However, BART emission limits must be met on a continuous basis. Accordingly, we have not generally required 30-day rolling average emission limits equal to the annual emission rates used for calculating cost effectiveness. We find it

[23] Institute of Clean Air Companies, White Paper Selective Non-Catalytic Reduction (SNCR) for Controlling NO_X Emissions, February 2008, p. 4.

is reasonable to allow a margin for compliance for the 30-day rolling average limits. In our experience, 30-day rolling average emission rates are approximately 5–15% higher than the annual emission rate. Therefore, we disagree with the commenter's assertion that North Dakota and EPA arbitrarily adjusted the annual emission rates when setting 30-day rolling average emission limits.

Comment: Commenter stated that EPA is requiring the use of unit-by-unit emission limits, though the State is within its rights to allow plant-wide averaging (citing 70 FR 39172).

Response: We agree with the commenter that unit-by-unit emission limits are not strictly required. However, it is within the discretion of North Dakota to establish unit-by-unit emission limits. Where we are approving North Dakota's BART determinations, we are accepting the basis for emission limits that they selected. In the case of Coal Creek, which is included under our FIP, we have clarified in our final action that Unit 1 and Unit 2 emissions may be averaged provided that the average does not exceed the limit.

2. CCS Units 1 and 2

a. EPA's Use of the Control Cost Manual for CCS

Comment: Commenter (GRE) stated that EPA guidelines as provided to states in identifying regional haze control requirements and as provided in EPA's Control Cost Manual are best suited for evaluating average or typical installations. Commenter stated that because CCS 1 and 2 are uniquely designed and employ DryFining™ technology, any accurate analysis of add-on NO_X controls must be site-specific and not rely on general guidelines which might apply to a normal facility.

Response: As required by North Dakota, GRE provided a BART analysis for CCS to the State in 2007. That analysis included an analysis of potential NO_X controls, including SNCR. For several significant elements of its analysis of SNCR, GRE relied on EPA's Control Cost Manual.[24] This was consistent with EPA's BART Guidelines, which are mandatory for CCS and which provide that cost estimates should be based on the Control Cost Manual where possible. 70 FR 39166. GRE now essentially criticizes its own earlier analysis, claiming that it was done only at a screening level. However, to the extent GRE believed that unique characteristics at CCS required more site-specific information or more in-depth analysis, GRE could have and should have performed that analysis in 2007.

Nonetheless, we have evaluated GRE's new analysis. For reasons we explain below, we have serious concerns about the validity and accuracy of GRE's new analysis and we find it is reasonable for us to continue to rely on cost estimates based on EPA's Control Cost Manual, as described in our proposal. See 76 FR 58620. Every facility has unique elements; however, we do not agree that the elements at CCS are so unique that use of the Control Cost Manual is inappropriate. Also, we note that DryFining™ was not installed until after the baseline period and was installed voluntarily, not to meet any regulatory requirement. We are not required to revisit the baseline controls or reconsider cost estimates based on voluntarily installed controls. On the contrary, there are significant issues with such an approach; it would tend to reward sources that install lesser controls in advance of a BART determination in an effort to avoid more stringent controls.

Comment: Commenter stated that the removal efficiency for CCS 1 would not be 50% as anticipated from the EPA Pollution Control Cost Manual and as used in GRE's original BART analysis, but would rather be 30% and 20% for Units 1 and 2 respectively. The commenter asserted that these emission estimates clearly change the basis for any cost effective determination. The commenter references Appendix B to GRE's November 2011 Refined Analysis ''cost and performance review'' by URS, which provides control efficiency data as a function of inlet NO_X concentrations for 55 existing SNCR installations.

Response: We disagree with this comment. We proposed a control efficiency of 49% for CCS 1 and 2 based on the combination of both enhanced combustion controls and post combustion controls. We have reviewed GRE's refined analysis, and we are not convinced that our 49% assumption is unreasonable. To the contrary, this level of NO_X reduction still appears achievable.

The URS report that GRE references to support its claim of reduced control efficiency values provides a plot in which NO_X control efficiency is plotted as a function of inlet NO_X concentrations. The URS plot does not provide the boiler sizes which would be necessary for a comparison to the data in the Control Cost Manual, or for comparison to the control efficiency we used in the proposed FIP. Table 3.1, ''Control Cost Summary,'' in GRE's Refined Analysis shows control efficiencies of 25% and 20% for Units 1 and 2 respectively, which differ from GRE's assessment of a 50% control efficiency in its original August 2007 BART analysis and its July 2011 corrected analysis.[25] [26] GRE's earlier 50% control efficiency was a reduction from the 0.22 lb/MMBtu baseline (which included existing LNB with a level of SOFA) to an emission limit of 0.11 with the addition of only SNCR controls (no additional or enhanced combustion controls). While we would not expect CCS could achieve a 50% control efficiency from the installation of SNCR alone, we do find our estimated 49% control efficiency reasonable based on the installation of both SNCR and enhanced combustion controls (SOFA plus LNB or LNC3).[27]

We proposed a NO_X BART FIP limit for CCS 1 and 2 of 0.12 lb/MMBtu that would apply to each unit singly on 30-day rolling average basis. We based this limit on our proposed finding that SNCR plus SOFA plus LNB was BART. While we continue to find that SNCR plus SOFA plus LNB is BART, we are changing the emission limit to 0.13 lb/MMBtu averaged over both units on a 30-day rolling average basis. Evidence submitted by commenters and our own additional analysis in evaluating comments has led us to conclude that this represents a more reasonable limit to apply on a 30-day rolling average basis.

This limit represents a control efficiency of 47.8% based on the average annual baseline emission rate of 0.22 lb/MMBtu (2003–2004) provided in the State's BART determination. This value is slightly lower than the 49% control efficiency we assumed in our proposal, a value that was based on the State's analysis. Beginning in 2010, CCS 2 voluntarily started employing LNC3, the more stringent level of combustion controls that the State evaluated in its

[24] GRE also included estimates for certain elements based on site-specific information. As discussed in other responses, some of these elements should not be included in the cost estimates for CCS.

[25] North Dakota RH SIP, Appendix C.2, Great River Energy, Coal Creek Stations, Units 1 and 2, BART Analysis, Revised December 12, 2007, Table 4–2, p. 26.

[26] Great River Energy Letter, July 15, 2011, Docket EPA–R08–OAR–2010–0406–0079, Table A–1a, pdf p. 7.

[27] LNC3 is an EPA acronym for low NO_X coal-and-air nozzles with close-coupled and separated overfire air which is one configuration among several that are considered SOFA. GRE used the acronyms LNC3 for the controls installed on Unit 1 and LNC3+ for the additional controls installed on Unit 2. For the purposes of our action, we are treating both units identically and refer only to LNC3.

BART determination. Annual average Clean Air Markets data for this unit reflects a NO_X emission rate of 0.153 lb/MMBtu. We estimate that SNCR would achieve an additional 25% reduction, equivalent to an emission rate of 0.115 lb/MMBtu. This compares to a value of 0.108 lb/MMBtu that the State originally estimated.

GRE asserted in comments that SNCR will only achieve a 20% reduction beyond LNC3. We find that 25% is a conservative and reasonable estimate. We considered several sources of information in arriving at this value. First, the Control Cost Manual states that in typical field applications, SNCR provides a 30% to 50% NO_X reduction. The manual provides a scatter plot with NO_X reduction efficiency plotted as a function of boiler size in MMBtu/hr.[28] The plot supports GRE's assertion that control efficiency could be lower than 50%, and could approach 30%, for larger boilers such as those at CCS. Second, Fuel Tech (one of the most recognized SNCR technology suppliers) estimates a range of 25% to 50% NO_X reduction with application of SNCR.[29] Lastly, ICAC has published information that supports a control efficiency of 20 to 30% for SNCR above LNB/combustion modifications.[30] Given this range of control efficiencies, we have settled on a control efficiency that is lower than the lowest value given by the Control Cost Manual, at the low end of the range estimated by Fuel Tech, and in the middle of the range estimated by ICAC.

To arrive at a final BART emission limit, we adjusted the projected annual average of 0.115 lb/MMBtu upward by 10% and then rounded to the nearest hundredth to arrive at 0.13 lb/MMBtu. In our experience, a 5 to 15% upward adjustment is appropriate when converting an annual average emission rate to a limit that will apply on a 30-day rolling average to account for the fact that shorter averaging periods result in higher variability in emissions due to load variation, startup, shutdown, and other factors.

As discussed in another response above, we do not agree with GRE that it is appropriate to lower the baseline emission rate based on GRE's voluntary installation of combustion controls on Unit 2 in 2010, well after the State established the historic baseline of 2003–2004 for BART planning. Use of such lower baseline rate would inappropriately skew the 5-factor BART analysis by reducing the emissions reductions from combinations of control options and increasing the cost effectiveness values.

b. CCS Emission Limits

Comment: Commenter stated that 30-day rolling limits are intended to be inclusive of unit startup and shutdown as well as variability in load. Consequently, associated BART limits must be higher than stated annual averages used for estimating cost effectiveness.

Response: As described in the proposed FIP, in proposing a BART emission limit of 0.12 lb/MMBtu, we adjusted the annual design rate of 0.108 lb/MMBtu upwards to allow for a sufficient margin of compliance for a 30-day rolling average limit that would apply at all times, including during startup, shutdown, and malfunction. While we proposed a BART limit of 0.12 lb/MMBtu, we invited comment on whether we should impose a different emission limit of 0.14 lb/MMBtu on a 30-day rolling average. After considering all comments, we have settled on a limit of 0.13 lb/MMBtu on a 30-day rolling average. We explain the basis for this limit in this section as well as in section III above.

c. CCS Modeling

Comment: Commenter stated that pollutant interaction has an impact on modeled visibility impairment and, as such, GRE believes that modeling changes to NO_X emission rates alone will not provide visibility modeling results that are representative of actual emission controls. Commenter asserted that this may overstate visibility improvement as compared to modeling NO_X, SO_2 and $PM_{2.5}$ together. However, for the purpose of illustrating the relative visibility impacts of SNCR and LNC3, the commenter presented an analysis of the incremental modeled impacts.

Response: Our review of North Dakota's and GRE's CALPUFF input files reveals that SO_2, NO_X, and particulate matter (PM) emission changes were in fact modeled together. All of the NO_X control options were modeled along with the SO_2 emission reductions that would be achieved from either a new scrubber or modifications to the existing scrubber. However, in order to determine the distinct visibility improvement from the NO_X control options, it is necessary to compare the modeled impacts to a pre-control scenario. This is in fact the approach prescribed by the BART Guidelines which state that you should ''[a]ssess the visibility improvement based on the modeled change in visibility impacts for the pre-control and post-control emission scenarios.'' 70 FR 39170. As noted in our proposal, because North Dakota did not provide visibility benefits relative to a pre-control baseline, ''it [was] not possible to describe the incremental visibility benefits of SNCR, or other NO_X control options, over the selected SO_2 BART control (scrubber modifications at 95% control).'' 76 FR 58623. As a result, we were only able to specify the incremental visibility benefit between NO_X control options. In our evaluation of BART for NO_X at CCS, we weighed the visibility factor in consideration of the fact that the improvement was incremental to lower NO_X controls and not relative to a pre-control baseline. We are not able to assess the visibility benefit information the commenter provided in Table 3.3.1 of the comments due to the lack of documentation and detailed explanation of the information presented.

d. CCS Coal Ash

Comment: GRE references Appendix C to its Refined Analysis ''Fly Ash Storage and Ammonia Slip Mitigation Technology Evaluation.'' GRE claims that its previous estimates of fly ash sales and disposal costs were ''screening level values'' and the Appendix C report provides a more comprehensive assessment of ash implications associated with SNCR installation. GRE states that the report illustrates that any ash impact costs add to the total cost of SNCR and make it less cost effective.

Response: Based on further analysis, we are not convinced that the use of SNCR will impact GRE's ash sales. We explain this more fully in the responses below. Also, regarding specific sales price and costs numbers, we are not convinced that GRE's Appendix C report, included with its comments, provides a more realistic picture of these values. We provide more detailed information in other responses.

Comment: GRE stated that mandating SNCR will leave GRE in a vulnerable position where it would expect to incur significantly higher costs from lost ash sales and increased landfilling. Commenter stated that GRE would expect to annually incur between $4,435,000 and $8,988,000 in additional ash costs. Commenter's contractor, Golder Associates, provided a revised analysis that included three potential scenarios of SNCR's impact to fly ash sales (GRE Appendix C): A. Sales are not affected; B. Worst case scenario—no

[28] U.S. EPA, EPA Air Pollution Control Cost Manual, EPA/452/B–02–001, 6th Ed., January 2002, Section 4.2, Chapter 1, p. 1–3.

[29] *http://www.ftek.com/en-US/products/apc/noxout/*.

[30] Institute of Clean Air Companies, White Paper Selective Non-Catalytic Reduction (SNCR) for Controlling NO_X Emissions, February 2008, p. 9.

ash sales; and C. 30% reduction in ash sales. Commenter asserted that scenario A is extremely unlikely, scenario B is a likely outcome, and scenario C is optimistic.

Response: In the proposed FIP, EPA agreed that use of SNCR might result in lost ash sales and the need to landfill fly ash due to ammonia contamination. These additional costs were included in our cost analysis supporting the FIP. However, we also invited comment on the assumption that use of SNCR would result in lost fly ash sales and on the availability of ammonia mitigation techniques. 76 FR 58620. We received responsive comments on both sides of the issue.

In the proposed FIP, EPA included costs of $2,023,000 for ''additional ash disposal'' and $2,023,000 for ''lost ash sales'' (76 FR 58621). EPA arrived at these values based on information that GRE itself supplied in July 2011. Based on an analysis performed by a consultant, GRE now asserts that the information GRE supplied in June and July 2011, regarding the sales price for fly ash and the costs for fly ash disposal, was not accurate. GRE supplied this information initially in June 2011 when it discovered that the information that it supplied to the State regarding these values in 2007 was inaccurate.

As part of our consideration of GRE's comments, and comments submitted by others disputing the notion that SNCR use would affect fly ash sales, we have investigated and analyzed this issue further. As part of our effort, we have contracted with EC/R, an engineering consulting firm, which in turn engaged Dr. James Staudt of Andover Technology Partners (ATP), who has expertise regarding the issue of ammonia in fly ash.[31]

Dr. Staudt recently presented a paper at the AWMA, EPA, EPRI, DOE Combined Power Plant Air Pollution Control ''Mega'' Symposium, August 30–September 2, 2010, Baltimore, Maryland, which reviewed the performance benefits in terms of ammonia slip, reagent consumption, and fly ash ammonia that is possible through optimization of SNCR operation using the information from continuous and real-time monitoring of ammonia slip.[32] As explained more fully below, current technology has made it possible to control ammonia slip from SNCR to levels similar to what is achievable with SCR, in the range of 2 ppm or less. It is widely accepted that ammonia at this level does not impact the potential sales and use of fly ash in concrete.

One type of continuous ammonia slip analyzer works on the principle of tunable diode laser spectroscopy and provides continuous, real-time indications of ammonia slip in the duct. This type of analyzer facilitates optimum operation of the SNCR system and minimizes ammonia slip.[33] In other words, GRE would not incur costs for lost sales of fly ash or additional ash disposal if it employed such a system at CCS.[34]

For these reasons, we conclude that charges for lost fly ash sales should not be applied to the SNCR system cost analysis and that SNCR can be successfully deployed at the CCS plant at a cost effectiveness level well below the estimate in our proposal of $2,500/ton of NO_X removed.[35]

Comment: Commenter stated the addition of SNCR will have a negative impact on the marketability, value, and perception of CCR's fly ash. The commenter further stated that increased levels of ammonia in the fly ash with SNCR create offensive odors, are potentially dangerous to human health, and can pose an explosion risk. Commenter cited EPA's Control Cost Manual to bolster this position. Commenter stated that ammonia slip of only 5 ppm, generally accepted as the minimum that can be achieved with SNCR, can render fly ash unmarketable.

Response: EPRI performed a study in 2007 that examined the effects of ammonia slip from SCR systems and reached the conclusion that ''The survey overwhelmingly indicated that ammonia contamination is not impacting the ability of plants to sell ash.'' [36] Therefore, if an SNCR system were to achieve similar ammonia slip levels as SCR systems, then an adverse impact on fly ash marketability would not be expected.

Commenter's assertion that 5 ppm is the minimum that can be achieved with SNCR is not consistent with experience with recently installed, state-of-the-art, SNCR systems. As noted above, recently installed SNCR systems are capable of ammonia slip levels in the range of 2 ppm, and experience at the CP Crane Station in Baltimore, Maryland demonstrates that ammonia slip can be maintained below 2 ppm while also ensuring that high ammonia slip excursions during load changes and other transients are avoided.[37]

In some cases the testimonials [38] provided by GRE regarding the adverse effects of ammonia are highly questionable. As an example, one of the testimonials from a Mr. Boggs incorrectly cautions about the explosiveness of ammonia—

> ''I would point out that with the storage dome at Coal Creek, the ammonia levels that could accumulate would be extremely hazardous. A little know (sic) fact is that ammonia is an explosive gas at certain levels when it accumulates with air present''.

On the other hand, according to the North Dakota State University,

> ''Anhydrous ammonia is generally not considered to be a flammable hazardous product because its temperature of ignition is greater than 1,560 degrees F and the ammonia/air mixture must be 16 percent to 25 percent ammonia vapor for ignition.'' [39]

Although, in principle, ammonia can be combustible under special conditions, these are conditions that are highly unlikely to result from ammonia in fly ash—even if fly ash ammonia concentrations were to reach several hundred ppm. In fact, to our knowledge, there has never been a fire or explosion resulting from ammonia in fly ash.

In summary, GRE's comments and testimonials generally overstate the real concerns regarding ammonia that may result in the fly ash of a plant equipped with SNCR.

Comment: Commenter stated that the social, economic and environmental benefits from re-using ash are not outweighed by costs nor are they outweighed by the imperceptible improvements to visibility.

Response: As stated above, EPA anticipates that application of SNCR at

[31] Information regarding EC/R and Dr. Staudt's credentials is available in the docket.

[32] Staudt, J., Hoover, B., Trautner, P., McCool, S., and Frey, J., ''Optimization of Constellation Energy's SNCR System at Crane Units 1 and 2 Using Continuous Ammonia Measurement,'' AWMA, EPA, EPRI, DOE Combined Power Plant Air Pollution Control ''Mega'' Symposium, August 30–September 2, 2010, Baltimore, MD.

[33] Id.

[34] EC/R also received input directly from Fuel Tech that its SNCR systems are fully capable of being operated so as to avoid detrimental ammonia levels in the fly ash.

[35] Even should some portion of the CCS fly ash be affected by greater levels of ammonia, which we find unlikely, we conclude that ammonia slip mitigation (ASM) technology or another technology could be utilized to address or mitigate ammonia in the fly ash. Dr. Ron Sahu, in comments on our proposal, mentions three possible systems that could be used, and our consultants are aware of no technical reasons that ASM technology would not be effective to mitigate ammonia on fly ash from lignite.

[36] *http://my.epri.com/portal/server.pt?Abstract_id=000000000001014269.*

[37] Staudt, J., Hoover, B., Trautner, P., McCool, S., and Frey, J., ''Optimization of Constellation Energy's SNCR System at Crane Units 1 and 2 Using Continuous Ammonia Measurement,'' AWMA, EPA, EPRI, DOE Combined Power Plant Air Pollution Control ''Mega'' Symposium, August 30–September 2, 2010, Baltimore, MD.

[38] EPA–R08–OAR–2010–0406–0077, Letter from GRE to NDDH, February 9, 2010.

[39] *http://www.ag.ndsu.edu/pubs/ageng/safety/ae1149-1.htm.*

CCS would not decrease the amount of ash re-use. Our FIP is based on a reasonable consideration of the five BART factors: Costs of compliance, the energy and non-air quality environmental impacts of compliance, any existing pollution control technology in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. We understand that GRE may have reached a different result based on its consideration of the statutory factors and other factors; that does not mean our determination is unreasonable.

Comment: Commenter asserted that changes to the quantity of fly ash marketed and sold will have a direct impact on fly ash management costs, as the revenue currently used to offset fly ash management will be lost. The lost fly ash sales revenue is based on the 2010 average price per ton FOB of $41.00; with 30% of the sale price going to GRE as revenue.

Response: As stated above, we do not agree that fly ash sales would be impacted. If there were any lost revenue, the lost revenue to GRE is the only cost that should be considered, not the full FOB price which includes revenues to others. This cost was $5/ton prior to December 2011 [40] as presented by GRE in its comments. Were it still relevant, we would consider this a reasonable price to use. In addition, we would consider $5/ton to be a reasonable cost to GRE for ash disposal, resulting in a total cost to GRE of $10/ton.[41] URS increased the ash sales price to $12.30 in the refined analysis based on GRE's 2012 ash sales contract price. We are not convinced that such an increase would be appropriate. GRE did not provide any detail on the basis for the increased price. Considering this is a 2012 contract price, it may even be based on projected information. It was reasonable for us to rely on the best estimates at the time of our proposal. We note that GRE itself supplied these estimates.

Comment: Commenter stated that EPA's Control Cost Manual (2002) does not allow GRE to include in the BART analysis the value of previously purchased assets that would be rendered useless by the elimination or reduction of fly ash sales. GRE claims $31 million has been invested on ash storage, transportation and distribution infrastructure along with their strategic partner Headwaters Resources. Of the $31 million, GRE has contributed $7 million.

Response: Given the availability of means to control ammonia levels in the fly ash, we do not agree that previously purchased storage, transportation, and distribution infrastructure would be rendered useless. However, the commenter is correct that the Control Cost Manual does not consider the costs of existing infrastructure that would be rendered useless as a result of installing new or retrofit controls. The Control Cost Manual is designed to provide methods for estimating the specific costs of installation and operation of control technologies to allow consistent comparison of such costs across multiple sources; thus, the ''stranded'' costs for existing infrastructure are not accounted for in the cost estimation methodology found in the Control Cost Manual.

Comment: Commenter asserted that even with a cost effective ASM technology installed, there will be times when the residual ammonia levels in the ash are too high to treat. Ammonia injection rates will vary during periods of startup and shutdown, in addition to variable load operation, in order to maintain compliance with the BART limits. The commenter stated that variable ammonia injection rates and associated changes in ash concentrations will result in frequent testing and periodic rejection of ash requiring on-site disposal. The commenter further stated that variable ammoniated ash levels will put GRE's generated ash in a very vulnerable position with respect to competitors in the fly ash marketplace, reducing ash sales and increasing on-site disposal.

Response: Testimonials provided by GRE cited older SNCR systems, such as Eastlake Station in Eastlake, Ohio, as causing problems for fly ash marketability. (The testimonials also reaffirmed that fly ash from boilers with SCR systems remained marketable.) The Eastlake SNCR system was installed several years ago, and current state-of-the-art SNCR systems have been demonstrated to control ammonia slip to avoid high ammonia slip transients, as described by Staudt, *et al.*[42] Ammonia slip can be consistently maintained at low levels in the range of 2 ppm or less over a wide range of loads for load following units, and this was demonstrated at the two units at CP Crane Station near Baltimore. The control system was optimized expressly to minimize the effects of ammonia on plant fly ash. This was made possible by utilizing permanently installed ammonia monitoring devices. Both units needed to maintain slip at low levels while making several rapid load changes a day. CP Crane Station has continued to control the SNCR system in this manner. As described in the referenced paper, the accuracy of the continuous ammonia instruments were shown to be comparable to wet chemistry measurements at these low levels of ammonia slip and the instruments have had good reliability.

Another aspect of ammonia slip and impact on fly ash marketability is that the alkalinity of the fly ash will impact how much ammonia becomes attracted to the fly ash. Fly ash from bituminous coals, with more sulfur trioxide, will tend to attract more ammonia than fly ash with a high alkalinity, such as fly ash from North Dakota lignite. As a result, ammonia deposition on fly ash at CCS is likely to be less of an issue than it would be on a bituminous coal unit, such as Eastlake, and higher ammonia slip levels may be tolerable before fly ash marketability is affected.[43]

Comment: Commenter stated that, to GRE's knowledge, no lignite-fired unit is currently operating SNCR and ASM technology, and the vendor would not guarantee any level of performance for a lignite-fired unit.

Response: Evidence indicates that modern SNCR systems can achieve ammonia levels of 2 ppm or below, which would avoid the need for use of ASM technology.

Our review of EPA Title IV data for 2010 found that there are three tangentially fired coal-fired boilers that burn lignite coal and control emissions to under 0.14 lb/MMBtu with SNCR. These include Big Brown 1 and Monticello 1 and 2. According to the Fly Ash Resource Center, both the Big Brown Plant and the Monticello Plant market their fly ash through Boral Materials.[44] The Monticello fly ash was designated an approved material by the Arizona Department of Transportation (July 2011 [45]) and Georgia Department of

[40] Docket EPA–R08–OAR–2010–0406–0201, GRE comments, pdf p. 27.

[41] The American Coal Ash Association indicates that where ash is disposed near the power plant, a cost of $5/ton is reasonably expected.

[42] Staudt, J., Hoover, B., Trautner, P., McCool, S., and Frey, J., ''Optimization of Constellation Energy's SNCR System at Crane Units 1 and 2 Using Continuous Ammonia Measurement''. AWMA, EPA, EPRI, DOE Combined Power Plant Air Pollution Control ''Mega'' Symposium, August 30–September 2, 2010, Baltimore, MD.

[43] This is supported by the Fly Ash Resource Center as stated on its Web site, ''Ashes that are basic in nature with very low sulfur content adsorbs much less ammonia than high sulfur Eastern bituminous coal ashes.'' *http://www.rmajko.com/qualitycontrol.htm.*

[44] *http://www.rmajko.com/suppliers1.html.*

[45] *http://www.azdot.gov/highways/materials/pdf/materials_source_list_flyash.pdf.*

Transportation (January 2012 [46]). According to Boral's Web site, the Big Brown ash has been designated an approved material by several state departments of transportation.[47] Both of these plants are selling their fly ash and are not experiencing adverse impacts with ammonia in the ash.

This is further evidence that GRE's assumption, that the CCS plant would be unable to market its fly ash, is unjustified. Also, as indicated above, if it were necessary to employ ammonia mitigation to the fly ash, we think at least one of the available systems could be employed at CCS.

Comment: Commenter stated that the BART analysis does not take into account the additional regional economic impacts resulting from the reduction of CCS ash sales. GRE uses the freight on board (FOB) price of the ash to estimate a loss to the local and regional economy from the elimination of ash sales of as much as $28.70/ton or $11,910,500 per year.

Response: As we have already discussed, we do not agree that ash sales would be reduced with the implementation of SNCR. Thus, there should be no regional economic impacts from lost fly ash sales. However, were this comment still relevant, we note two points. First, the BART Guidelines, which are mandatory for CCS, prescribe a method for estimating the specific costs of installation and operation of control technologies to allow consistent comparison of such costs across multiple sources. This method does not include consideration of regional economic impacts. If such impacts were to be considered, different methodologies and different notions of cost effectiveness would have to be developed. While we are sensitive to broader economic impacts, they are not part of our focused analysis of the BART factors in making a BART determination.

Second, if we were to consider such impacts, there is considerable uncertainty in the estimate GRE provided, which attempts to conduct a complex economic assessment based on FOB price alone. For example, the estimate does not consider the offsetting economic impact of replacement materials, such as alternative concrete admixtures, which would be used by concrete manufacturers as an alternative to CCS's ash.

Comment: Commenter stated that loss of ash sales at CCS would negatively impact the regional and national economy, as well as the regional and national infrastructure. The commenter stated that the beneficial use of fly ash is directly responsible for a large number of jobs throughout the country. The commenter highlighted the importance of fly ash as a component of road and bridge construction across the country, and cited a report by the American Road and Transportation Builders Association. According to GRE, the research in the report concluded that the elimination of fly ash as a construction material would increase the average annual cost of building roads, runways, and bridges in the United States by nearly $5.23 billion. This total includes $2.5 billion in materials price increases, $930 million in additional repair work and $1.8 billion in bridge work. The additional costs would total $104.6 billion over 20 years.

Response: For the reasons expressed in our response to the previous comment and in our other responses, we do not consider this comment relevant to our decisions. We have concluded that CCS's ash sales will remain feasible, and find that the impacts cited by GRE are impacts that would apply to the entire fly ash industry and not just CCS. Furthermore, there is not sufficient evidence that elimination of CCS's ash sales would result in any of the impacts described above.

Comment: Commenter stated that the use of fly ash as a replacement for cement has environmental benefits. Commenter asserted that as a result of the increased use of fly ash, less land is disturbed for quarrying raw materials, less land is taken out of production for landfills, and less carbon dioxide (CO_2) is emitted into the atmosphere to make cement. Commenter argued that there will be a 1 to 1 ton increase in CO_2 emissions from using more Portland cement in place of ash.

Response: As stated in previous responses, we do not agree that the use of SNCR will cause GRE to experience a reduction in fly ash sales. Furthermore, GRE presents no evidence to support its claims about CO_2 emissions or reduced quarrying. CO_2 emissions result from many factors, and additional quarrying might be avoided through use of alternative sources of fly ash. As did the State, we have already considered the potential need to landfill additional fly ash in our five factor analysis, but do not consider that a reason to reject SNCR as BART.

Comment: Commenter stated that the landfill cost estimate includes costs for the life of the disposal facility including engineering, design, and permitting; construction; and operations and maintenance, including closure and post-closure care.

Response: As we stated in previous responses, we are not convinced that the use of SNCR will impact GRE's ash sales; thus, requiring additional on-site landfill facilities should not be necessary. Furthermore, we have noted in prior responses that we find a disposal cost of $5/ton is reasonable in the improbable event that some ash would need to be disposed.

Comment: Commenter stated that the ash management costs used in this analysis assumes that future ash disposal facilities will be designed and constructed to meet RCRA subtitle D standards. Commenter asserted that this cost would increase considerably if EPA tightens standards as a result of the uniform national disposal standards currently being considered.

Response: As already discussed, we do not agree that SNCR will lead to increased landfilling. Were this comment still relevant, we note that we evaluate costs based on the best information available concerning current costs. We do not know what the final coal combustion residuals regulations will require with respect to RCRA subtitle D and we are not required to include speculative costs in our estimates.

e. CCS Visibility Improvements Are Minimal

Comment: Commenter stated that the refined analysis demonstrates that the installation of SNCR will not result in perceptible visibility improvements in North Dakota's Class I areas, and it is not justifiable for GRE to incur the added cost of SNCR without any appreciable improvement in visibility. To support these claims, the commenter stated that from GRE's BART analysis, it can be estimated that the incremental deciview improvements associated with the installation of SNCR would range from 0.109 to 0.207, which are well below what EPA has established as a perceptible level to the human eye (0.5 deciviews).

Response: There is considerable uncertainty in the deciview improvements calculated by GRE. GRE provides an analysis of the incremental modeled impacts and cost per deciview in Table 3.3.1 of GRE's November 2011 Refined Analysis, but provides no further explanation of the table or the values contained therein. A January 19, 2012 NDDH letter to CCS also raises concerns about certain aspects of the table pertaining to baseline emission rates and deciview improvement values. In addition, it appears that GRE has calculated these values based on new

[46] *http://www.dot.state.ga.us/doingbusiness/materials/qpl/documents/qpl30.pdf.*

[47] *http://www.boralna.com.*

assumptions, and EPA raises concerns about some of these assumptions (e.g., control efficiency of SNCR) in other comment responses within this document.

Even if the results were correct, as noted elsewhere in our response to comments, the RHR is clear that perceptibility of visibility improvement is not a test for the suitability of BART controls. Also, as noted elsewhere in our response to comments, we have not used the dollar-per-deciview metric and find that it is reasonable to evaluate control options on the basis of the cost effectiveness in dollar-per-ton removed in conjunction with the modeled visibility improvement.

Concerning our consideration of visibility improvement in the CCS BART determination, the BART Guidelines (40 CFR part 51, appendix Y) state that deciview improvements must be weighted among the five factors and the Guidelines provide flexibility in determining the weight and significance to be assigned to each factor. Thus, achieving a visibility improvement greater than the perceptible level of 0.5 deciviews is not a prerequisite for selecting a particular control option as BART at CCS.

Comment: Commenter stated that combined utility NO_X emissions in North Dakota represent approximately only 6% of total NO_X emissions, and therefore, it is understandable that proposed and additional BART NO_X reductions from North Dakota utilities do not provide more visibility improvements in the Class I areas.

Response: We disagree with the commenter's assertion that the potential visibility improvements from NO_X controls on North Dakota EGUs would be small. The commenter's estimate of the contribution from utilities to NO_X emissions in North Dakota appears to be incorrect. Emission inventories developed by the WRAP for the 2000–2004 planning period show that EGUs contributed 78,995 tons out of a total of 229,460 tons of NO_X for all source categories combined.[48] Therefore, utilities account for some 34.4% of the total NO_X emissions in North Dakota, and more than any other source category.

Furthermore, the RHR states that BART determinations are based on circumstances such as the distance of the source from a Class I area, the type and amount of pollutant at issue, and the availability and cost of controls (70 FR 39116). Thus, sources that are closer to Class I areas and emit the types of pollutants that contribute to regional haze are more likely to be subject to BART requirements, regardless of their percent contribution to the statewide NO_X emission rate.

Comment: Commenter (GRE) stated that ammonia is a listed state toxic in North Dakota, and is viewed as a contributor to regional haze because it can bond with SO_2 and NO_X to form ammonium sulfate and ammonium nitrate aerosols. Commenter further stated that additional ammonia slip from the proposed SNCR for CCS may offset the relatively minor NO_X reduction proposed by EPA.

Response: GRE does not provide the anticipated ammonia emissions for comparison to the proposed NO_X reductions and states that this issue is outside the scope of its analysis. In the RHR, EPA states that there are scientific data illustrating that ammonia in the atmosphere can be a precursor to the formation of particles such as ammonium sulfate and ammonium nitrate; however, it is less clear whether a reduction in ammonia emissions in a given location would result in a reduction in particles in the atmosphere and a concomitant improvement in visibility (70 FR 39114). The evaluation of whether ammonia slip would offset the proposed NO_X reductions to some degree cannot be calculated due to the lack of information provided by GRE, as well as the inherent uncertainty in estimating the effects of ammonia emissions on regional visibility.

Furthermore, as stated in our previous responses, ammonia slip, due to the incomplete reaction of the NO_X reducing agent, can be limited to low levels through proper design of the SNCR system. Design of the SNCR system can be optimized by taking into account the temperature, NO_X concentration, residence time, and reagent distribution. Our recent analysis indicates that ammonia slip levels can be reduced to below 2 ppm with the introduction of the latest monitoring technology. Therefore, we disagree that any potential ammonia release from SNCR at CCS may offset the proposed NO_X reductions.

Comment: Commenter stated that NO_X contributes to ammonium nitrate formation, which is predominantly a winter ''haze'' contributor, and for the purposes of valuing the welfare effects of recreational visibility, it is important to consider that the North Dakota national parks are generally not in high use during the winter season. Commenter expressed concern over paying an extreme price per deciview resulting in imperceptible improvements for a time of year when the parks are generally not used.

Response: We addressed this comment in our responses to modeling comments in section V.C.

f. Comments on Alternative NO_X Emission Limits

In our proposal, we asked for comments on a possible alternative NO_X BART limit for CCS 1 and 2, based on use of combustion controls alone, of 0.14 lb/MMBtu. This section presents the comment summaries and our responses related to this issue.

Comment: Commenter stated that because CCS cannot achieve the 30-day rolling average emission rate without installation of SNCR, it should not be considered as an appropriate BART emission level. Commenter stated that this is consistent with EPA's own determination that a presumptive BART emission level of 0.17 lb/MMBtu is cost-effective and will result in significant visibility improvement. Commenter stated that these comments and the associated Refined Analysis demonstrate that any additional NO_X reductions would neither be cost-effective nor would result in perceptible visibility improvement in Class I areas.

Response: EPA does not agree with the commenter's assertions. EPA disagrees with certain of GRE's assumptions in its Refined Analysis. Please refer to other comment responses throughout this document for details about each of these assumptions. We have reasonably considered the five BART factors and have arrived at a reasonable BART determination.

As to the presumptive limits, the BART Guidelines state that utility boilers should be required to meet the presumptive NO_X emission limits, unless it is determined that an alternative control level is justified based on consideration of the statutory factors. As noted elsewhere, our regulations require that a state or EPA must consider the five statutory BART factors in determining BART and cannot simply default to the presumptive limits. We have already explained why the State's consideration of the costs of compliance was fatally flawed and why we must disapprove the State's BART determination. In promulgating our FIP, we have reasonably considered the five factors and arrived at a reasonable BART determination that is more stringent than the presumptive BART limit.

Comment: Commenter stated that NO_X limits should be expressed on an annual rather than 30-day basis, to account for the full spectrum of operations such as variable load, and

[48] Source: *http://www.wrapair.org/forums/ssjf/pivot.html.*

startups or shutdowns not accounted for in emission limits based on vendor guarantees. The commenter notes that an emission limit of 0.14 lb/MMBtu was achieved for a period of time, but it is not sustainable on a 30-day rolling average basis. Commenter cited attachment 1, GRE's operational history, as a rationale.

Response: The BART Guidelines require specification of a 30-day rolling average limit for EGUs; therefore, all averaging times in the proposed FIP have been stated on a 30-day rolling average basis, including necessary upward adjustments from annual emission rates to account for potential variations in emissions on a 30-day basis. For the reasons stated elsewhere, we have not changed our determination that SNCR plus SOFA plus LNB is BART, but we have changed the NO_X BART limit for CCS 1 and 2 to 0.13 lb/MMBtu on a 30-day rolling average basis.

Comment: Commenter argued that the NO_X emission limits proposed in the original BART evaluation for Units 1 and 2 did not consider that the units would experience significant load variability. Commenter stated that in September 2011, GRE increased the cycling range of CCS in response to market conditions, which caused significant load swinging and impacts to NO_X control performance. Commenter further stated that load variability is expected to continue as an operational scenario for Units 1 and 2 for the foreseeable future, and therefore any emission limit must account for this additional variability in emissions. The commenter asserted that the presumptive emission rate of 0.17 lb/MMBtu is achievable, including load variability.

Response: The 0.13 lb/MMBtu limit we have selected provides a reasonable margin for compliance, not only for load variability, but also for startup and shutdown conditions. The emission limit we have set also takes into consideration the control efficiency that can be achieved with SNCR. We have provided further discussion on this in previous responses.

Comment: Commenter stated that reducing NO_X to the absolute limits of LNC3 and DryFining™ leads to collateral damage to the CCS boilers. Specifically, GRE claims that installation of the second generation LNC3 technology in 2008 on Unit 2 contributed to circumferential cracking on the boiler tubes between the burner front and the over-fired air registers, as operators attempted to maintain low NO_X emission rates. GRE further stated that the 2010 implementation of DryFining™ technology with LNC3 accelerated tube leaks at CCS 2, causing unplanned outages. The commenter asserted that while it has been possible to operate at lower NO_X emission rates during ideal conditions, the risk of circumferential cracking increases significantly when operating at these lower rates. The commenter concluded that an emission rate between 0.14 and 0.17 lb/MMBtu for LNC3 and DryFining™ is not consistently achievable as a 30-day rolling emission limit; and the commenter firmly believes that 0.17 lb/MMBtu is the most stringent level.

Response: We have decided to finalize our proposal that SNCR + SOFA + LNB is BART. We note that using SNCR would alleviate GRE's concerns about circumferential cracking from use of LNC3 and DryFining™ while also helping to maintain NO_X emissions during periods of load variability. We provide additional responses pertaining to emission limits in this section.

Comment: Commenter stated that from a review of EPA modeling information from the Cross-State Air Pollution Rule (CSAPR) docket,[49] there are currently no tangentially-fired utility EGUs, in the CSAPR-affected states, with LNC3 combustion controls and SNCR post-combustion controls that operate at or below the presumptive BART limit of 0.17 lb/MMBtu for NO_X. The commenter further stated that none of the facilities included in the CSAPR database operate at or below the proposed FIP limit of 0.12 lb/MMBtu.

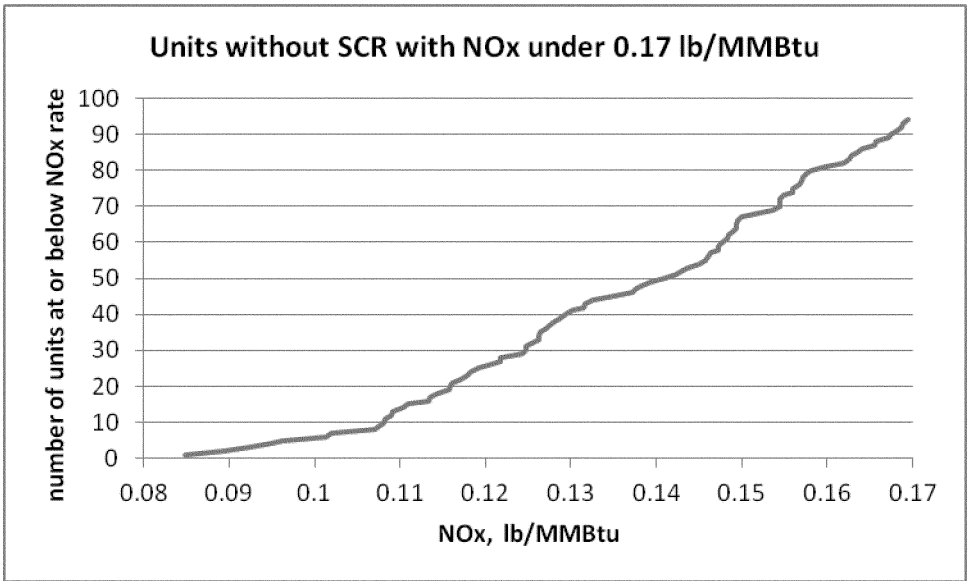
Response: The proposed 0.12 lb/MMBtu emission rate was based on the information that GRE itself supplied to North Dakota in 2007, and which North Dakota evaluated in its BART determination. Starting from baseline emission rates from 2000 to 2004 and the 50% SNCR control efficiency that GRE estimated, North Dakota arrived at an average annual emission rate of 0.108 lb/MMBtu. We adjusted this to 0.12 lb/MMBtu to arrive at a proposed 30-day rolling average emission limit.

Our analysis focuses on what is achievable using SNCR at CCS, based on the Control Cost Manual, vendor information (Fuel-Tech), the State's analysis, GRE's analysis, and our own analysis and expertise.

Analysis of emissions data found significant discrepancies in Figures 2.2 and 2.3 of GRE's November 2011 Refined Analysis. A review of EPA Title IV data for 2010 showed 94 coal-fired boilers that do not have SCR achieve annual emissions levels below 0.17 lb/MMBtu, with the median slightly under 0.14 lb/MMBtu (see Figure 1 below). Of these, ten of them are using SNCR in combination with combustion controls to achieve under 0.17 lb/MMBtu. See docket for a list of these facilities. Of these ten, three are supercritical tangentially-fired boilers that use lignite coal with emissions below 0.14 lb/MMBtu. These include Big Brown 1 and Monticello 1 and 2, as discussed earlier in our responses. In addition, the NEEDS Database v.4.10 for the Final Transport Rule in the CSAPR docket includes two tangentially-fired coal/steam units from North Carolina with LNC3 and SNCR that had emission rates of 0.159 lb/MMBtu and 0.164 lb/MMBtu.

[49] See *www.regulations.gov,* docket EPA–HQ–OAR–2009–0491.

Figure 1. Coal-Fired Boilers Operating Below 0.17 lb/MMBtu



As we explain elsewhere, we have decided to revise the BART limit from 0.12 lb/MMBtu to 0.13 lb/MMBtu on a 30-day rolling average.

Comment: Commenter stated that the 0.14 lb/MMBtu emission rate would only be achievable after installation of SNCR (and cannot be achieved by LNC3 alone), and SNCR is not cost-effective based on thresholds established by North Dakota and already approved by EPA.

Response: We are not aware of any cost effectiveness thresholds established by North Dakota and already approved by EPA. In making a BART determination, cost-effectiveness is one factor that must be taken into account, but the relevance of a particular dollar-per-ton figure for controls will depend on consideration of the remaining statutory factors. As already explained, we disagree with a number of GRE's assumptions underlying its cost calculations and its assertion that SNCR is not cost-effective.

As noted in prior responses, we no longer agree that the use of SNCR at CCS would lead to a loss of fly ash sales. Accordingly, EPA has revised its cost analysis on a per unit basis and has determined that SNCR could be installed and operated at CCS for $1,313/ton. This value assumes no costs for lost fly ash sales and no additional fly ash disposal costs. This cost includes combustion control costs and the combined control efficiencies for SNCR and combustion controls. Our research indicates that the cost of up-front ammonia slip control systems would likely be included in the control package from current SNCR suppliers where the need to control ammonia slip is identified, so we have not included a separate cost for such a control system in our revised cost estimate; evidence indicates that if there were any incremental cost associated with such a control system, it would not significantly affect the overall cost effectiveness of the controls.[50] We used a total capital investment for SNCR of $6.92 million ($10/kW [51]) that we derived from the company's July 15, 2011 submittal.[52] As explained more fully in a subsequent response, we find that URS's November 2011 analysis for GRE overestimates the capital costs for SNCR, among other things, by including a retrofit factor when none is warranted. Nonetheless, even if we use URS's inflated estimate of $11.80 million ($21/kW) for the total capital investment of SNCR, the resultant cost effectiveness value would be $1,524/ton.[53] Both the $1,313 per ton and $1,524 per ton values are well within the range of values that EPA and states other than North Dakota have considered reasonable for BART, and that North Dakota itself considered reasonable for BART at other North Dakota sources. (76 FR 58623).

Comment: Commenter stated that only supercritical boilers have shown the capability to achieve less than 0.14 lb/MMBtu, using SNCR and LNBs. Commenter further stated that, because CCS does not have any supercritical boilers and there are no other examples of a tangential fired source with only LNBs, it is unrealistic to expect any CCS unit to attain an annual average of 0.14 lb/MMBtu, and even more unrealistic to obtain this average on a 30-day rolling basis, using LNB alone.

Response: Based on our evaluation of data from CCS 2, we have decided that combustion controls alone may not be able to achieve a 30-day rolling average limit of 0.14 lb/MMBtu at CCS on a consistent basis. However, we have decided to finalize our determination that SNCR plus SOFA plus LNB is BART and are promulgating a limit of 0.13 lb/MMBtu on a 30-day rolling average basis.

We note that GRE claimed in its refined analysis that data on supercritical units does not provide an indication of SNCR performance at CCS because CCS does not have supercritical units. Supercritical units typically operate at higher furnace temperatures than subcritical units. The higher furnace temperature makes NO_X reduction with SNCR more difficult due to the competing urea oxidation reaction that causes NO_X reduction to drop off at high temperatures. As a result, one would expect SNCR performance to

[50] This is based in part on, ''Measuring Ammonia Slip from Post Combustion NO_X Reduction Systems,'' James E. Staudt, Andover Technology Partners, ICAC Forum 2000.

[51] The $10/kW capital cost is within the range that industry sources find reasonable for typical SNCR utility installations. See Institute of Clean Air Companies, White Paper Selective Non-Catalytic Reduction (SNCR) for Controlling NO_X Emissions, February 2008, p. 7.

[52] We used the $3,627,729 direct capital cost provided by the company and adjusted this to 2009 dollars. We then used the cost factors in the Control Cost Manual.

[53] We have included our calculations in the docket.

generally be better at a subcritical unit than a supercritical unit—all other factors being equal.

g. Cost Effectiveness of SNCR and SCR at CCS

Comment: Commenter stated that, when combined, the new analyses provided by URS and Golder Associates confirm that SNCR is not cost-effective, consistent with EPA's presumptive NO_X analysis. These analyses essentially reaffirm GRE's initial determination that DryFining™ and LNC3 is BART for CCS.

Response: Our prior responses address the presumptive emission limits and alleged cost effectiveness thresholds. We disagree that GRE's consultants' analyses confirm that SNCR is not cost effective or reaffirm GRE's initial BART recommendation. As we have noted, our analysis indicates that SNCR plus LNC3 is more cost effective than we estimated in our proposal.

Comment: Commenter stated that only a site specific evaluation by a competent SNCR supplier (URS) should be used to estimate emission reductions and associated costs. The URS refined analysis is provided in Appendix B of the GRE document. URS is a preeminent engineering consultant in SNCR technology, having designed several dozen SNCR pollution control systems throughout the world. This experience qualifies URS to make site-specific recommendations on SNCR design.

Response: EPA agrees that an evaluation by a competent SNCR supplier may be beneficial but notes that GRE has only now brought its ''refined analysis'' forward. GRE found it sufficient to supply several cost estimates to the State without such assistance. Regardless, URS is not an SNCR technology supplier. While URS is an engineering firm, it is not a supplier or developer of SNCR technology. As indicated in the experience list provided by URS, URS's role in these SNCR projects was primarily as constructor, performing a feasibility study, engineering, or procurement. In no cases was URS actually the process supplier—the company that actually designed the process and made the performance predictions and guarantees. See docket. Depending upon the project shown in the list provided by URS, its role may have been associated with managing project construction activities, engineering and location of equipment such as piping, tanks, etc., and in some cases simply ''feasibility studies,'' but in none of the cases it cites did URS actually design the SNCR process and develop performance guarantees.

While location of tanks, routing of process piping and other engineering or construction activities are important aspects of a project, they do not determine the process performance. Critical aspects of SNCR process design, which determine performance (NO_X reduction, reagent use and ammonia slip), are design of and location of injectors in the furnace, specification of reagent type, flowrates and control logic. Process design is performed by companies such as Fuel Tech, having supplied many utility SNCR systems, or other companies. For example, some of the installations cited by URS in its experience list, such as TVA Johnsonville and PEPCO were supplied by Fuel Tech or Advanced Combustion Technology. As indicated in the table provided by URS, URS apparently had a role in the engineering of these projects (location of storage tanks, piping between components, etc.), but did not develop the process design or the performance estimates for the TVA or PEPCO installations. Other installations cited by URS (new boilers at AES Warrior Run and the two Air Products installations) were actually designed and supplied by the circulating fluid bed boiler suppliers, with performance and guarantees developed by the boiler supplier. The balance of the installations cited by URS were either feasibility studies, where no real process guarantees were made, or were actually supplied by other companies (Applied Utility Systems, ESA, or others). In fact, the study that URS has conducted for GRE on CCS is essentially a feasibility study. Aside from URS's experience, the analysis URS conducted does not support that the CCS units are so unique that Control Cost Manual estimates of SNCR performance and costs are irrelevant.

Thus, while URS has the expertise to provide useful input on the cost associated with installing some of the associated equipment, it is not in the business of providing SNCR process designs and performance guarantees—and it apparently did not do this on any of the projects on its experience list.

GRE argues that the CCS units are unique and thus require evaluation by an SNCR process supplier in lieu of an analysis based on the Control Cost Manual. However, GRE has not provided any information from companies that actually design SNCR systems and have experience providing performance guarantees, such as Fuel Tech or another company that is an experienced SNCR supplier. Thus, GRE's claims about SNCR performance are not supported.

The control efficiency of SNCR is the main issue raised by URS because it has a significant impact on the overall cost effectiveness of SNCR, as further explained later in our responses. URS also provides a cost estimate which is used to support GRE's own cost analysis. While GRE comments that ''only a site specific evaluation, by a competent SNCR supplier (URS), should be used to estimate emission reductions and associated costs,'' the evaluation provided by URS is based on data from other plants. URS extrapolates the SNCR control efficiency using CCS data from a plot of control efficiency versus inlet NO_X concentrations for 55 existing SNCR installations. This differs from the Control Cost Manual, which plots control efficiency as a function of boiler size. Neither is a definitive ''site specific'' measure of estimating control efficiency. Furthermore, there are many other factors besides inlet NO_X concentration that affect the efficiency of an SNCR system. Thus, GRE has provided little support for reducing the SNCR control efficiency by 20 to 30 percentage points from the efficiency used in the proposed FIP and from what they themselves originally estimated (*i.e.,* from 50% down to 30% or 20%).

Since GRE has not provided any information from companies that actually design SNCR systems and have experience providing performance guarantees, GRE's claims, that its prior representations about SNCR performance should be disregarded, are not supported.

Comment: Commenter states that EPA's analysis contains faults that, when corrected, lead to the conclusion that SCR, not SNCR, is BART for the CCS units. The faults include, first, that the EPA analysis of $4,116/ton is, on its own, cost effective and close to the cost effectiveness value North Dakota and EPA accepted at Stanton Station Unit 1 of $3,778/ton. Second, EPA retains the 80% control efficiency for SCR from the State's BART determination when, elsewhere in the proposal, EPA acknowledges that SCR is capable of 90% control. The commenter adjusted the cost effectiveness value to $3,595 based on 90% control efficiency which, the commenter states, is cost effective and below the Stanton Station Unit 1 cost effectiveness previously mentioned. Third, EPA retained costs related to loss of sales from fly ash disposal in the SCR cost analysis, which is perhaps in error as there is no reason a well-designed SCR, particularly in the low dust or tail end configuration, would impact ash sales. SCRs can meet 2 ppm ammonia slip, and at that level the ammonia in the ash is typically acceptable for all

uses. Additionally, mitigation of ammonia in ash is feasible, and is probably a less costly option if ammonia is, improbably, an issue.

Response: We disagree with the comment regarding the control efficiency of SCR at CCS. We have determined that the 0.043 lb/MMBtu emission rate that North Dakota used in its cost analysis based on the 80% control efficiency was acceptable and probably the best performance achievable with SCR technology taking into consideration the existing combustion controls. Based on our own investigation, as discussed in our responses to GRE's comments discussed above, we agree with the commenter on the issue of fly ash and have revised our cost analysis. We have removed the lost fly ash sales and fly ash disposal costs. We further agree that ammonia levels in the ash will not be problematic and are not including ammonia mitigation costs in our analysis. Our revised analysis relies on the $280/kW installed capital cost that we discussed in our proposal. We used the $280/kW capital cost in lieu of the $110/kW figure that is derived from GRE's capital cost analysis. As we stated in our proposal, $110/kW is unreasonably low compared to actual industry experience. Based on these changes, we calculate a cost effectiveness value for LDSCR + ASOFA + LNB at CCS of $5,603/ton of NO_X removed. We find that this cost is excessive in light of the predicted visibility improvement. Thus, we are not changing our determination that SNCR+ASOFA+LNB is NO_X BART at CCS 1 and 2.

Comment: Commenter stated that the furnace boxes for CCS 1 and 2 are unique, as required by the high moisture content of Fort Union lignite. Commenter stated that the firebox is larger than other lower-moisture coal-fired units, resulting in a higher cost of NO_X combustion controls. Specifically, the commenter stated that the greater air flow distance through the furnace requires increased size and type of wall nozzles and increased staging complexity; and an advanced air combustion system added to a larger firebox requires additional wall openings and redesign to wall water tubes, further increasing costs.

Response: All electric utility boilers are built to the owner's specifications and are, therefore, unique. However, the information presented by the commenter has not convinced us that the CCS boilers are so unique that our costing assumptions or our overall cost estimates are unreasonable. The fuel burned at CCS is very low BTU fuel, which contributes to the large furnace size. Therefore, it is possible that a combustion retrofit for CCS might be somewhat higher in cost than for a similar retrofit for a boiler of similar output firing a higher Btu coal.

Examination of Title IV data shows several lignite fired boilers with significantly lower emissions than at CCS—some using only combustion controls and some using combustion controls in combination with SNCR.

The application of SNCR on low-BTU fuel utility boilers goes back to the late 1980's when it was successfully applied to German brown coal boilers.[54] The larger furnace volume of a lignite or other low-Btu furnace actually provides more time for the SNCR reaction to occur, which should be beneficial for mixing and the SNCR reaction. The advantage will likely be improved reagent utilization.

Comment: Commenter stated that the larger registers installed at CCS 2 further reduce NO_X emissions as they allow for increased primary air which is available after installation of DryFining™, and that larger registers are tentatively anticipated to be installed at CCS 1 in 2014.

Response: We evaluate potential control options based on baseline conditions, not on ongoing revisions to a facility after the baseline period. It is not reasonable to consider controls installed after the baseline period in determining BART. Such an approach would tend to lead to higher cost effectiveness values for more effective controls and encourage sources to voluntarily install lesser controls to avoid installing more effective BART controls later.

Comment: Commenter stated that URS reviewed and updated both capital and operating costs for SNCR, based on their expertise and site specific investigation. These values were relatively consistent with values presented to EPA in June and July 2011, but are somewhat higher than the screening values presented in the original BART analysis.

Response: The higher cost-effectiveness ($/ton) of SNCR in GRE's November 2011 submittal can be primarily attributed to the lower control efficiency value assigned to the technology. The July 2011 study estimates a control efficiency of 50% for SNCR, which yields a cost effectiveness value of $3,198/ton for both Units 1 and Units 2 (one estimate). The November 2011 study estimates an SNCR control efficiency of 25% for Unit 1 and 20% for Unit 2, which yields a cost effectiveness value of $7,629/ton and $10,506/ton for Units 1 and 2 respectively.

It should be noted that the November study actually estimates lower capital and annual costs of control, each of which would independently lower the cost effectiveness value. The total capital investment for SNCR estimated in the July study was $12.72 million, compared to $12.18 million and $11.80 million for Units 1 and 2, respectively, in the November study. The annualized capital plus operating costs in the July study were estimated at $8.91million, compared to $8.79 million and $8.12 million for Units 1 and 2 in the November study. One of the main reasons that costs are higher in the July study is maintenance costs; the annual maintenance costs in the July study are $1,907,375 compared to approximately $180,000 for each Unit in the November study.

The baseline emission rate is another factor which would result in higher cost effectiveness values in the November study. The baseline emission rate in the July study was estimated at 0.22 lb/MMBtu, compared to 0.20 lb/MMBtu and 0.153 lb/MMBtu for Units 1 and 2 in the November study. A lower emission rate would result in less emissions controlled and a higher cost effectiveness value.

The lower SNCR control efficiency in the November study results in less NO_X controlled (*i.e.,* 1,152 tons per year (tpy) for Unit 1 and 772 tpy for Unit 2 in the November study versus 2,786 tpy NO_X controlled in the July study), and a higher overall cost effectiveness value. The reduced SNCR control efficiency outweighs the changes to the cost of control, which would otherwise result in lower cost effectiveness values.[55]

[54] Hofmann, J.W., von Bergmann, J., Bokenbrink, D., Hein, K. ''NO_X Control in a Brown Coal-Fired Utility Boiler.'' Presented at the EPRI/EPA Symposium on Stationary Combustion NO_X Control, San Francisco, CA, March 8, 1989.

[55] Our analysis differs in that we considered SNCR combined with combustion controls.

TABLE 1—COMPARISON BETWEEN COST EFFECTIVENESS FACTORS IN GRE'S JULY AND NOVEMBER 2011 COST ESTIMATES FOR CCS

Study description	Baseline emission rate (lb/MMBtu)	Control efficiency	Emission reduction (ton/yr)	Installed capital cost (MM$/yr)	Annual O&M cost (MM$/yr)	Pollution control cost ($/ton)
SNCR, July Study, Both Units	0.22	50	2,786	12.72	8.91	3,198
SNCR, November Study, Unit 1	0.2	25	1,152.8	12.18	8.79	7,629
SNCR, November Study, Unit 2	0.153	20	772.5	11.8	8.12	10,506

We do not agree with the capital and operating costs estimated by GRE. First, URS has inappropriately applied a retrofit factor when calculating capital costs for the SNCR system. The Control Cost Manual states:

The costing algorithms in this report are based on retrofit applications of SNCR to existing coal-fired, dry bottom, wall-fired and tangential, balanced draft boilers. There is little difference between the cost of SNCR retrofit of an existing boiler and SNCR installation on a new boiler.[56] Therefore, the cost estimating procedure is suitable for retrofit or new boiler applications of SNCR on all types of coal-fired electric utilities and large industrial boilers.[57]

Therefore, retrofit costs are inherent in the costs provided by the Control Cost Manual method and there is no need to introduce a retrofit factor. In using a retrofit factor of 1.6, URS overestimated capital costs by 60%.[58]

Another concern we have is that URS's estimate of reagent usage is high. The following is an examination of the 0.20 lb/MMBtu inlet level with 25% reduction case in URS's Table 4.[59] Using a boiler rating of 5900 MMBtu/hr,[60] an initial NO_X level of 0.20 lb/MMBtu, and a normal stoichiometric ratio (NSR) of 1.0 (30 lb urea/46 lb NO_2),[61] the hourly usage of reagent is: 5900 MMBtu/hr * 0.20 lbNO_2/MMBtu * (30 lb urea/46 lb NO_2) = 770 lb/hr.

This is roughly half of what URS calculated as the urea usage. In all of the cases URS estimated, the result is high. Since URS appears to have overestimated the reagent cost, it is likely that URS overestimated the water cost as well.

In this case, with urea at $500/ton delivered, the reagent portion of cost would be:

$500/ton * (1 ton/2000 lb)* 770lb/hr = $192/hr.

The tons removed per hour would equal:

(5900 MMBtu/hr)*(0.20 lb NO_2/MMBtu)*(0.25 reduction)*(1 ton/2000 lb) = 0.148 ton/hr.

The reagent portion of cost is 192/0.148 = $1,300/ton of NO_X removed.

This $/ton for reagent would be the same assuming the same cost per ton of urea and the same chemical utilization (25%, or 25% reduction at an NSR = 1.0).

The errors in the URS estimate are carried through to GRE's estimates.

Comment: Commenter stated that with the installation of LNC3, LNC3+, and DryFining™;, CCS's NO_X emissions are greatly reduced with respect to ''baseline'' values previously provided; and it is necessary to update the baseline emissions for Units 1 and 2 for this technology evaluation in order to reflect current conditions and unit performance. Commenter stated that the revised baseline emissions for Units 1 and 2 should be adjusted to 0.201 lb/MMBtu and 0.153 lb/MMBtu, respectively. The commenter stated that the use of DryFining™ technology has already been implemented for use at both units at a cost of $270 million, and GRE has made a significant investment to achieve multi-pollutant emission reductions and visibility improvements in the region.

Response: As stated in our previous comments, we reject GRE's revised baseline. We evaluate potential control options based on baseline conditions, not on ongoing voluntary revisions to a facility after the baseline period. It is not reasonable to consider voluntary controls installed after the baseline period in determining BART. Such an approach would tend to lead to higher cost effectiveness values for more effective controls and encourage sources to voluntarily install lesser controls to avoid more effective BART controls later.

Comment: The refined economic impacts analysis provided by GRE confirms GRE's original conclusion that SNCR is not a cost effective NO_X control option.

Response: We disagree with the cost effectiveness analysis provided by GRE in the refined analysis. We disagree with the control efficiency used for SNCR in combination with SOFA plus LNB used in the refined analysis, the assumed baseline and controlled emission rates, and the assumed reduction in ash sales. These issues are further discussed in the comment responses specific to each issue.

h. CCS General Comments

Comment: The commenter stated that at the time of this submittal, GRE has already installed LNC3 combustion controls at Unit 2. In 2011 dollars, this was at a cost of over $6 million and has already resulted in NO_X reductions. The same system is tentatively scheduled to be installed on Unit 1 during the 2014 outage.

Response: As stated in our previous comments, we reject GRE's use of a revised baseline.

3. Stanton Station Unit 1

Comment: Commenter states that the BART limits for the Stanton Station are contrary to BART requirements. Commenter states that both SO_2 and NO_X emission rates would decrease if only Powder River Basin (PRB) coal were allowed to be burned, because the burning of North Dakota lignite coal creates higher emissions of both pollutants. Commenter also states that EPA's cited 7th Circuit Court of Appeal decision (76 FR 58589) would not apply to such a requirement because that decision only applies to the redesign of a source.

Response: We do not interpret the CAA or the regional haze regulations as

[56] Rini, M.J., J.A. Nicholson, and M.B. Cohen. Evaluating the SNCR Process for Tangentially-Fired Boilers. Presented at the 1993 Joint Symposium on Stationary Combustion NO_X Control, Bal Harbor, Florida. May 24–27, 1993.

[57] Control Cost Manual, Section 4.2, p. 1–4.

[58] It appears that URS overestimated capital costs in other ways as well. Consistent with the BART Guidelines, and as outlined in our proposal and in this action, we have applied the factors permitted by EPA's Control Cost Manual to GRE's estimate of direct capital equipment costs for SNCR to arrive at a reasonable estimate of the total capital investment. We do not agree with URS's estimate of total capital investment because it relies on factors that are inconsistent with the Control Cost Manual.

[59] URS did not analyze a case with the parameters we have determined are most reasonable; we are providing the reagent cost review of one of URS's cases to highlight our concerns with the methodology. Considering an inlet emission rate of 0.15 lb/MMBtu and a 25% reduction, the parameters we find are reasonable, the reagent cost would be $1,304/ton using a similar analysis.

[60] EPA and the North Dakota SIP assume 6,112 MMBtu/hr, but URS assumes 5,900 MMBtu/hr. The difference will not affect the conclusion that URS's reagent costs are high.

requiring states to consider limiting the type of coal burned as a BART control technology. We note that we did not cite the referenced 7th Circuit decision in support of our proposal to approve the BART limits for Stanton Station.

Comment: One commenter states that EPA is proposing to approve SNCR + OFA + LNB as NO_X controls for Stanton Station Unit 1. While the commenter supports the use of further NO_X controls at this facility, the commenter asks EPA to further evaluate the cost estimates for SCR at this facility. According to the commenter, the cost estimates for SCR that EPA relied on in its proposal appear to include, at a minimum, costs associated with allowance for funds used during construction (AFUDC), which is not appropriate under the BART Guidelines and Control Cost Manual. Further, the underlying calculations in Stanton Station's BART submission to North Dakota do not clearly support the resulting cost.

Response: We relied on cost estimates submitted by North Dakota in our evaluation of the cost effectiveness of NO_X control options for Stanton Station Unit 1. In turn, North Dakota relied on costs taken from GRE's BART analysis as found in Appendix C.2 to the SIP. GRE asserts that these costs were derived ''using the procedures found in the EPA Air Pollution Control Cost Manual.'' [62] However, as suggested by the commenter, there are irregularities in how GRE applied the SCR cost methods in the Control Cost Manual. In particular, GRE included a line item for AFUDC in the amount of $8,232,000. However, closer examination reveals that this line item represents the cost of replacement power associated with a purported 10 week outage for installation of the SCR, and does not represent allowance for funds used during construction. Regardless, elimination of this line item would only lower the cost effectiveness values for SCR when burning lignite and PRB coal from $6,475/ton to $6,118/ton and $8,163/ton to $7,713/ton, respectively. In addition, the total capital investment stated by GRE for SCR of $55,279,000 equates to $294/kilowatt (kW). We find this cost consistent with the installed SCR retrofit costs, ranging from $79/kW to $316/kW (2010 dollars), cited in recent industry studies.[63] We expect that the cost at Stanton Station Unit 1 would be at the higher end of this range given its relatively low generation capacity of 188 MW. Accordingly, while we agree that there are questions regarding the underlying calculations, it is our opinion that further evaluating costs would not change the outcome of the BART determination.

4. Leland Olds Station Unit 1

Comment: Commenter stated that SCR, not SNCR, is BART at LOS 1. Commenter further stated that EPA assumed that Basin Electric overestimated the costs for SCR at this unit, but did not re-estimate the costs. Commenter analyzed the costs based on the revised cost for SCR at Unit 2, and considers its lower cost estimate ''well within the range of values determined to be cost effective in similar regulatory proceedings.''

Response: We have included in the docket for our final action an SCR cost estimate for LOS 1 that was based on methods similar to those we used for our SNCR cost analyses for MRYS 1 and 2 and LOS 2. The analysis was not an exhaustive effort but was used as a check of the analysis provided by North Dakota. Our analysis found the cost of SCR + SOFA would be approximately $5,132/ton of NO_X emissions removed with an incremental cost effectiveness between the SCR and SNCR control options of $8,845/ton of NO_X emissions removed. The cost estimates for SCR at LOS 1 that National Parks Conservation Association (NPCA) and the NPS provided in their comments reflect cost effectiveness values greater than $4,000/ton of NO_X emissions removed. While these various estimates are lower than those the State relied on, they are still high enough that we are not prepared to change our conclusion that the State's BART determination of SNCR + Basic SOFA for LOS 1 was reasonable.

Comment: Commenter stated that there is no discussion why SNCR + Boosted SOFA was rejected as BART.

Response: In response to this comment, we reviewed the benefits of SNCR + Boosted SOFA over SNCR + Basic SOFA. We determined that the two combustion control options achieve very similar results and that the incremental cost of the Boosted SOFA option at $7,826/ton is excessive compared to the 92 tons of additional NO_X reductions, which we anticipate would provide a low visibility benefit.

F. General Comments on SO_2 and PM Pollution Controls

Comment: One commenter stated that North Dakota's BART analyses that EPA proposes to approve fail to include the most stringent level of control that is achievable using scrubber technology since scrubbers can achieve 99% control efficiency. Commenters also stated that, with regard to SO_2, EPA should require both the lb/MMBtu limit and the percent control efficiency limit to be met in order to meet BART, rather than require that either limit be met as EPA proposed. One commenter stated that if only the percent reduction limit is set, emissions will increase with the sulfur content of the fuel unless sulfur content is also limited. One commenter requested EPA set a numeric limit rather than percent reductions.

Response: We agree that the RHR requires states to consider the most stringent level of control. We also agree that, in most applications, wet or dry scrubbers can achieve greater emission reductions than those required by North Dakota. However, there is very limited data on the performance of wet or dry scrubbers at units firing lignite, such as those in North Dakota. In a 2007 BACT determination for two new lignite-fired boilers at Oak Grove Station in Texas, the Texas Commission on Environmental Quality established an SO_2 emission limit of 0.192 lb/MMBtu on a 30-day rolling average. Based on this, we find that the emission limits established by North Dakota are not unreasonable. Also, we would like to emphasize that three of the North Dakota units have existing controls for SO_2 and that the emission reductions that can be achieved with upgrades to these existing controls may not be as great as those that can be achieved by a new scrubber installation. Finally, on the point of allowing either a lb/MMBtu or a percent control efficiency limit, we typically prefer a single limit. However, the BART guidelines list the presumptive levels in units of lb/MMBtu or a percent reduction, and we cannot say that the State's approach is inconsistent with the guidelines. The State chose to take advantage of this point and specifically found that it was not appropriate to establish limits on a lb/MMBtu and percent reduction basis. This was in part to allow for the potential that higher sulfur coals might be burned in the future, in which case the State believed that the percent reduction basis would extend greater flexibility. Based on these factors and our consideration of all the circumstances involved, we find that the SO_2 emission limits established by North Dakota are not unreasonable and we are approving them.

Comment: Commenters stated that North Dakota did not consider upgrading ESPs to decrease PM emissions, as is required by the BART Guidelines.

[62] Coal Creek Station Units 1 and 2 Best Available Retrofit Technology Analysis, Revised December 12, 2007, p. 8.

[63] Revised BART Cost Effectiveness Analysis for Tail-End Selective Catalytic Reduction at the Basin Electric Power Cooperative, Leland Olds Station Unit 2, Final Report, March 2011, docket EPA–R08–OAR–2010–0406–0076, p. 8.

Response: As noted in our proposal, the ESPs already reduce emissions by 99% or greater. Where new wet or dry scrubbers or modifications to existing scrubbers will be installed, additional PM emission reductions, particularly of sulfuric acid mist, will be achieved. Moreover, as noted in North Dakota's SIP, the visibility improvement that can be achieved by further reducing PM is minor. For example, North Dakota's BART determination for M.R. Young Unit 2 shows that the highest visibility impact from PM in the baseline was 0.0165 deciviews (LWA, 2001). SIP, Appendix B.4, p. 26. Similarly, North Dakota's BART determination for Stanton Station Unit 1 shows that reducing PM from 0.1 lb/MMBtu to 0.015 lb/MMBtu would only improve visibility by 0.021deciviews (TRNP–SU, 2002). SIP, Appendix B.3, p. 9. Accordingly, we find that North Dakota reasonably eliminated ESP upgrades from consideration.

Comment: One commenter stated that the control efficiency for baghouses was underestimated.

Response: We agree that the control efficiency for baghouses was underestimated. However, this has no practical bearing on our evaluation of North Dakota's BART control determinations for PM as, consistent with the BART Guidelines, North Dakota was not required to consider the replacement of existing PM control devices. Stanton Station is the only facility where North Dakota is requiring new PM controls, but this is only in association with the spray dryer absorber needed to control SO_2.

Comment: Commenters stated that a PM continuous emission monitoring system (CEMS) must be installed, operated and used to demonstrate continuous compliance with the PM emission limits on units that are subject to BART.

Response: PM CEMS would provide the most robust means of demonstrating continuous compliance with the PM emission limits. However, we disagree that their use is required. We find that the monitoring requirements in the RH SIP are adequate to demonstrate continuous compliance with the PM emission limits.

Comment: BART should be evaluated for both course particulate matter (PM_{10}) and $PM_{2.5,}$ but was only evaluated for PM_{10}. EPA should therefore impose a BART limit on total $PM_{2.5}$.

Response: In our BART Guidelines, for the purposes of identifying visibility impairing pollutants, we allowed states to use emissions of PM_{10} as an indicator for $PM_{2.5,}$ as the components of $PM_{2.5}$ are a subset of PM_{10}. 70 FR 39160. For the same reasons, we find that it is reasonable for North Dakota to have explicitly evaluated BART only for PM_{10}. We also note that North Dakota did evaluate BART for condensable PM which comprises a large portion of the $PM_{2.5}$.

Comment: Commenter stated that North Dakota incorrectly set a limit for PM at .07 lbs/MMBtu. Commenter stated that the actual emissions from most units averaged .03 lbs/MMBtu to .05 lbs/MMBtu, and there is therefore no support for limits higher than .03 lbs/MMBtu. Additionally, the commenter asserted that these limits should be set on a unit-by-unit basis.

Response: As noted in prior responses to comments, the visibility improvement that could be achieved with new or upgraded PM controls is negligible. That response also holds true within the context of setting tighter emission limits. Therefore, we find that PM emission limits set by North Dakota are not unreasonable.

Comment: Commenter stated that EPA deviates from the BART guidelines in failing to establish a clear time period (hourly, 24-hour, 30-day or annual) over which the proposed PM limits would apply. Commenter further stated that North Dakota's BART determinations are unenforceable because there are no proposed monitoring, recordkeeping and reporting requirements that would ensure compliance with the filterable PM limits. Commenter stated that this was contrary to the CAA, because BART is defined as based on continuous emission reductions, which cannot be ensured.

Response: We disagree with the commenter. First, we seek to clarify that while emission limits must be enforceable as a practical matter, the BART Guidelines clearly state that CEMs are not required in every instance. 70 FR 39172. Moreover, the BART Guidelines recognize that monitoring requirements are in many instances governed by other regulations, such as compliance assurance monitoring. North Dakota established monitoring, recordkeeping and reporting requirements for PM emission limits in permits to construct which are included in Appendix D of the SIP. The monitoring requirements for PM include emission testing using EPA-approved test methods, such as Method 5B and Method 17. As specified in each permit to construct, these tests must consist of three test runs, with each test run at least 120 minutes in duration. The monitoring requirements also require the use of a Continuous Assurance Monitoring (CAM) Plan developed in accordance with NDAC 33–15–14–06.10. The CAM Plan will include other provisions necessary to show compliance. We find that these monitoring provisions are adequate to ensure continuous emission reductions as required under BART.

G. Comments on Reasonable Progress and North Dakota's Long-Term Strategy

Comment: Minnkota states that EPA's proposed FIP does not follow EPA guidelines for RP determinations. The commenter cites, without a page number, the Burns & McDonnell report attached to the comments.

Response: EPA is unable to identify any support in the Burns & McDonnell report for the statement. Standing alone, the comment is insufficiently specific to warrant a response. Below, EPA responds to comments that EPA's disapproval of the State's RP determination for AVS is inconsistent with EPA guidelines.

Comment: Minnkota states that EPA's actions disapproving the State's RPGs and imposing RP controls on MRYS lack a basis.

Response: EPA disagrees with this comment. First, as stated in the proposal, the disapproval of the State's RPGs is based on the State's failure to demonstrate that the RPGs the State selected are reasonable, based on the four statutory factors. In particular, the State's use of a degraded background in modeling for visibility benefits was unreasonable, as was the State's failure to select RP controls for AVS. Second, the commenter appears to misinterpret the statements made regarding MRYS Units 1 and 2 as proposing to impose RP controls on those units. In any case, the reference to controls on MRYS Units 1 and 2 is no longer relevant, because we have decided to approve North Dakota's NO_X BART determination for MRYS Units 1 and 2.

Comment: Minnkota states that EPA's action in disapproving the State's LTS is unreasonable and simplistic.

Response: EPA disagrees with this comment. The LTS is a compilation of the State-specific controls relied upon by the State for achieving its RPGs. We are disapproving the State's RPGs along with certain NO_X BART and RP determinations and promulgating a FIP to impose RPGs that are consistent with our FIP NO_X BART and RP determinations. To the extent that the State's LTS relies on these NO_X BART and RP determinations, we must also disapprove those portions of the LTS. Specifically, our partial disapproval of the State's LTS consists of two parts: (1) Disapproval of the LTS with regard to permit limits and monitoring, recordkeeping, and reporting

requirements in the State's submittal that correspond to the NO_X BART determinations we are disapproving; and (2) disapproval of the LTS with regard to the NO_X reasonable progress determination for AVS Units 1 and 2, and with regard to the corresponding monitoring, recordkeeping, and reporting requirements. The monitoring, recordkeeping, and reporting requirements for Antelope Valley are necessary to ensure that the emissions limitations and control measures to meet RPGs are enforceable. See 40 CFR 51.308(d)(3)(v)(F). In addition, these requirements are generally necessary to ensure the BART limits are enforceable. See CAA 110(a)(2). As these requirements are necessary adjuncts to the BART and RP limits, our disapproval of the State's requirements necessarily flows from our disapproval of the NO_X BART determinations for CCS Units 1 and 2 and the disapproval of the State's NO_X RP determination for AVS Units 1 and 2.

Comment: NDDH states that EPA incorrectly rejected NDDH's RP modeling methodology. NDDH believes that the methodology properly took into account effects of international sources, as provided for in the RHR. Furthermore, the hybrid methodology was, in NDDH's view, necessary to accurately simulate transport from large point sources.

Response: Our response to this comment is provided with our responses to modeling comments in section V.C.

Comment: NDDH states that its cumulative modeling methodology more accurately reflects the visibility improvements from controls at point sources.

Response: Our response to this comment is provided with our responses to modeling comments in section V.C.

Comment: NDDH notes that EPA supported the development of the WRAP cumulative modeling, which NDDH states involved considerable time and resources. NDDH argues that it is inappropriate to diminish this extensive effort by using what NDDH views as a less sophisticated and inconsistent single-source approach.

Response: EPA disagrees with this comment. As discussed elsewhere, single-source modeling is not ''less sophisticated'' or ''inconsistent.'' EPA supported development of WRAP CMAQ modeling in order to assist states in developing their RPGs. This support does not endorse the use of cumulative modeling to determine single-source impacts, a faulty approach for the reasons discussed above. As discussed below in responses to comments later in this section, NDDH's comment conflates the requirements for RPGs with the requirements for evaluating RP controls for single sources.

Comment: NDDH states that, on a dollar-per-ton-removed basis, LNB + SNCR appears to be reasonable for AVS. However, NDDH argues that its dollar-per-deciview evaluation of visibility benefits from installing LNB + SNCR at AVS shows that the cost is excessive.

Response: EPA disagrees with this comment, to the extent that it can be understood to argue against EPA's determination to impose LNB at AVS to meet reasonable progress requirements. The dollar-per-deciview cost that NDDH relies upon is faulty because, as discussed elsewhere, it relies on modeling using current degraded background that greatly underestimates the visibility improvement of single-source controls when compared to accepted methodology. It therefore provides no basis for determining that the cost of LNB + SNCR is excessive, or that the cost of LNB alone is excessive. Elsewhere, we have also discussed some of the difficulties with using dollar-per-deciview cost effectiveness values, and how care must be taken not to misinterpret such values. EPA does note that NDDH describes the dollar-per-ton cost of LNB + SNCR as reasonable. Using North Dakota's costs, LNB + SNCR has a cost-effectiveness value of $2,268 per ton removed at Unit 1 and $2,556 per ton removed at Unit 2. By comparison, LNB alone, using North Dakota's costs, has a cost-effectiveness value of $586 per ton removed at Unit 1 and $661 per ton removed at Unit 2. This indicates that LNB has a very reasonable cost effectiveness value on a dollar-per-ton-removed basis, the metric that is most widely used and understood in making control technology determinations.

Comment: NDDH references its CALPUFF modeling of visibility improvement at AVS from installation of LNB. NDDH states that this modeling was intended to show greater visibility improvement from installation of LNB on the two units at Antelope Valley as compared to installation of SCR at Leland Olds Station. NDDH argues that CALPUFF overpredicts visibility improvements and does not comply with 51.308(d)(1) and EPA's guidance.

Response: For reasons expressed elsewhere in this action, we disagree with North Dakota's argument that CALPUFF overpredicts visibility improvements. Our response to the argument that use of CALPUFF does not comply with 51.308(d)(1) and EPA guidance is provided with other responses in this section. While NDDH may have provided the CALPUFF modeling for another purpose, we find it informative. The CAA does not limit EPA in its action on a SIP submittal to considering materials only for the purpose for which the materials were originally intended. Instead, EPA may consider all relevant materials, including the CALPUFF modeling of visibility improvement from installation of LNB at AVS.

Comment: NDDH notes that even if all sources of SO_2 and NO_X in North Dakota were eliminated, North Dakota could not achieve the URP. North Dakota states that additional controls for AVS make almost no difference, and that additional controls on sources outside of North Dakota are necessary to achieve the URP.

Response: As we stated in our proposal, we agree that North Dakota could not achieve the URP in the first planning period even if all North Dakota sources were eliminated. We do not agree that this means that North Dakota can accordingly do nothing in the first planning period to address reasonable progress beyond addressing the BART requirements or that the State can reject otherwise reasonable control measures. EPA assumes that NDDH bases its statement regarding ''almost no difference'' on the modeling using current degraded background conditions. The CALPUFF modeling for AVS (separately provided by NDDH) predicts a visibility benefit at TRNP of 0.754 deciviews from installation of LNB, which EPA does not regard as ''almost no difference.'' Regardless of whether controls on sources outside of North Dakota are necessary in order to achieve natural visibility conditions by 2064, North Dakota is required to provide a reasoned analysis of RP controls on sources within the State. With respect to AVS, the State did not do so.

Comment: North Dakota states that, based on the definition of ''most impaired days'' and ''least impaired days'' in 51.301, and the requirement in 51.308(d)(1) that the RPGs provide for improvement in visibility for the most impaired days over the planning period and ensure no degradation in visibility for the least impaired days over the planning period, any RP visibility analysis must be a cumulative analysis and must address the most impaired days. NDDH states that it consistently modeled BART and RP sources. NDDH argues that, under the RHR and EPA guidance, progress with respect to the URP must be assessed using cumulative modeling based on the controls imposed on multiple sources. It would be

inconsistent with this approach, NDDH asserts, to use single-source modeling to determine improvements for the controls on an individual source.

Response: NDDH conflates (as it does in the next comment and elsewhere, and as do other commenters) the reasonable progress requirements for RPGs and for determination of controls for a single source. The RPGs must provide for improvement in visibility for the most impaired days over the planning period and ensure no degradation in visibility for the least impaired days over the planning period. In evaluating whether the overall RPGs provide for improvement in visibility for the most impaired days, it is not only appropriate, but necessary, to employ current degraded background in cumulative visibility modeling. This allows a comparison of the impact of the State's proposed overall set of regional haze controls against the baseline ''most impaired days.''

We disagree, however, that it is appropriate to analyze and reject potential control measures at specific sources based on modeling using current degraded background conditions. Distinct from the requirement to show that the overall RPGs provide for improvement on the most impaired days, it was incumbent on North Dakota to show that the URP is not a reasonable goal for this planning period and that its RPGs and rejection of reasonable progress controls was reasonable. Just because a state has met the requirement to show improvement on the most impaired days does not mean it has met this separate requirement. Our regulations require that this showing be based on the four statutory reasonable progress factors: The costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected sources. 40 CFR 51.308(d)(1)(ii). We must determine whether the State's showing based on the four factors is reasonable. 40 CFR 51.308(d)(1)(iii).

Here, it is worth noting the process North Dakota used to evaluate potential reasonable progress controls. North Dakota employed certain screening tools to identify sources in North Dakota that potentially affect visibility in Class I areas. It focused mainly on point sources, starting with the list of sources subject to Title V permitting requirements. It further pared this list by focusing on the ratio of emissions to distance to the nearest Class I area, known as Q/D. A Q/D value of 10 was chosen as a threshold. North Dakota chose this value based on FLM guidance and the State's interpretation of statements in EPA's BART guidelines as to sources that could reasonably be exempted from the BART review process; *i.e.,* for a state with a BART contribution threshold of 0.5 deciviews, sources emitting less than 500 tons per year located more than 50 kilometers from a Class I area or emitting less than 1000 tons per year located more than 100 kilometers from a Class I area.[64] We note that North Dakota selected 0.5 deciviews as its contribution threshold for determining which sources are subject to BART.

North Dakota eliminated any source with a Q/D less than 10 from further consideration for reasonable progress controls. Then, North Dakota eliminated several sources with a Q/D over 10 that, as a result of events after the 2000 to 2004 baseline period, had reduced emissions sufficiently so that the sources' Q/D became less than 10. After this paring, seven units remained. We note that four of the remaining seven units are EGUs, and three of them are comparable in size and emissions to some of the largest BART sources in North Dakota.

For these seven remaining units only, North Dakota considered the four statutory reasonable progress factors in evaluating potential control technologies for reducing SO_2 and NO_X emissions. However, when it eliminated all reasonable progress controls for these pollutants for these units, North Dakota relied almost exclusively on its cumulative modeling, using current degraded background to conclude that the cost on a dollar per deciview basis was excessive.[65]

As noted in a prior response, we conclude that it was not reasonable for North Dakota to model visibility improvement for potential individual source reasonable progress controls using current degraded background. As explained, we conclude that the State's approach is inconsistent with the CAA. We also note that the State's use of current degraded background to analyze single-source controls is facially inconsistent with the Q/D threshold it used to determine which sources should be retained for a detailed evaluation of reasonable progress controls. As noted, the State selected a Q/D of 10 based in part on EPA BART guidance on sources that could be considered to contribute to visibility impairment. That guidance relied on a contribution threshold of 0.5 deciviews, which was premised on CALPUFF modeling using natural background. By modeling single-source impacts and benefits using current degraded background, North Dakota employed a completely different metric that rendered meaningless its Q/D threshold and subsequent analysis of the four factors.[66]

Comment: NDDH notes that EPA's guidance, ''Additional Regional Haze Questions,'' dated August 24, 2006, states that the RP demonstration involves a test of a strategy and how much progress is made through that strategy. NDDH also notes that the guidance states that RP modeling is tied to a strategy and is not a source-specific demonstration like the BART assessment. NDDH asserts that EPA's rejection of the North Dakota cumulative modeling for single source visibility benefits arbitrarily ignores this guidance.

Response: We find that this comment, like the previous comment, conflates two separate aspects of reasonable progress: (1) The manner in which the overall strategy is modeled for purposes of comparison to the URP, and (2) the determination of controls for potentially affected sources and source categories. In the latter context, we conclude that our interpretation is reasonable and that the State's consideration of visibility improvement based on current degraded visibility was unreasonable.

First, we have refined our guidance and our views on reasonable progress since the cited document was issued. In 2007, we issued formal reasonable progress guidance, which clearly contemplates that controls may be evaluated on a source-specific basis.[67] It is difficult to imagine how the reasonableness of a control strategy involving large stationary sources could be determined without considering the reasonableness of controls for the specific stationary sources. Second, the comment ignores the fact that North Dakota itself conducted a source-specific analysis of potential control options using the four factors.[68] It was only when it considered the additional factor—visibility—that North Dakota switched to a cumulative analysis. Third, the commenter ignores the cited guidance's repeated admonition that reasonable controls based on the four

[64] The ratios of these values equal a Q/D of 10.

[65] Further detail regarding North Dakota's analysis can be found in our proposal. 76 FR 58624–58628.

[66] We note that AVS 1 and 2 had Q/D values exceeding 100, and Coyote had a Q/D value of 248, all far above the threshold Q/D value.

[67] We note that guidance is not binding on EPA and does not supersede relevant statutory and regulatory requirements.

[68] We note that other states—for example, Colorado—have also considered reasonable progress control options on a source-specific basis and that we intend to do so in our FIP for Montana for regional haze.

statutory factors (which don't include visibility improvement) must be included in the plan. Thus, for example, the guidance states:

> ''However, the statutory factors must be applied before determining whether given emission reduction measures are reasonable. In particular, the State should adopt a rate of progress greater than the glidepath if this is found to be reasonable according to the statutory factors.''

Guidance at 9. Similarly, the guidance states:

> ''If after applying the four statutory reasonable progress factors, the rate of visibility improvement is still less than the uniform glide path, States may adopt the calculated RPGs, provided that they explain in the SIP how achieving the uniform glide path is not reasonable based on the application of the factors. States must demonstrate why the slower rate is reasonable * * *''

Guidance at 8–9.

Comment: Basin Electric states that EPA has no statutory authority to compel installation of LNB at AVS. Basin Electric argues that the regional haze program applies only to sources in existence before 1977, and that sources constructed after that date are subject only to the PSD permitting program. Basin Electric concludes that EPA cannot impose retrofit requirements on a source such as Antelope Valley that has already been subject to the PSD permitting program.

Response: EPA disagrees with this comment. First, the requirements established in the RHR provide no basis for the commenter's argument, as reasonable progress requirements are clearly not limited to sources in existence before 1977. In particular, section 51.308(d)(1)(i)(A) requires consideration of the four statutory factors for ''potentially affected sources,'' a term not limited to sources in existence before 1977, and also requires a demonstration showing how the four statutory factors were taken into consideration. Section 51.308(d)(1)(iii) requires the Administrator to evaluate this demonstration, explicit authority for the action we are finalizing. Finally, section 51.308(d)(3) requires that a state, in developing its LTS to achieve the RPGs, consider ''major and minor stationary sources,'' a term again not limited to sources in existence before 1977.

Nor does the CAA itself provide any basis for the commenter's argument. The comment is in error in suggesting that the existence of requirements regarding visibility under the PSD permitting program necessarily implies that section 169A of the CAA cannot apply to sources subject to the PSD permitting program. As a general matter, it is well understood that the CAA frequently imposes overlapping requirements on sources. Nothing in Subpart I of Part C of Title I of the CAA, which provides for the PSD permitting program, indicates that sources subject to the PSD permitting program are somehow excluded from the requirements of Subpart II. Similarly, nothing in EPA's rules giving the minimum requirements for a state's PSD permit program at 40 CFR 51.166 or the federal PSD permit program at 52.21 supports the notion that sources subject to the PSD permit program are excluded from the requirements of Subpart II.

Furthermore, any reasonable reading of CAA section 169A reveals that Congress did not limit the requirements to achieve reasonable progress to BART and PSD sources. Congress required EPA to promulgate regulations to:

> ''require each applicable implementation plan for a State in which any area listed by the Administrator under subsection (a)(2) of this section is located * * * to contain such emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national goal specified in subsection (a) of this section, including [BART].''

There is nothing in this language to suggest that Congress intended to exempt sources constructed after 1977, or to exempt sources subject to the PSD permitting program.

The commenter argues that CAA section 169A(g)(1) supports its view, claiming that ''Section 169A(g)(1) defines the criteria to be employed in determining reasonable progress, but limits the application of that criteria to 'any existing source.' '' The commenter interprets this term to mean sources constructed before 1977, but does not explain how reasonable progress toward the national goal of remedying existing impairment of visibility could continue to be made under the commenter's interpretation. Instead, the statute and our rules contemplate a periodic, continuing assessment of reasonable progress, including assessment of the four statutory factors for existing sources at the time of assessment. Thus, our regional haze regulations reflect a different interpretation—instead of ''any existing source,'' section 51.308(d)(1)(i)(A) refers to ''potentially affected sources.'' As discussed above, there is no suggestion that we intended to limit this to only mean sources constructed after 1977, and it is too late for the commenter to challenge our regional haze regulations now. Thus, the commenter's parsing of the statutory language and the legislative history is irrelevant. Furthermore, EPA's reports to Congress and other sources cited by the commenter do not reflect our interpretation of the RHR and therefore have no regulatory weight.

Comment: Basin Electric states that, under the RHR, if a state proposes an RPG that doesn't meet the URP, all the state has to do is explain why meeting the URP isn't reasonable.

Response: This comment understates the requirements of the RHR. If a state establishes an RPG that does not meet the URP, the state must demonstrate, on the basis of the four RP factors, that (1) meeting the URP isn't reasonable; and (2) the RPG adopted by the state is reasonable. The commenter's statement ignores the requirement to consider the four RP factors and to show that the RPG is reasonable. EPA therefore disagrees with the statement.

Comment: Basin Electric argues that no state has full control over its RPGs, because visibility improvements depend largely on reductions from other states.

Response: Even if visibility impacts to an in-state Class I area are largely due to sources in other states, each state is nonetheless obliged to make RP determinations for in-state sources based on a reasonable analysis of the four statutory factors. In this case, NDDH's reliance on current degraded background modeling as an additional factor was unreasonable. Thus, Basin Electric's argument gives no basis for EPA to change its disapproval of the State's RPGs or the NO_X RP determination for AVS.

Comment: Basin Electric states that visibility improvement cannot be ignored in the RP four-factor analysis.

Response: As we have noted, the four RP factors are the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected sources. As we have also noted, when visibility benefits are considered in the analysis of potential single-source controls, such consideration must be reasonable. In this case, NDDH unreasonably relied on modeling using current degraded background to reject RP controls for AVS. Finally, in imposing LNB to meet reasonable progress requirements, EPA has considered visibility improvement, which, as shown by the CALPUFF modeling provided by NDDH, is 0.754 deciviews at TRNP for installation of LNB at AVS.

Comment: Basin Electric states that EPA's disapproval of North Dakota's RP determination for AVS is based solely on EPA's rejection of the State's use of a degraded background in modeling.

Response: The basis for our disapproval is fully explained in our proposal. 76 FR 58627, 58629–58630. We did not rely solely on the State's use of improper modeling. We note that, despite the State's flawed use of current degraded background modeling, we nonetheless approved several of the State's other reasonable progress determinations based on our consideration of the statutory reasonable progress factors.

Comment: Basin Electric argues that the dollar per deciview benefit of LNB + SNCR at AVS, computed using North Dakota's modeling, is much higher than that some FLMs have found acceptable. Basin Electric states that EPA does not object to the use of dollar per deciview in making an RP determination. Instead, EPA objects only to the modeling itself.

Response: EPA guidance indicates that it may be reasonable to evaluate the dollar per deciview value in appropriate circumstances. However, EPA has not established a threshold, required or recommended, below which such value is considered reasonable and above which it is considered unreasonable. Nor have we endorsed or accepted any values the FLMs may have found acceptable. Under our regulations, we determine whether a state's rejection of reasonable progress controls is reasonable based on the reasonable progress factors. We have explained in response to other comments why North Dakota's modeling using current degraded background and dollar per deciview values based on that modeling are not reasonable. In addition, EPA is imposing only LNB, not LNB + SNCR, at AVS. Thus, the dollar per deciview benefit of LNB + SNCR is not directly relevant. We provide further detail regarding use of dollars per deciview values in our response to prior comments.

Comment: Basin Electric states that EPA has no basis to disregard the State's cumulative modeling of visibility improvements at AVS. Basin Electric argues that the reasoning for using degraded background conditions in BART modeling applies equally to RP modeling, because the horizon for RP sources is 2018 (similar to the five-year horizon for BART).

Response: As noted elsewhere, the reasoning for using current degraded background conditions in BART modeling is faulty. That reasoning therefore gives no basis for using current degraded background conditions in RP modeling.

Comment: Basin Electric states that EPA admits that there is no requirement that states, when performing RP analysis, follow the modeling procedures set out in the BART guidelines. Basin Electric states that EPA does not cite any statute or rule that the North Dakota RP modeling violates.

Response: As we have noted, our regulations require consideration of four factors in reasonable progress determinations; visibility improvement is not one of the specified factors. As we have indicated, when a state considers visibility improvement as an additional factor in evaluating single-source control options, that consideration must be reasonable in light of the explicit goals established by Congress in CAA section 169A.

Comment: Basin Electric states that EPA is in error in asserting that North Dakota modeled BART sources one way and RP sources another way. Basin Electric argues that even if EPA is correct, there is no authority that requires the State to model BART and RP sources the same way.

Response: We disagree with the commenter. North Dakota relied on CALPUFF modeling using natural background for almost all BART sources. The only exceptions were MRYS 1 and 2 and LOS 2, and then only for NO_X. We explained in our proposal why North Dakota's alternative modeling for these BART units for NO_X was unreasonable. Despite the similarity of several of the reasonable progress units to the BART units, North Dakota modeled visibility improvement for potential control options on individual reasonable progress sources using current degraded background. We have explained in our other responses and in our proposal why this was unreasonable.

Comment: Basin Electric argues that states have the responsibility to set RPGs and evaluate RP controls. Basin Electric states that nothing prohibits the State from using degraded background conditions.

Response: For the reasons already expressed, we disagree with the import of this comment. We agree that the states have the responsibility to set RPGs and evaluate RP controls in the first instance, but EPA must determine if a state's determinations for RPGs and for controls satisfy the requirements of the RHR and are reasonable. In the case of AVS 1 and 2, the State's determination was unreasonable.

Comment: Basin Electric argues that, in considering the CALPUFF modeling results for AVS, EPA should use the 90th percentile values, not the 98th percentile values, and should use the three year average, not the worst-case year.

Response: For the same reasons expressed in our responses to similar comments related to BART in section V.C, we disagree.

Comment: Basin Electric argues that the case for using 90th percentile values is stronger for RP, as RP is determined based on improvement for the most impaired days, which is defined as the average impairment for the 20% of days with the highest impairment. Basin Electric states that use of the 98th percentile is inconsistent with this provision.

Response: EPA disagrees with this comment, which conflates and misstates requirements of the RHR. Reasonable progress is not ''determined'' based on improvement for the most impaired days; instead, improvement for the most impaired days is one, and not the only, requirement for reasonable progress. Separately, states are required to evaluate, considering the four statutory RP factors, controls for potentially affected sources. In this separate determination, when a state considers visibility benefits as an additional factor, a state's assessment and analysis of visibility benefits must be reasonable. Use of the 90th percentile, which seriously understates visibility benefits, is unreasonable, and cannot be justified by reference to the separate requirement regarding the most impaired days.

Comment: Basin Electric notes that EPA evaluated the cost of controls for AVS Units 1 and 2 separately, but evaluated the visibility benefits combined. Basin Electric argues that this is an invalid, apples-to-oranges comparison.

Response: Given that AVS 1 and 2 are the same size and are co-located, and reductions would be similar from each, we do not agree that it is invalid to consider the combined visibility benefits. There is no requirement, when considering visibility benefits as an additional factor, to separately model co-located and similar units. Furthermore, dollar-per-ton values would not change significantly if costs were evaluated for the two units combined. Finally, EPA notes that, even if the visibility benefits were evenly divided between the two units, EPA would still consider LNB appropriate at each unit, based on the four statutory factors and the additional factor of visibility benefits.

Comment: Basin Electric references additional modeling, provided by Basin Electric, that shows that the visibility benefits (using 90th percentile, three-year average, and a receptor-by-receptor approach) for LNB at AVS Units 1 and 2 combined is 0.07 deciviews. Divided between the units equally, this would be

0.035 deciviews. Basin Electric argues that these improvements do not support imposing LNB, especially when the dollars per deciview improvement is considered.

Response: As discussed elsewhere, we find it reasonable to use the 98th percentile, worst-of-three-year modeled benefit over all receptors. The use of the 90th percentile, the three-year average, and the receptor-by-receptor approach understates the visibility benefits of controls. As a result, the dollar-per-deciview value computed using that approach, found in Table 8 of Basin Electric's comments and from which Basin Electric derives the 0.07 deciview figure, is not reasonable or persuasive.

Comment: Basin Electric argues that EPA's justification for disapproving North Dakota's RPGs is insufficient. Basin Electric asserts that, even if EPA is correctly determining BART and RP limits for the individual facilities, EPA must provide some additional basis for disapproving the RPGs, such as: (1) North Dakota is not providing for improvement for the worst 20% days; or (2) North Dakota is not ensuring no further degradation for the best 20% days. Basin Electric also notes that EPA did not assess how far short (presumably quantitatively) North Dakota's selected goals fall from reasonable progress.

Response: EPA disagrees with this comment. The bases suggested by Basin Electric as necessary for disapproval (improvement for the worst 20% days and no further degradation for the best 20% days) are requirements of the RHR, but they are not the only requirements. As noted in the proposal, if a state's RPGs do not meet the URP, the state must demonstrate that the RPGs are reasonable, based on consideration of the four statutory factors, and that meeting the URP is unreasonable. The State's failure to satisfy this requirement (and not the requirements noted by the commenter) is the basis for the disapproval of the State's RPGs. In particular, the State's use of current degraded background in modeling for visibility benefits was unreasonable, as was the State's failure to select reasonable RP controls for AVS Units 1 and 2. It is unnecessary to quantify how far short North Dakota's selected goals fall from the RPGs proposed by EPA in order to determine that the State's analysis was unreasonable. Nonetheless, EPA notes that the proposed NO_X RP limit, based on installation of LNB, for AVS Units 1 and 2 will result in combined emissions reductions of over 7,000 tons per year of NO_X, with a visibility benefit of 0.754 deciviews at TRNP. Due to time and resource constraints, we lacked the capability to re-do the WRAP modeling to precisely re-calculate the RPGs.

Comment: Basin Electric states that the values for cost effectiveness of LNB at AVS Units 1 and 2 do not reflect up-to-date costs, which would be higher. However, Basin Electric specifically disclaims that up-to-date costs, standing alone, would provide a sufficient reason to reject LNB.

Response: In its FIP, EPA is relying in part on costs provided by North Dakota in its RH SIP to meet the requirements of the RHR. In promulgating the FIP, it is not necessary to regenerate the costs for AVS 1 and 2. Nonetheless, EPA agrees that regenerated costs for LNB at AVS Units 1 and 2 would likely support EPA's determination. LNB is a widely used, inexpensive control option to reduce NO_X emissions.

Comment: Citing 40 CFR 51.308(d), Basin Electric states that EPA does not propose a true FIP for RPGs, because RPGs are defined by rule as a rate of visibility improvement. Basin Electric alleges that rerunning the WRAP CMAQ modeling with the controls imposed to quantify the rate of improvement would cost a modest amount of money, and states that this amount of money should be contrasted with the cost of controls that will, according to Basin Electric, result in negligible visibility improvements.

Response: As discussed elsewhere, the visibility improvements from AVS alone will not be negligible, as shown by the CALPUFF modeling provided by North Dakota, and even the CALPUFF modeling provided by Basin Electric with its comments. We assume Basin Electric bases its statement about negligible visibility improvements on the modeling using current degraded background relied on by North Dakota, which, as discussed elsewhere, we are disregarding. As discussed in the notice of proposed action, we would have preferred to quantify the rate of improvement, but time and resource constraints prevented this. Re-running the WRAP CMAQ modeling would not change our conclusion about the reasonableness of LNB at AVS 1 and 2.

Comment: Basin Electric states that, without modeling, there is no basis for EPA to state that our FIP would increase the rate of visibility improvement on the 20% worst days. Basin Electric asserts that emissions reductions from the FIP sources are miniscule compared with the total reductions assumed in the WRAP CMAQ modeling for RPGs. Basin Electric notes that that modeling showed an overall 0.6 deciview improvement at TRNP and a 0.5 deciview improvement at LWA.

Response: It is logical to infer that the considerable emissions reductions at CCS and AVS will increase the visibility improvement on the 20% worst days. We acknowledged in our proposal that this improvement would not be sufficient to achieve the URP (76 FR 58632) and agree that the improvement will likely be small given that the starting point for the cited modeling is current degraded conditions. But the same could be said for BART sources, yet North Dakota has acknowledged that such sources contribute to visibility impairment in the Class I areas in North Dakota.

Comment: Basin Electric states that the disapproval of North Dakota's RPGs and our FIP have no meaningful effect.

Response: As we stated in our proposal, the RPGs are not enforceable values. To that extent, they do not impose requirements on anyone. However, we are required to disapprove the RPGs because they do not reflect reasonable controls at CCS and AVS, and we are required to impose a FIP in lieu of the State's unapprovable RPGs. Our reasonable progress controls at AVS and our BART controls at CCS do impose enforceable requirements.

Comment: Basin Electric asserts that, because EPA has no basis for our disapprovals and FIPs at individual facilities, EPA also has no basis for our FIP for RPGs.

Response: See our responses to prior comments. We have explained the bases for our disapprovals.

Comment: NPCA comments that it is unreasonable for EPA to give Basin Electric until July 31, 2018 to install LNB at Antelope Valley because that date is not ''as expeditious as possible.'' NPCA states that the deadline should be January 26, 2013, which NPCA believes represents a reasonable amount of time to install the combustion controls.

Response: EPA disagrees with this comment. First, unlike for BART sources, the RHR and the CAA do not explicitly require that limits for RP sources be met as expeditiously as practicable. Furthermore, the commenter misstates the deadline: The proposed FIP requires Basin Electric to meet the proposed NO_X emissions limit at Antelope Valley ''as expeditiously as practicable, but in any event no later than July 31, 2018.'' Thus, Basin Electric is under an obligation to install the combustion controls as expeditiously as practicable. The cutoff date of July 31, 2018 ensures that the RP limit for Antelope Valley is met by the end of the planning period, thereby also ensuring that the proposed RPGs are met.

Comment: NPCA states that EPA should reevaluate the cost estimate for

SCR + reheat at AVS. NPCA argues that North Dakota's cost estimate is flawed in the same way as for LOS 2 and MRYS 2. EPA proposed to disapprove the costs for Leland Olds Unit 2; NPCA argues that EPA therefore cannot rely on the same costs in determining RP controls for Antelope Valley.

Response: While EPA agrees that the cost estimates for SCR at LOS 2 and MRYS 2 are flawed, the costs for AVS nonetheless present a sufficient basis for EPA's RP determination. EPA accepts, and NPCA does not question, the costs for LNB alone. Even if the cost estimate for SCR + reheat was redone, it would likely remain considerably more costly than LNB. LNB is very cost-effective and achieves reductions of about 78% of SNCR + LNB and 64% of SCR with reheat. Given the extreme cost-effectiveness of LNB and reductions of at least 64% of more expensive controls, and taking into account the four statutory factors as well as visibility benefits of LNB, EPA has determined that it is reasonable to impose LNB at Antelope Valley in this planning period. Of course, the imposition of LNB at AVS does not rule out the imposition of post-combustion controls in the next planning period.

Comment: NPCA states that North Dakota's cost estimates for SCR + reheat and ASOFA + SCR + reheat at Coyote Station are flawed. NPCA argues that EPA should redo the RP analysis for Coyote, and that a revised RP four-factor analysis would show that SCR + reheat is reasonable. In addition, NPCA notes that the facility is fairly close to TRNP, the State cannot meet the URP, and SCR + reheat would reduce emissions by over 10,000 tpy.

The NPS states similar concerns with North Dakota's use of inappropriate dollar per deciview estimates as a basis for determining that no additional controls were appropriate under RP for Coyote Station. NPS notes that EPA has recognized that the methods North Dakota used to reach that conclusion, both for estimating costs and visibility improvement, are invalid. NPS infers that North Dakota has not met its responsibility to conduct a valid RP analysis and that EPA must therefore assume that responsibility. An NPS analysis indicates SCR at Coyote would be more cost effective than at any other North Dakota EGU. NPS concludes that EPA must impose an RP emissions limit for Coyote of 0.07 lb/MMBtu (the same as for MRYS 1 and 2, and LOS 2).

Response: EPA has now decided that the rejection of SCR at Coyote is appropriate regardless of the State's cost analysis, based on the court's upholding of North Dakota's determination in the BACT proceeding for MRYS that SCR is technically infeasible. Like MRYS, Coyote is a cyclone unit burning North Dakota lignite. Thus, based on current evidence, we cannot conclude that North Dakota's rejection of SCR at Coyote was unreasonable.

Comment: NPCA states that the record shows that a wet scrubber would be cost effective at Coyote Station, and believes that the actual cost effectiveness may be better. NPCA computes that a 99% efficient wet scrubber would remove about 13,000 tons per year of SO_2. The cost overestimates made by other facilities indicate that EPA should revisit this cost analysis.

Response: EPA disagrees with this comment. First, NPCA did not identify any cost overestimates related to wet scrubbers. The issues EPA identified in its proposal related to costs of SCR, which provides no basis for inferring cost overestimates for wet scrubbers. As far as the record, Table 9.8 in North Dakota's RH SIP submittal shows a cost effectiveness value of $2,593 per ton of SO_2 removed at a control efficiency of 95%. As stated in our proposal, while this value is within the range of cost effectiveness values that North Dakota, other states, and we have considered reasonable in the BART context, it is not so low that we are prepared to disapprove the State's conclusion in the reasonable progress context. In addition, Coyote Station currently employs a spray dryer to control SO_2 emissions at a control efficiency of approximately 66%. The existence of this control supports our approval of the State's determination. Analogous to our policy in the BART context, we do not expect sources to install entirely new SO_2 controls where they are already achieving reductions greater than 50%.

Comment: NPCA notes EPA's response to a petition from the Dakota Resource Council regarding violations of PSD Class I SO_2 increments, in which EPA stated that a SIP call would not achieve any better result than other pending actions, including regional haze actions. NPCA argues that, based on this response, EPA should require SO_2 controls at Coyote Station to reduce consumed Class I SO_2 increment.

Response: EPA disagrees with this comment. As discussed extensively in our response to a prior comment, PSD permit program requirements in Subpart I, Part C of title I of the CAA are separate from visibility protection requirements in Subpart II of Part C. Therefore, Class I SO_2 increments are not relevant to our action on North Dakota's RH SIP submittal to meet the requirements of CAA section 169A and the RHR. Nonetheless, EPA notes that SO_2 emissions will be substantially reduced by our action on the North Dakota RH SIP, as detailed in Table 21 of our notice proposing action.

Comment: NPCA argues that limestone injection at Heskett Station is a cost effective and reasonable RP control that would achieve SO_2 reductions of 1614 tons per year. However, NPCA notes that the agreement between North Dakota and the facility only requires reductions of 573 tons per year of SO_2. NPCA concludes that EPA should require Heskett to achieve an SO_2 limit that reflects the capabilities of limestone injection.

Response: EPA considers the State's determination to impose the stated reductions in the permit included in SIP Supplement No. 1 to be reasonable and to satisfy reasonable progress requirements in this initial planning period. Further reductions may be appropriate in a subsequent planning period.

Comment: NPCA argues that staged combustion is a cost effective control for NO_X at Heskett Station at $1,700/ton. Even though the emission reduction is only 215 tons per year, NPCA argues that EPA must consider all potential sources that can contribute to achieving RPGs, including NO_X reductions from Heskett Station.

Response: EPA disagrees with this comment. In the first instance, it is the responsibility of the State to consider the four statutory factors for potentially affected sources. EPA's task is to determine if the State's analysis of controls satisfies the requirements of the RHR and is reasonable. In this case, the State did consider the four statutory factors, as well as an additional factor—visibility improvement based on modeling using current degraded background. While EPA does not consider the State's use of modeling based on current degraded background reasonable, EPA nonetheless considers the result of the State's analysis in this instance to be reasonable, based on the relatively low emissions reductions and the costs of controls.

Comment: NPCA states that several NO_X control options for Tioga Gas Plant are cost effective, with the lowest at $521/ton. Although the emissions reductions are lower, NPCA argues that EPA should consider all potential sources that can contribute to achieving RPGs. In addition, NPCA notes that the facility is only 35 km from LWA and is also near TRNP.

Response: EPA disagrees with this comment for the same reasons discussed in response to the prior comment.

Comment: NPCA states that EPA should re-run the WRAP CMAQ modeling with emissions that reflect the BART and RP controls that EPA proposes to approve or impose through a FIP. NPCA argues that EPA and the State should track actual visibility improvements versus projected visibility improvements, and that this would assist in estimating visibility improvements from other measures.

Response: As stated in our notice of proposed action, we could not re-run the WRAP modeling due to time and resource constraints. We expect the State to quantify the visibility improvement in its next RH SIP revision.

Comment: The NPS stated that North Dakota did not meet its responsibility to perform a valid RP analysis, as the State's cost analysis and modeling for RP sources were flawed. Although the NPS stated that this was a general issue, the comment specifically noted flaws in the State's cost analysis for Coyote Station. The NPS argued that EPA must redo the analysis, and cannot propose to approve any RP determinations.

Response: EPA disagrees with the conclusion of this comment. Although EPA agrees that the State's cost analysis for SCR at Coyote Station was flawed, and that the State's modeling of visibility benefits of controls on RP sources using degraded background conditions was flawed, there is a sufficient basis for EPA's actions. As noted in a prior response, EPA has now decided that the rejection of SCR at Coyote is appropriate regardless of the State's cost analysis, based on the court's upholding of North Dakota's determination in the BACT proceeding for MRYS that SCR is technically infeasible. Like MRYS, Coyote is a cyclone unit burning North Dakota lignite.

As noted, with respect to other reasonable progress units, we have disregarded the State's visibility analysis in our review of the State's reasonable progress determinations and instead focused on the four reasonable progress factors. Except for AVS 1 and 2, we have determined that the State's reasonable progress determinations were not unreasonable.

Comment: The NPS stated that the RP analysis of SCR for Coyote Station was cursory. The NPS noted that, under the 0.50 lb/MMBtu annual rate agreed to by the State, Coyote Station would still have the highest controlled emissions rate of any EGU in North Dakota and would be the 13th largest emitter of NO_X among all EGUs, using 2010 rates in the Clean Air Markets Division database. NPS argues that, as a result, SCR should have been given more consideration.

Response: First, EPA disagrees with some of the NPS computations. Based on 2010 Clean Air Markets Division data, Coyote Station was the 124th largest emitter of NO_X among EGUs at 13,691 tons. At the rate of 0.50 lb/MMBtu agreed to by the State, the emissions (with the same heat input) would have been 8,800 tons, which would have made Coyote Station the 183rd largest emitter of NO_X for that year. This represents a reduction of over 4,800 tons per year. In any case, the relative rank of a facility among other facilities nationwide in overall emissions is not a necessary component of the RP analysis.

We have already explained why we are not disapproving the State's rejection of SCR at Coyote.

Comment: The NPS noted that the RP analysis for Coyote Station did not consider upgrades to the existing dry scrubber.

Response: In making an RP determination, the State must consider a reasonable range of controls. For SO_2, the State considered a new wet scrubber. While EPA agrees that upgrades to the existing dry scrubber should have been considered, starting with feasibility, EPA is not prepared to determine, on the basis of this consideration, that the State was unreasonable in addressing RP requirements for Coyote Station through imposing the 0.50 lb/MMBtu NO_X limit and not imposing an SO_2 limit. EPA does expect the State to revisit the range of controls in the next planning period.

Comment: NPS provided cost estimates for installation of SCR at Coyote Station, showing a cost effectiveness value of $1,600 per ton removed and an incremental cost effectiveness value of $2,300 per ton removed. NPS stated that these costs are lower than those for SCR at LOS 2 and MRYS 1 and 2. NPS argued that, for consistency, EPA must impose SCR at Coyote Station.

Response: The basis for our decision regarding the State's rejection of SCR at Coyote is explained in prior responses.

H. Comments on Health and Ecosystem Benefits, and Other Pollutants

Comment: Several commenters stated that haze pollution significantly impacts human health and ecosystem health, in addition to obscuring scenic vistas. Specifically, commenters asserted that haze pollution contributes to heart attacks, asthma attacks, chronic bronchitis and respiratory illness, increased hospital admissions, lost work days, and even premature death. One commenter noted the specific haze pollutants NO_X, SO_2 and PM, which the commenter stated are all harmful to the human body.

Some commenters cited a 2009 Clean Air Task Force report in stating that coal-fired power plants in North Dakota put 207 people at risk of premature death, 321 people at risk of a heart attack, and 3,500 at risk of an asthma attack each year. Several commenters encouraged EPA to finalize the regional haze proposal citing their own health problems, most notably individuals with asthma or respiratory problems, seniors, and parents of asthmatic children. One commenter stated the rate of asthma in North Dakota children is increasing rapidly.

Some commenters stated that haze pollution negatively impacts ecosystem health. Commenters expressed concern for the effects of haze pollution on wildlife, farm animals, plants including crops, and water bodies. Several commenters generally expressed their disapproval of coal as an energy source because it is dirty, with some insisting that North Dakota invest in cleaner energy.

Response: We appreciate the commenters' concerns regarding the negative health impacts of emissions from the coal-fired power plants in North Dakota. We agree that the same $PM_{2.5}$ emissions that cause visibility impairment can be inhaled deep into lungs, which can cause respiratory problems, decreased lung function, aggravated asthma, bronchitis, and premature death. We also agree that the same NO_X emissions that cause visibility impairment also contribute to the formation of ground-level ozone, which has been linked with respiratory problems, aggravated asthma, and even permanent lung damage. We agree that these pollutants can have negative impacts on plants and ecosystems, damaging plants, trees and other vegetation, and reducing forest growth and crop yields, which could have a negative effect on species diversity in ecosystems. However, for purposes of this action, we are not authorized to consider these impacts in evaluating the State's RH SIP and promulgating our FIP, and we have not done so.

Comment: Some commenters stated that regional haze is not a health-based standard.

Response: We agree that regional haze is not a health-based standard.

I. Miscellaneous Comments

Comment: Several commenters stated that the large economic costs of installing pollution controls stated by electricity providers failed to consider

the significant offsets of those costs. One commenter stated that TRNP is an economic engine, further stating that the park logged over 580,000 recreational visits, was responsible for 500 jobs and $27.4 million in expenditures in 2009 alone. Another commenter stated that, while the installation of pollution controls costs money, it also stimulates the economy by providing jobs in construction and installation. Others stated a willingness to pay the expected increase in their utility costs, with one commenter stating that North Dakota's electricity is amongst the least expensive in the U.S.

Response: We agree with the comments. Although we did not consider the potential positive benefits to the local and national economies in making our decision today, we do expect that improved visibility would have a positive impact on tourism-dependent local economies. Also, retrofitting CCS with SNCR is a large construction project that we expect to take 5 years to complete. This project, along with the other pollution control upgrades proposed in the SIP, will require well-paid, skilled labor which can potentially be drawn from the local area, which is expected to benefit the economy.

Comment: Multiple commenters stated that North Dakota is one of only 12 states in the U.S. who meet all NAAQS.

Response: While the relative air quality in North Dakota is considered good compared to many other states, as further discussed elsewhere in our responses, our actions pertaining to the RHR are governed by the national visibility goal established by Congress in the CAA. The goal is to return the visibility conditions in Class I areas back to natural conditions. And visibility in Class I areas in North Dakota is impaired by pollution from industrial sources within the state. There is no direct correlation between natural visibility conditions and the current NAAQS.

Comment: Several commenters stated that the American Lung Association ranked Mercer County, North Dakota, home to several coal-fired power plants, as one of the 25 cleanest counties in the U.S., and ranked Billings County, North Dakota, home to TRNP, the third cleanest county in the United States.

Response: The commenters are referring to the 2010 State of the Air Report, which assigns letter grades for counties with air quality monitors for ozone and particulate pollution.[69] The report, issued every year by the American Lung Association, did give the mentioned counties an ''A'' grade in 2010 for ground level ozone. The State of the Air Report does not, however, address regional haze. The RHR relies on a combination of monitoring data to assess current visibility conditions and modeling of predicted visibility impacts at federal Class I areas (primarily national parks and wilderness areas), which is a different methodology than direct measurement of ozone and particulate pollution, which is the approach relied on by the American Lung Association. Current visibility impacts at TRNP and LWA are over double the impacts estimated for natural conditions, and North Dakota's Class I areas are not projected to meet the URP in the initial planning period.

Comment: Commenter cited the NPS's Web page for TRNP, which states that the park has better air quality than every other U.S. national park aside from Denali National Park in Alaska.

Response: In our action, we are responding to the national visibility goal established by Congress in the CAA. The goal is to return to natural visibility conditions. TRNP is not meeting the URP for returning the park to natural visibility conditions. The NPS' Web page for TRNP does state that air quality is relatively good, but it also discusses the fact that pollution sometimes causes haze and may affect other sensitive resources in the park. For current information on TRNP's air quality visit *http://www.nps.gov/thro/naturescience/airquality.htm.*

Comment: Commenter insisted that CCS and LOS should be retired, as they are respectively rated the 3rd and 19th most polluting coal plants in the U.S. (Citing sourcewatch.org.)

Response: While we respect the commenter's opinion, a regulatory process has been established under the CAA and our regulations for considering pollution controls to address visibility impairment, and our action follows that process.

Comment: Many commenters generally stated that the costs of EPA's proposed rule are high when compared to benefits. They stated that NDDH's SIP costs much less to implement than does EPA's plan, and produces similar benefits. High costs were cited both with respect to capital costs of the controls as well as increased costs (retail price per kilowatt hour) to consumers particularly fixed and lower-income consumers. Negative economic impacts to agriculture and oil and gas industries were cited, noting that the success of these industries is dependent on low-cost and reliable electric power. Several commenters specifically mentioned a cost of $700 million to install EPA's proposed controls and the potential for lost jobs. Some commenters expressed a willingness to pay the potential increase in their electric bills because they supported EPA's action.

Response: While we disagree with a number of the commenters' assertions, these comments are largely no longer relevant because we have decided to approve North Dakota's NO_X BART determinations for MRYS 1 and 2 and LOS 2 on grounds explained elsewhere. To the degree that some of these comments extend to our FIP for CCS and AVS, EPA's evaluation of capital and annual expenses associated with implementation of the FIP shows such expenses to be justified by the degree of improvement in visibility in relationship to the cost of implementation.

We take our duty to estimate the cost of controls very seriously, and make every attempt to make a thoughtful and well informed determination. However, we do not consider a potential increase in electricity rates to be the most appropriate type of analysis for considering the costs of compliance in a BART determination. Nevertheless, our analysis indicates that the annual costs to CCS and AVS associated with our FIP will be relatively modest considering the size of the plants, and impacts to rate payers should be much lower than anticipated by commenters.

Comment: Commenter cited EPA's Clean Air Markets database, which states that North Dakota ranked #12 in SO_2 emissions and #19 in NO_X emissions. The commenter also provided the SO_2 and NO_X rankings for the seven North Dakota EGUs discussed in the SIP.

Response: We appreciate the commenter providing the SO_2 and NO_X rankings for North Dakota and its EGUs. We do not disagree with the information provided and acknowledge the data suggest the North Dakota plants rank relatively high in the amount of SO_2 and NO_X emissions compared to other states. However, we note that BART and RP determinations involve case-by-case determinations considering the relevant statutory factors, which do not include the relative emissions rankings.

Comment: Commenter requests that EPA set limits on ammonia slip where SNCR or SCR is required for BART.

Response: In Section 7.1.2 of the SIP, North Dakota concluded that ammonia is not a visibility impairing pollutant of concern as ammonia emissions (and associated regional haze impacts) from BART-eligible sources are negligible. We concur with this conclusion.

[69] The American Lung Association State of the Air report is available at *www.stateoftheair.org.*

Accordingly, there is no basis to set limits on ammonia slip to address concerns related to regional haze impacts. Nor is it necessary to set limits on ammonia slip to ensure compliance with NO_X emission limits because NO_X CEMS will be used.

J. Comments Requesting an Extension to the Public Comment Period

Comment: One commenter requested that the comment period be extended to December 21, 2011 and Governor Dalrymple and Senator Hoeven requested the time allotted for the public hearings be increased.

Response: The comment period for our proposal closed on November 21, 2011. We carefully considered the request for an extension to the comment period. We took into consideration how an extension might affect our ability to consider comments received on the proposed action and still comply with our consent decree deadlines. We do note that our October 13 and 14, 2011, public hearing in Bismarck, North Dakota was well attended and provided an opportunity for people to comment on our proposal. Also regarding the public hearings, we agreed to Governor Dalrymple's and Senator Hoeven's requests to extend the length of the public hearing and to allow as much time as needed for state representatives to present their comments.

K. Comments Generally in Favor of Our Proposal

Comment: Overall, we received more than 24,000 comment letters in support of our rulemaking from members representing various organizations, concerned citizens, and tribal members. These comments were received at the Public Hearing in Bismarck, North Dakota, by internet, and through the mail. Each of these commenters was generally in favor of portions of our proposed decision for North Dakota regional haze. These comments included comments urging us to require the most effective pollution control technology, SCR, at LOS 2, and MRYS 1 and 2 and additional emission reductions from CCS 1 and 2 and AVS 1 and 2. Some of these comments also discussed the detrimental health effects of haze pollution and the economic impacts of these health effects. Some of these comments urged us to keep or lower our proposed numeric limits on NO_X for MRYS and LOS 2 in our final decision. These letters also asked us to require other units at LOS, Heskett Station, and Stanton Station to modernize and reduce their air pollution impacts.

Response: We acknowledge the support of these commenters for our proposed action. We note that several of the control technology determinations and emissions limits supported by these commenters in the proposal have been changed in this final action based on the Minnkota BACT court decision and all of the information received during the comment period. Please see the docket associated with this action for additional detail. To the extent the comments asserted the need for more stringent controls, we address those comments in other responses.

L. Comments Generally Against Our Proposal

Comment: Various commenters generally stated they did not support the proposed rulemaking. Their reasons included: it will affect the town's economy, affect the coal power plant industry, electricity costs will increase, they have no direct health problems from actual emissions, direct and indirect jobs/businesses would be affected, North Dakota already meets air quality standards, that there will be no benefit to the community, that our decision relies on unproven technology, and that it will not result in noticeable visibility improvements.

We received three resolutions from cities in Minnesota, including Roseau, Big Falls, and Little Fork, which opposed our rulemaking. These resolutions included comments about the proposed FIP for SCR technology at MRYS, including comments about the high cost, that the technology had not been shown to work at similar plants, and that there would be no humanly perceptible visibility improvements over the State's plan. The resolutions also noted that Minnkota had already incurred significant costs for installing SNCR and contracting for renewable sources, and that these expenditures were resulting in rate increases.

We received petitions and mass mailer letters from nine rural power cooperative associations and over 3,000 comments generated through a Web site established by an organization named Partners for Affordable Energy. Comments from these letters and emails included the following: that Congress left the primary responsibility for SIPs with states, that states have superior knowledge of local conditions and needs, and that EPA's plan would provide imperceptible visibility benefits at huge costs. The comments also urged EPA to allow North Dakota to make its own decisions regarding its clean air programs.

Response: We acknowledge these general comments that opposed our proposed action. We provide responses that address these issues elsewhere in this action. We have made changes from our proposal, as noted elsewhere in this action.

VI. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a ''significant regulatory action'' under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011). As discussed in detail in section C below, the FIP applies to only two facilities. It is therefore not a rule of general applicability.

B. Paperwork Reduction Act

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* Under the Paperwork Reduction Act, a ''collection of information'' is defined as a requirement for ''answers to * * * identical reporting or recordkeeping requirements imposed on ten or more persons * * *.'' 44 U.S.C. 3502(3)(A). Because the FIP applies to just two facilities, the Paperwork Reduction Act does not apply. *See* 5 CFR 1320(c).

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid Office of Management and Budget (OMB) control number. The OMB control numbers for our regulations in 40 CFR are listed in 40 CFR Part 9.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare

a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this action on small entities, I certify that this proposed action will not have a significant economic impact on a substantial number of small entities. The FIP that EPA is finalizing for purposes of the visibility prong of section 110(a)(2)(D)(i)(II) consists of the combination of the approval of the State's RH SIP submission and the Regional Haze FIP by EPA that adds additional controls to certain sources. The Regional Haze FIP that EPA is finalizing for purposes of the regional haze program consists of imposing federal controls to meet the BART requirement for NO_X emissions at one source in North Dakota, and imposing controls to meet the reasonable progress requirement for NO_X emissions at one additional source in North Dakota. The net result of these two simultaneous FIP actions is that EPA is proposing direct emission controls on selected units at only two sources. The sources in question are each large electric generating plants that are not owned by small entities, and therefore are not small entities. The partial approval of the SIP merely approves state law as meeting Federal requirements and imposes no additional requirements beyond those imposed by state law. *See Mid-Tex Electric Cooperative, Inc.* v. *FERC,* 773 F.2d 327 (D.C. Cir. 1985).

D. Unfunded Mandates Reform Act (UMRA)

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal governments and the private sector. Under section 202 of UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and Tribal governments, in the aggregate, or to the private sector, of $100 million or more (adjusted for inflation) in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and to adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 of UMRA do not apply when they are inconsistent with applicable law. Moreover, section 205 of UMRA allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments, it must have developed under section 203 of UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Under Title II of UMRA, EPA has determined that this rule does not contain a Federal mandate that may result in expenditures that exceed the inflation-adjusted UMRA threshold of $100 million by State, local, or Tribal governments or the private sector in any 1 year. In addition, this rule does not contain a significant Federal intergovernmental mandate as described by section 203 of UMRA nor does it contain any regulatory requirements that might significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

Federalism (64 FR 43255, August 10, 1999) revokes and replaces Executive Orders 12612 (Federalism) and 12875 (Enhancing the Intergovernmental Partnership). Executive Order 13132 requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.'' Under Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the proposed regulation. EPA also may not issue a regulation that has federalism implications and that preempts State law unless the Agency consults with State and local officials early in the process of developing the proposed regulation.

This rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132, because it merely addresses the State not fully meeting its obligation to prohibit emissions from interfering with other states' measures to protect visibility established in the CAA and not fully meeting its obligation to adopt a SIP that meets the regional haze requirements under the CAA. Thus, Executive Order 13132 does not apply to this action.

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

Executive Order 13175, entitled *Consultation and Coordination with Indian Tribal Governments* (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure ''meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.'' We believe this rule does not have tribal implications, as specified in Executive Order 13175, and will not have substantial direct effects on tribal governments. Thus, Executive Order 13175 does not apply to this rule.

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

Executive Order 13045: *Protection of Children from Environmental Health*

Risks and Safety Risks (62 FR 19885, April 23, 1997), applies to any rule that: (1) Is determined to be economically significant as defined under Executive Order 12866; and (2) concerns an environmental health or safety risk that we have reason to believe may have a disproportionate effect on children. EPA interprets EO 13045 as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the EO has the potential to influence the regulation. This action is not subject to EO 13045 because it implements specific standards established by Congress in statutes. However, to the extent this rule will limit emissions of NO_X, the rule will have a beneficial effect on children's health by reducing air pollution.

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

This action is not subject to Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12 of the National Technology Transfer and Advancement Act (NTTAA) of 1995 requires Federal agencies to evaluate existing technical standards when developing a new regulation. To comply with NTTAA, EPA must consider and use ''voluntary consensus standards'' (VCS) if available and applicable when developing programs and policies unless doing so would be inconsistent with applicable law or otherwise impractical.

The EPA believes that VCS are inapplicable to this action. Today's action does not require the public to perform activities conducive to the use of VCS.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994), establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

We have determined that this rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population. This rule limits emissions of NO_X from two facilities in North Dakota. The partial approval of the SIP merely approves state law as meeting Federal requirements and imposes no additional requirements beyond those imposed by state law.

K. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.,* as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). This rule will be effective on May 7, 2012.

L. Judicial Review

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by June 5, 2012. Pursuant to CAA section 307(d)(1)(B), this action is subject to the requirements of CAA section 307(d) as it promulgates a FIP under CAA section 110(c). Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. See CAA section 307(b)(2).

Approval and Promulgation of Implementation Plans; North Dakota; Regional Haze State Implementation Plan; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Regional Haze. Final Rule. (EPA–R08–OAR–2010–0406)

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Intergovernmental relations, Incorporation by reference, Nitrogen dioxides, Particulate matter, Reporting and recordkeeping requirements, Sulfur dioxide, Volatile organic compounds.

Dated: March 1, 2012.

Lisa P. Jackson,

Administrator.

40 CFR part 52 is amended as follows:

PART 52—[AMENDED]

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

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

Subpart JJ—North Dakota

■ 2. Section 52.1820 is amended by:
■ a. Adding to the table in paragraph (c) an entry entitled ''33–15–25 Regional Haze Requirements'' at the end of the table.
■ b. Revising the table in paragraph (d).
■ c. Adding to the table in paragraph (e)entries ''(23),'' ''(24),'' and ''(25)'' in numerical order at the end of the table.

The revisions and additions read as follows:

§ 52.1820 Identification of plan.

* * * * *

(c) * * *

State citation	Title/subject	State effective date	EPA approval date and citation [1]	Explanations
* * *	* * *	*	*	*
33–15–25 Regional Haze Requirements				
33–15–25–01	Definitions	1/1/07	4/6/12, [Insert **Federal Register** page number where the document begins.].	
33–15–25–02	Best available retrofit technology	1/1/07	4/6/12, [Insert **Federal Register** page number where the document begins.].	
33–15–25–03	Guidelines for best available retrofit technology determinations under the regional haze rule.	1/1/07	4/6/12, [Insert **Federal Register** page number where the document begins.].	
33–15–25–04	Monitoring, recordkeeping, and reporting.	1/1/07	4/6/12, [Insert **Federal Register** page number where the document begins.].	

[1] In order to determine the EPA effective date for a specific provision listed in this table, consult the **Federal Register** notice cited in this column for the particular provision.

* * * * * (d) * * *

Name of source	Nature of requirement	State effective date	EPA approval date and citation [3]	Explanations
Leland Olds Station Unit 1	SIP Chapter 8, Section 8.3, Continuous Emission Monitoring Requirements for Existing Stationary Sources, including amendments to Permits to Operate and Department Order.	5/6/77	10/17/77, 42 FR 55471.	
	Air pollution control permit to construct for best available retrofit technology (BART), PTC10004.	2/23/10	4/6/12, [Insert **Federal Register** page number where the document begins.].	
Leland Olds Station Unit 2	SIP Chapter 8, Section 8.3, Continuous Emission Monitoring Requirements for Existing Stationary Sources, including amendments to Permits to Operate and Department Order.	5/6/77	10/17/77, 42 FR 55471.	
	Air pollution control permit to construct for best available retrofit technology (BART), PTC10004.	2/23/10	4/6/12, [Insert **Federal Register** page number where the document begins.].	
Milton R. Young Station Unit 1	SIP Chapter 8, Section 8.3, Continuous Emission Monitoring Requirements for Existing Stationary Sources, including amendments to Permits to Operate and Department Order.	5/6/77	10/17/77, 42 FR 55471.	
	Air pollution control permit to construct for best available retrofit technology (BART), PTC10007.	2/23/10	4/6/12, [Insert **Federal Register** page number where the document begins.].	
Milton R. Young Station Unit 2	Air pollution control permit to construct for best available retrofit technology (BART), PTC10007.	2/23/10	4/6/12, [Insert **Federal Register** page number where the document begins.].	
Coal Creek Station Unit 1	Air pollution control permit to construct for best available retrofit technology (BART), PTC10005.	2/23/10	4/6/12, [Insert **Federal Register** page number where the document begins.].	Excluding the NO_X BART emissions limits for Unit 1 and corresponding monitoring, recordkeeping, and reporting requirements, which EPA disapproved.

Name of source	Nature of requirement	State effective date	EPA approval date and citation [3]	Explanations
Coal Creek Station Unit 2	Air pollution control permit to construct for best available retrofit technology (BART), PTC10005.	2/23/10	4/6/12, [Insert **Federal Register** page number where the document begins.].	Excluding the NO_X BART emissions limits for Unit 2 and corresponding monitoring, recordkeeping, and reporting requirements, which EPA disapproved.
Stanton Station Unit 1	SIP Chapter 8, Section 8.3, Continuous Emission Monitoring Requirements for Existing Stationary Sources, including amendments to Permits to Operate and Department Order.	5/6/77	10/17/77, 42 FR 55471.	
	Air pollution control permit to construct for best available retrofit technology (BART), PTC10006.	2/23/10	4/6/12, [Insert **Federal Register** page number where the document begins.].	
Heskett Station Unit 1	SIP Chapter 8, Section 8.3, Continuous Emission Monitoring Requirements for Existing Stationary Sources, including amendments to Permits to Operate and Department Order.	5/6/77	10/17/77, 42 FR 55471.	
Heskett Station Unit 2	SIP Chapter 8, Section 8.3, Continuous Emission Monitoring Requirements for Existing Stationary Sources, including amendments to Permits to Operate and Department Order.	5/6/77	10/17/77, 42 FR 55471.	
	Air Pollution Control Permit to Construct, PTC10028.	7/22/10	4/6/12, [Insert **Federal Register** page number where the document begins.].	
Coyote Station Unit 1	Air Pollution Control Permit to Construct, PTC10008.	3/14/11	4/6/12, [Insert **Federal Register** page number where the document begins.].	
American Crystal Sugar at Drayton.	SIP Chapter 8, Section 8.3, Continuous Emission Monitoring Requirements for Existing Stationary Sources, including amendments to Permits to Operate and Department Order.	5/6/77	10/17/77, 42 FR 55471.	
Tesoro Mandan Refinery	SIP Chapter 8, Section 8.3.1, Continuous Opacity Monitoring for Fluid Bed Catalytic Cracking Units: Tesoro Refining and Marketing Co., Mandan Refinery.	2/27/07	5/27/08, 73 FR 30308.	

[3] In order to determine the EPA effective date for a specific provision listed in this table, consult the **Federal Register** notice cited in this column for the particular provision.

* * * * * (e) * * *

Name of nonregulatory SIP provision	Applicable geographic or nonattainment area	State submittal date/ adopted date	EPA approval date and citation [3]	Explanations
*	* *	*	* *	*
(23) North Dakota State Implementation Plan for Regional Haze.	Statewide	Submitted: 3/3/10	4/6/12, [Insert **Federal Register** page number where the document begins.].	Excluding portions of the following: Sections 7.4, 9.5, 9.7, and 10.6, and Appendices B.2, and D.2, and all of Appendix A.4, because EPA disapproved the NO_X BART determination for Coal Creek Station Units 1 and 2, the reasonable progress determination for Antelope Valley Station Units 1 and 2 regarding NO_X controls, the reasonable progress goals, and parts of the long-term strategy, and because the provisions applicable to Coyote Station were superseded by a later submittal.
(24) North Dakota State Implementation Plan for Regional Haze Supplement No. 1.	Statewide	Submitted: 7/27/10	4/6/12, [Insert **Federal Register** page number where the document begins.].	
(25) North Dakota State Implementation Plan for Regional Haze Amendment No. 1.	Statewide	Submitted: 7/28/11	4/6/12, [Insert **Federal Register** page number where the document begins.].	Including only Section 10.6.1.2, Appendix A.4, and introductory elements that pertain to the NO_X requirements for Coyote Station; excluding all other portions of the submittal.

[3] In order to determine the EPA effective date for a specific provision listed in this table, consult the **Federal Register** notice cited in this column for the particular provision.

* * * * *

■ 3. Section 52.1825 is added as follows:

§ 52.1825 Federal Implementation Plan for Regional Haze.

(a) *Applicability.* This section applies to each owner and operator of the following coal-fired electric generating units (EGUs) in the State of North Dakota: Coal Creek Station, Units 1 and 2; Antelope Valley Station, Units 1 and 2.

(b) *Definitions.* Terms not defined below shall have the meaning given them in the Clean Air Act or EPA's regulations implementing the Clean Air Act. For purposes of this section:

(1) *Boiler operating day* means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the EGU. It is not necessary for fuel to be combusted for the entire 24-hour period.

(2) *Continuous emission monitoring system or CEMS* means the equipment required by this section to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of NO_X emissions, other pollutant emissions, diluent, or stack gas volumetric flow rate.

(3) *NO_X* means nitrogen oxides.

(4) *Owner/operator* means any person who owns or who operates, controls, or supervises an EGU identified in paragraph (a) of this section.

(5) *Unit* means any of the EGUs identified in paragraph (a) of this section.

(c) *Emissions limitations.* (1) The owners/operators subject to this section shall not emit or cause to be emitted NO_X in excess of the following limitations, in pounds per million British thermal units (lb/MMBtu), averaged over a rolling 30-day period:

Source name	NO_X Emission limit (lb/MMBtu)
Coal Creek Station, Units 1 and 2.	0.13, averaged across both units.
Antelope Valley Station, Unit 1.	0.17.
Antelope Valley Station, Unit 2.	0.17.

(2) These emission limitations shall apply at all times, including startups, shutdowns, emergencies, and malfunctions.

(d) *Compliance date.* The owners and operators of Coal Creek Station shall comply with the emissions limitation and other requirements of this section within five (5) years of the effective date of this rule, unless otherwise indicated in specific paragraphs. The owners and operators of Antelope Valley Station shall comply with the emissions limitations and other requirements of this section as expeditiously as practicable, but no later than July 31, 2018, unless otherwise indicated in specific paragraphs.

(e) *Compliance determination*—(1) *CEMS.* At all times after the compliance date specified in paragraph (d) of this section, the owner/operator of each unit shall maintain, calibrate, and operate a CEMS, in full compliance with the requirements found at 40 CFR part 75, to accurately measure NO_X, diluent, and stack gas volumetric flow rate from each unit. The CEMS shall be used to determine compliance with the

emission limitations in paragraph (c) of this section for each unit.

(2) *Method.* (i) For any hour in which fuel is combusted in a unit, the owner/operator of each unit shall calculate the hourly average NO_X concentration in lb/MMBtu at the CEMS in accordance with the requirements of 40 CFR part 75. At the end of each boiler operating day, the owner/operator shall calculate and record a new 30-day rolling average emission rate in lb/MMBtu from the arithmetic average of all valid hourly emission rates from the CEMS for the current boiler operating day and the previous 29 successive boiler operating days.

(ii) An hourly average NO_X emission rate in lb/MMBtu is valid only if the minimum number of data points, as specified in 40 CFR part 75, is acquired by both the NO_X pollutant concentration monitor and the diluent monitor (O_2 or CO_2).

(iii) Data reported to meet the requirements of this section shall not include data substituted using the missing data substitution procedures of subpart D of 40 CFR part 75, nor shall the data have been bias adjusted according to the procedures of 40 CFR part 75.

(f) *Recordkeeping.* Owner/operator shall maintain the following records for at least five years:

(1) All CEMS data, including the date, place, and time of sampling or measurement; parameters sampled or measured; and results.

(2) Records of quality assurance and quality control activities for emissions measuring systems including, but not limited to, any records required by 40 CFR part 75.

(3) Records of all major maintenance activities conducted on emission units, air pollution control equipment, and CEMS.

(4) Any other records required by 40 CFR part 75.

(g) *Reporting.* All reports under this section shall be submitted to the Director, Office of Enforcement, Compliance and Environmental Justice, U.S. Environmental Protection Agency, Region 8, Mail Code 8ENF–AT, 1595 Wynkoop Street, Denver, Colorado 80202–1129.

(1) Owner/operator shall submit quarterly excess emissions reports no later than the 30th day following the end of each calendar quarter. Excess emissions means emissions that exceed the emissions limits specified in paragraph (c) of this section. The reports shall include the magnitude, date(s), and duration of each period of excess emissions, specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the unit, the nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted.

(2) Owner/operator shall submit quarterly CEMS performance reports, to include dates and duration of each period during which the CEMS was inoperative (except for zero and span adjustments and calibration checks), reason(s) why the CEMS was inoperative and steps taken to prevent recurrence, any CEMS repairs or adjustments, and results of any CEMS performance tests required by 40 CFR part 75 (Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits).

(3) When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted during the reporting period, such information shall be stated in the report.

(h) *Notifications.* (1) Owner/operator shall submit notification of commencement of construction of any equipment which is being constructed to comply with the NO_X emission limits in paragraph (c) of this section.

(2) Owner/operator shall submit semi-annual progress reports on construction of any such equipment.

(3) Owner/operator shall submit notification of initial startup of any such equipment.

(i) *Equipment operation.* At all times, owner/operator shall maintain each unit, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

(j) *Credible Evidence.* Nothing in this section shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with requirements of this section if the appropriate performance or compliance test procedures or method had been performed.

[FR Doc. 2012–6586 Filed 4–5–12; 8:45 am]

BILLING CODE 6560–50–P