ENVIRONMENTAL PROTECTION AGENCY
40 CFR Part 52
[EPA-R06-OAR-2010-0846; FRL-]

Approval and Promulgation of Implementation Plans; New Mexico; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Best Available Retrofit Technology Determination

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is disapproving a portion of the State Implementation Plan (SIP) revision received from the State of New Mexico on September 17, 2007, for the purpose of addressing the "good neighbor" requirements of section 110(a)(2)(D)(i) of the Clean Air Act (CAA or Act) for the 1997 8-hour ozone National Ambient Air Quality Standards (NAAQS or standards) and the 1997 fine particulate matter ($PM_{2.5}$) NAAQS. In this action, EPA is disapproving the New Mexico Interstate Transport SIP provisions that address the requirement of section 110(a)(2)(D)(i)(II) that emissions from New Mexico sources do not interfere with measures required in the SIP of any other state under part C of the CAA to protect visibility. We have found that New Mexico sources, except the San Juan Generating Station, are sufficiently controlled to eliminate interference with the visibility programs of other states. EPA is promulgating a Federal Implementation Plan (FIP) to address this deficiency by implementing nitrogen oxides (NOx) and sulfur dioxide (SO_2) emission limits necessary at the San Juan Generating Station (SJGS), to prevent such interference. EPA found in January 2009 that New Mexico had failed to submit a SIP addressing certain regional haze (RH) requirements, including the requirement for best available retrofit technology (BART). The Clean Air Act required EPA to promulgate a FIP to address RH requirements by January 2011. This FIP addresses the RH BART requirement for NOx for SJGS. In addition, EPA is implementing sulfuric acid (H_2SO_4) hourly emission limits at the SJGS, to minimize the contribution of this compound to visibility impairment. This action is being taken under section 110 and part C of the CAA.

DATES: This final rule is effective on: **[Insert date 30 days from date of publication in the Federal Register]**.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA-R06-OAR-2010-0846. All documents in the docket are listed in the Federal eRulemaking portal index at *http://www.regulations.gov* and are available either electronically at *http://www.regulations.gov* or in hard copy at EPA Region 6, 1445 Ross Ave., Dallas, TX, 75202-2733. To inspect the hard copy materials, please schedule an appointment during normal business hours with the contact listed in the **FOR FURTHER INFORMATION CONTACT** section. A reasonable fee may be charged for copies.

FOR FURTHER INFORMATION CONTACT:
Joe Kordzi, EPA Region 6, (214) 665-7186, *kordzi.joe@epa.gov*.

SUPPLEMENTARY INFORMATION:

Throughout this document wherever ‘‘we,’’ ‘‘us,’’ ‘‘our,’’ or “the Agency” is used, we mean the EPA. Unless otherwise specified, when we say the “San Juan Generating Station,” or “SJGS,” we mean units 1, 2, 3, and 4, inclusive.

Overview

The Clean Air Act requires states to prevent air pollution from sources within their borders from impairing air quality and visibility in other states. The Act also requires states to reduce pollution from significant sources whose emissions reduce visibility in the nation's pristine and wilderness areas (such as the Grand Canyon), and contribute to regional haze. When a state has not adopted plans as required by these provisions, EPA must put such a plan in place, known as a Federal Implementation Plan (FIP).

In this action, EPA is finalizing a FIP for New Mexico to address emissions from one source: the San Juan Generating Station coal-fired power plant. EPA is finding that the other New Mexico pollution sources are adequately controlled to eliminate interference with the clean air visibility programs of other states. This FIP can be replaced by a state plan that EPA finds meets the applicable Clean Air Act requirements. The federal plan will remain in effect no longer than necessary.

In December 2010, EPA proposed to disapprove a portion of the New Mexico Interstate Transport State Implementation Plan (SIP), specifically the New Mexico Interference with Visibility SIP, and proposed a source-specific FIP to cut pollution from San Juan Generating Station to address adverse visibility impacts.

The federal plan also addresses a portion of EPA’s 2-year obligation under the Clean Air Act’s Regional Haze Rule to implement a federal plan when the state failed to meet the January 2009 deadline. This shortfall is being addressed by establishing emissions limits representing Best Available Retrofit Technology (BART) for nitrogen oxide (NOx) pollution at the San Juan Generating Station power plant.

The federal plan will require the San Juan Generating Station, to cut emissions to improve scenic views at 16 of our most treasured parks including the Grand Canyon, Mesa Verde and Bandelier National Monument. Pollution from this power plant impacts four states including Arizona, Utah, Colorado, and New Mexico. Improved air quality also results in public health benefits.

Public Service Company of New Mexico (PNM) owns the San Juan Generating Station power plant. The power plant has four coal-fired generating units. It is located in San Juan County, 15 miles west of Farmington in northwest New Mexico. The thirty-year old San Juan Generation Station power plant is one of the largest sources of NOx pollution in the United States.

The federal plan requires the San Juan Generating Station coal-fired power plant to reduce nitrogen oxide and sulfur dioxide pollution to 0.05 pounds per million BTU and 0.15 pounds per million BTU respectively.

By addressing nitrogen oxide pollution requirements of both Interstate Transport and the Regional Haze Rule, PNM will meet these two Clean Air Act requirements for NOx emission limits for the power plant with only one round of improvements. This regulatory certainty will help guide PNM's business decisions regarding capital investments in pollution controls.

EPA evaluated reliable and proven pollution technologies as part of its decision. EPA determined Selective Catalytic Reduction (SCR) to be the most cost-effective pollution control to achieve the emission reductions outlined in the federal plan. Evaluation of a less expensive alternative, Non-Selective Catalytic Reduction (SNCR), showed that SNCR at the San Juan Generating Station coal-fired power plant achieves far less reduction in pollution and less visibility improvement, and does not fully meet the requirement of the Act for Best Available Retrofit Technology (BART).

EPA held an extended public comment period on this action, an open house, and a public hearing. After careful review of information provided during the public comment period, EPA revised its calculation of the associated cost investment from $229 to $345 million. Also, in consideration of comments about the time to comply with the new emissions limits, EPA extended the time for compliance with the nitrogen oxide pollution emission limit from 3 years to 5 years, the maximum period allowed by the Clean Air Act.

This investment will reduce the visibility impacts due to this facility by over 50% at each one of the 16 national parks and wilderness areas in the area, and promote local tourism by decreasing the number of days when pollution impairs scenic views. Although today's action is taken to address visibility impairments, PNM will also reduce public health impacts by cutting NOx pollution by over 80% by installing reliable pollution-control technology on its four coal-fired power generation units over the next five years.

EPA will review the regional haze plan that the State submitted in July 2011, and if there is significant new information that changes our analysis, EPA will make appropriate revisions to today's decision.

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I. Summary of our Proposal

On January 5, 2011, we published the proposal on which we are now taking final action. 76 FR 491. We proposed to disapprove a portion of the SIP revision received from the State of New Mexico on September 17, 2007, for the purpose of addressing the "good neighbor" provisions of the CAA section 110(a)(2)(D)(i) with respect to visibility for the 1997 8-hour ozone NAAQS and the $PM_{2.5}$ NAAQS. Having proposed to disapprove these provisions of the New Mexico SIP, we proposed a FIP to address the requirements of section 110(a)(2)(D)(i)(II) with respect to visibility to ensure that emissions from sources in New Mexico do not interfere with the visibility programs of other states. We proposed to find that New Mexico's sources, other than the San Juan Generating Station (SJGS), are sufficiently controlled to eliminate interference with the visibility programs of other states, and for the SJGS, we proposed specific SO_2 and NOx emissions limits that will eliminate such interstate interference. For SO_2, we proposed to require the SJGS to meet an emission limit of 0.15 pounds per million British Thermal Units (lb/MMBtu). For NOx, we proposed to implement a NOx emission limit of 0.05 lbs/MMBtu, based on our BART determination, as discussed below.

Separate from our proposal under Section 110 of the CAA, we simultaneously evaluated whether the SJGS met certain other related requirements under the Regional Haze (RH) program under Sections 169A and 169B of the CAA. Regional Haze SIPs were due December 17, 2007. In January 2009, we made a finding that New Mexico had failed to submit a RH SIP addressing the requirements of 40 CFR 51.309(d)(4) and (g). 74 FR 2392 (January 15, 2009). Under the CAA, we are required to promulgate a FIP within two years of the effective date of a finding that a State has failed to submit a SIP unless the State submits a SIP and we approve that SIP within the two year period. CAA §110(c). At the time of the proposed FIP, New Mexico had not yet submitted a substantive RH SIP addressing, among other things, the requirement that certain stationary sources install BART for NOx. (On July 5, 2011, New Mexico submitted a RH SIP, which we discuss later in this Notice.) Based on our evaluation of the RH BART requirements of section 40 CFR 51.309(d)(4), we proposed to find that the SJGS is subject to BART under section 40 CFR 51.309(d)(4), and/or 51.308(e). We proposed a FIP which contained NOx BART limits for the SJGS based on our proposed NOx BART determination. We proposed to

require that the SJGS meet a NOx emission limit of 0.05 lb/MMBtu individually at Units 1, 2, 3, and 4. We noted this NOx limit is achievable by installing and operating Selective Catalytic Reduction (SCR).

We proposed that both the NOx and SO_2 emission limits be measured on the basis of a 30 day rolling average. We also proposed hourly average emission limits of 1.06 X 10^{-4} lb/MMBtu for H_2SO_4 and 2.0 parts per million volume dry (ppmvd) ammonia adjusted to 6 percent oxygen, to minimize the contribution of these compounds to visibility impairment. We solicited comments on a range of 2-6 ppmvd for ammonia, and 1.06 X 10^{-4} to7.87 X 10^{-4} lb/MMBtu for H_2SO_4. Additionally, we proposed monitoring, record-keeping and reporting requirements to ensure compliance with these emission limitations.

Lastly, we proposed that compliance with the emission limits must be within three (3) years of the effective date of our final rule. We solicited comments on alternative timeframes, up to five (5) years from the effective date our final rule. In our proposal, we did not address whether the state had met other requirements of the RH program, which we will address in later actions. Please see our proposal for more details.

II. Final Decision

A. Interstate Transport

We are disapproving the portion of the SIP revision received from the State of New Mexico on September 17, 2007, for the purpose of addressing the "good neighbor" provisions of the CAA section 110(a)(2)(D)(i) with respect to visibility for the 1997 8-hour ozone NAAQS and the $PM_{2.5}$ NAAQS. The 2007 SIP submission by New Mexico anticipated that the State would submit a substantive RH SIP to meet the requirements of section 110(a)(2)(D)(i)(II).

Section 110(a)(2)(D)(i)(II) of the CAA requires that states have a SIP, or submit a SIP revision, containing 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." States were required to submit a SIP by December 2007 with measures to address regional haze—visibility impairment that is caused by the emissions of air pollutants from numerous sources located over a wide geographic area. Under the RH program, each State with a Class I area must submit a SIP with reasonable progress goals for each such area that provides for an improvement in visibility for the most impaired days and ensures no degradation of the best days. (The "Class I" federal areas[1] affected by the SJGS include 16 of our most treasured parks, such as the Grand Canyon, Mesa Verde, and Bandelier National Monument. Emissions from this power plant impact four states including Arizona, Utah, Colorado, and New Mexico.)

Because of the often significant impacts on visibility from the interstate transport of pollutants, we interpret the "good neighbor" provisions of section 110 of the CAA described

[1] CAA 42 U.S.C. § 7472(a). The list of mandatory class I federal areas where visibility is an important value is codified at 40 C.F.R. Part 81 Subpart D.

above as requiring states to include in their SIPs measures to prohibit emissions that would interfere with the reasonable progress goals set to protect Class I areas in other states. This is consistent with the requirements in the RH program which explicitly require each State to address its share of the emission reductions needed to meet the reasonable progress goals for surrounding Class I areas. 64 FR 35714, 35735 (July 1, 1999). States working together through a regional planning process are required to address an agreed upon share of their contribution to visibility impairment in the Class I areas of their neighbors. 40 CFR 51.308(d)(3)(ii).

The States in the West, including New Mexico, worked through a regional planning organization, the Western Regional Air Partnership (WRAP), to develop strategies to address regional haze. To help the State in establishing reasonable progress goals, the WRAP modeled future visibility conditions. The WRAP modeling assumed emissions reductions from each State, based on extensive consultation among the States as to appropriate strategies for addressing haze. In setting reasonable progress goals, States in the West generally relied on this modeling. As explained in the notice of proposed rulemaking, we believe that the analysis conducted by the WRAP provides an appropriate means for designing a FIP that will ensure that emissions from sources in New Mexico are not interfering with the visibility programs of other states, as contemplated in section 110(a)(2)(D)(i)(II).

As a result of our disapproval of New Mexico's SIP, submitted to meet the requirements of section 110(a)(2)(D)(i)(II) with respect to visibility, we are promulgating a FIP to ensure that emissions from New Mexico sources do not interfere with the visibility programs of other states. We find that New Mexico sources, other than the SJGS, are sufficiently controlled to eliminate interference with the visibility programs of other states because the federally enforceable emission limits for these sources are consistent with those relied upon in the WRAP modeling. The SO_2 and NOx emissions relied upon in the WRAP modeling for the SJGS, however, are not federally enforceable. Therefore, we are establishing federally enforceable SO_2 emissions limits that will address these discrepancies and eliminate interstate interference based on current emissions that satisfy the assumptions in the WRAP modeling. We are finalizing our proposal to require the SJGS to meet an SO_2 emission limit of 0.15 lb/MMBtu, the rate assumed in the WRAP modeling. We proposed a 30 day rolling average for units 1, 2, 3, and 4 of the SJGS. However, in response to a comment we received, we are changing our proposed averaging period for these emission limits from a straight 30 day calendar average to one calculated on the basis of a Boiler Operating Day (BOD).

Besides not being federally enforceable, the NOx emissions that were assumed in the WRAP modeling cannot be achieved without additional NOx controls for the SJGS to prevent interference with visibility pursuant to the requirements of section 110(a)(2)(D)(i)(II) of the CAA. We are choosing, however, not to use the WRAP assumptions to make a determination on the enforceable NOx controls necessary to prevent visibility interference, as we are doing for the SO_2 controls. Instead, we are addressing NOx control for the SJGS by fulfilling our duty under the BART provisions of the RH rule to promulgate a RH FIP for New Mexico to address, among other elements of the visibility program, the requirement for BART.[2] We do not believe it is prudent to delay a NOx BART determination for the SJGS, because we have determined that the BART requirements are more stringent than the visibility transport requirements. Separating the

[2] *See* 74 FR 2392.

visibility transport and BART rulemakings could result in near-term requirements for the utility to install one set of controls and capital expenditures, to only satisfy our obligation under section 110(a)(2)(D)(i)(II), followed shortly thereafter by different requirements for controls and capital expenditures to satisfy our obligation under BART. This could result in unnecessary costs and confusion.

We did receive a New Mexico RH SIP submittal on July 5, 2011, but it came several years after the statutory deadline, and after the close of the comment period on today's action.[3] In addition, because of the missed deadline for the visibility transport, we are under a court-supervised consent decree deadline with WildEarth Guardians of August 5, 2011, to have either approved the New Mexico SIP or to have implemented a FIP to address the 110(a)(2)(D)(i) provision. It would not have been possible to review the July 5, 2011 SIP submission, propose a rulemaking, and promulgate a final action by the dates required by the consent decree. Notwithstanding these facts, we did comment during the State's public comment period for their proposed RH SIPin May 2011 and we did evaluate the technology advocated as BART in the State's proposed RH SIP: SNCR, as discussed in further detail elsewhere in this Notice.

B. NOx BART Determination for the San Juan Generating Station (SJGS)

We find that the SJGS is subject to BART under sections 40 CFR 51.309(d)(4), and/or 51.308(e). In this action, we are adopting a FIP that partially addresses the BART requirements of the RH program for New Mexico. We are finalizing our proposal to require the SJGS to meet a NOx emission limit of 0.05 lb/MMBtu individually at Units 1, 2, 3, and 4. As we discuss elsewhere in our response to comments, we find there is ample support for this decision. However, in response to a comment we received, we are changing our proposed averaging period for these emission limits from a straight 30 day calendar average to one calculated on the basis of a boiler operating day (BOD). We also received a comment requesting we revise our proposed unit-by-unit NOx limitation, and replace it with a plant wide average NOx limitation. As we note in our response to this comment, although we are open to combining the BOD and plant wide averaging schemes, this presents a significant technical challenge in having a verifiable, workable, and enforceable algorithm for calculating such an average. Due to our obligation to ensure the enforceability of the emission limits we are imposing in our FIP, we leave it to New Mexico to take up this matter in a future SIP revision, should they deem it worth pursuing. We are confident this issue can be addressed prior to the installation of the emission controls required to satisfy our FIP.

We are also finalizing our proposal requiring the SJGS to meet an H_2SO_4 emission limit of 2.6×10^{-4} lb/MMBtu to minimize its contribution to visibility impairment. We are promulgating monitoring, record-keeping and reporting requirements to ensure compliance with this emission limit. As discussed in our response to comments, after careful consideration of the comments we received concerning our proposal to require the SJGS to meet an hourly average emission limit of 2.0 parts ppmvd for ammonia, we have determined that neither an ammonia

[3] A State Regional Haze SIP was due under the CAA by Dec. 17, 2007, and EPA was obligated to either approve an RH SIP or promulgate a FIP by January 15, 2011. *See* CAA Section 110(c)(1)(B).

limit, nor ammonia monitoring is warranted, and we are not finalizing ammonia limits or monitoring requirements.

C. Compliance Timeframe

We originally proposed a compliance schedule of 3 years for SJGS for the NOx, SO_2, ammonia, and H_2SO_4 emission limits, and solicited comments on alternative timeframes of less than 3 years and up to 5 years (the maximum allowed under the statute).[4] As noted above, we are no longer requiring an ammonia emission limit. Also, as discussed in our response to comments, we carefully considered comments urging a longer compliance schedule due to site-specific issues such as the congestion of existing equipment (which could slow the retrofit process), historical information on SCR installation times, and our own observation of the site conditions,[5],and we now conclude that a longer compliance schedule is more appropriate. Consequently, compliance with the NOx, SO_2, and H_2SO_4emission limits will now be required within 5 years – rather than 3 years -- of the effective date of our final rule. (This issue is discussed in further detail in Section III.E., below.)

III. Analysis of Major Issues Raised by Commenters

Our January 5, 2011 proposal included a 60 day public comment period, which ended on March 7, 2011. We subsequently extended that comment period until April 4, 2011.[6] We also held an open house and a public hearing in Farmington, NM, on February 17, 2011.[7] We received in excess of 13,000 comments.

In light of the very large number of comments received and the significant overlap between many comments, we have grouped some comments together. We have summarized and provided responses to each significant argument, assertion, and question contained within the totality of the comments. Full responses to comments can be found in our *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP*.

A. Comments on the Costs of the NOx BART Determination

We received many comments related to various aspects of our cost analysis that fell into four major categories. First, we received general comments opining on the appropriateness of our cost analysis. Second, we received comments that were technical and related to specific line items in the cost analysis (e.g., additional steel, SCR bypass, sorbent injection, etc.). Third, we received comments that expressed general concern that the costs of the controls would be passed to the SJGS's customer base in the form of electricity rate increases. Fourth, we received comments that opined on the use of the Regional Haze Rule's (RHR) reliance on the EPA Air

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[4] 76 FR 491, 504.

[5] See San Juan Generating Station Site Visit, 5/23/11, which is viewable in the docket. As explained in a letter, dated May 17, 2011, the visit was solely for the purpose of reviewing and responding to comments. It was not an opportunity to introduce additional comments, and we did not receive any comments as a result of this visit.

[6] 76 FR 12305.

[7] 76 FR 1578.

Pollution Control Cost Manual (the Cost Manual) to estimate the cost of the SCR installations. We address the more significant comments within these categories individually below.

1. General Cost Comments

Comment: The National Park Service (NPS) and the U.S. Forest Service (USFS) separately presented a great deal of information in support of their opinions that Public Service Company of New Mexico's (PNM) contractor, Black &Veatch (B&V) overestimated the cost of installing SCR on the units of the SJGS. PNM is a part owner and the operator of the SJGS. The following is a combined summary of their separate comments.

The NPS and the USFS cited a large number of well-documented recent industry studies or surveys, which they use to conclude that PNM has overestimated its SCR costs, expressed in dollars per kilowatt. They stated that PNM has not provided valid information to justify their higher cost estimates for SCR installation at the SJGS. Additionally, the USFS stated PNM's contractors went against our guidance which recommends using the Cost Manual to ensure a transparent and consistent means to conduct cost analyses across the nation. The USFS took issue with PNM's estimation of indirect (soft) costs which include: engineering costs; construction and field expenses (e.g., costs for construction supervisory personnel, office personnel, rental of temporary offices, etc.); contractor fees; and start-up and performance test costs. Also, the NPS stated that B&V's improperly escalated costs and its calculations did not consider the weakening of labor markets that has occurred since they set up their spreadsheets in 2007.

Response: We found that PNM raised some legitimate points about costs, and as discussed elsewhere in this notice, we have adjusted several of our cost estimates upward based on those points. However, in large part, we agree with the NPS that PNM's estimated costs for installing SCR on the units of the SJGS are higher than justified. Please see our other responses to comments for more details on how we have adjusted our cost estimates. The following table illustrates our revised costs in terms of $/kW. These costs agree with the ranges presented by the NPS and the USFS in their comments, which can be viewed in our *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP* document:

Table 1
EPA Revised Estimated Costs of Installing SCR on the Units of the SJGS

	Unit 1	Unit 2	Unit 3	Unit 4
Proposed ($/kW)	$144	$155	$116	$110
Final ($/kW)	$211	$234	$179	$165

We note, that as required by the BART Guidelines, "[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 (July 6, 2005). As explained more fully in our *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP* document, we also agree

with the USFS that owner's costs are not an appropriate cost item to include in a BART cost estimate, as owners costs are not included in the Cost Manual.

Comment: PNM and its consultants estimated the cost of retrofitting SJGS with SCRs to be between $194 million and $261 million per unit (depending on the unit) with a total cost of $908 million for all four units. EPA maintains that SCRs can be purchased and installed for much less – between $52 million and $63 million per unit for a total of about $229 million. EPA's estimates of annual operating costs for the SCRs are also much lower than PNM's estimate. PNM's analysis indicates annual operating costs for all four SCRs would be approximately $114 million per year, whereas EPA expects PNM to be capable of operating the SCRs for only about $28 million per year. In short, EPA believes that SCRs cost $679 million less, or one quarter of the amount estimated by PNM. The commenter calls our cost estimate into question, since the disparity between these two estimates is large.

Response: B&V estimated it would cost between $446/kW and $559/kW to retrofit SCR on the SJGS units. Five industry studies conducted between 2002 and 2007 have reported the installed unit capital cost of SCRs to be $79/kW to $316/kW, where the upper end of the range is for very complex retrofits that are severely site constrained.[8] Others have noted the anomalously high costs reported for SJGS.[9] [10] We revised our cost estimates based on some comments highlighted in comments, but even with those changes, our revised costs for SCR are from $165/kW to $234/kW,[11] still well within the accepted range of expected costs for such controls.[12]

B&V's SJGS costs are unusually high for four principal reasons: (1) using a methodology (e.g., Allowance for Funds Used During Construction (AFUDC)) that has been disallowed under EPA"s Cost Manual methodology and specifically disallowed for SCR (see discussion at footnote 28); (2) consistently using assumptions at the upper end of the range for key SCR components (e.g., SCR backpressure; stiffening design pressure); (3) including costs for equipment that is not necessary for a SCR (e.g., balanced draft conversion, sorbent injection, SCR bypass); and (4) using excessive contingencies. The BART Guidelines require that "documentation" be provided for "any unusual circumstances that exist for the source that would lead to cost-effectiveness estimates that would exceed that for recent retrofits."[13] The B&V analysis does not support its unusually high cost estimates.

Further, much of the information that could have supported a claim that site specific issues at SJGS result in costs that are outside of the normal range is missing. Specifically, the B&V analysis lacked information such as project schedules, general arrangement site plans showing SCR and duct layout, requests for proposal (RFPs), vendor proposals, and a complete description of existing facilities.

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[8] Revised BART Cost Effectiveness Analysis for Selective Catalytic Reduction at the Public Service Company of New Mexico San Juan Generating Station, November 2010, pp. 28-29.
[9] Comments submitted by United States Department of Interior, National Park Service, dated 3/31/11.
[10] New Mexico Environment Department, Appendix A, NMED, Air Quality Bureau, BART Determination, Public Service Company of New Mexico, San Juan Generating Station, Units 1-4, 6/21/10.
[11] See Exhibit 1, RTC Revised Cost Analysis
[12] Please see our Complete Response to Comments for NM Regional Haze/Visibility Transport FIP document.
[13] 70 FR at 39168 (July 6, 2005).

Instead of preparing a site-specific SCR design, B&V in most circumstances made a worst case, upper bound assumption that, taken together, result in overall costs that are significantly outside of the normal range for SCR. However, B&V provided no record support for their decision to choose the upper end of the range for nearly every aspect of the cost of SCRs. It is unlikely that so many upper bound assumptions could be justified, and if B&V believed that they were justified, they should have explored that proposition in a risk analysis. Therefore, we believe that our approach to considering site specific conditions that would lead to costs outside of the normal range, is justified.

Comment: Private citizens submitted comments that the costs to PNM will be, alternatively, $250, $500, or $750 million dollars, and that PNM's estimates are overstated, and that any investment in the plant is an investment in the future, and that the plant and its jobs will not be threatened by the proposed emission reductions.

Response: As we discuss elsewhere in our response to comments, we agree that the cost of installing SCR on the four units of the SJGS is considerably lower than PNM estimated.

Comment: The CAA visibility provisions, EPA's own RH regulations, and the preambles to those rules all envision a "source-by-source" approach to BART, which by its nature must account for site-specific challenges at each facility. However, despite the significant amount of information provided by PNM in its original BART analysis, in subsequent exchanges with the New Mexico Environment Department (NMED) and EPA, and in meetings between EPA and PNM specifically to discuss the site-specific challenges at SJGS, EPA did not to take into account many of the most significant costs that are essential in calculating an accurate cost estimate of installing SCRs at SJGS.

Response: We agree that a source-by-source analysis is appropriate, but we do not believe that B&V provided an acceptable analysis. First, the B&V costs were extrapolated from other facilities, based on confidential information that was not provided in response to our requests. Second, the B&V costs were estimated using worst-case upper bounds in lieu of making a site-specific estimate, as discussed above. Third, their costs included components that are not required at this site, and further assumed contingency factors beyond those normally expected. Therefore, we believe, with the exception of certain issues related to site congestion that are addressed separately in other comments, site-specific conditions were properly considered.

Comment: To justify the approach based entirely on the median of different control technologies, EPA downplays the complicated process of designing and constructing an SCR, thereby not only ignoring the technology itself, but also the site specific-factors that must be considered at SJGS. SCRs at SJGS would have to be constructed so that each SCR can be positioned at the proper point in the flue gas stream, which will significantly complicate the foundation and supports that will be needed, resulting in additional costs of $35,630,000 that EPA failed to recognize or consider.

Response: All SCRs have to be constructed so that each SCR can be positioned at the proper point in the flue gas stream, with proper foundation and supports; this is not unique to the

SJGS. Over 300 retrofit SCRs have been installed since the early 1990s in the United States. Accordingly, constructability issues are well understood. Standard design and construction management methods have been developed from these 300+ existing installations.[14] This experience would inform the design and construction of the SJGS SCR, resulting in significant economies compared to the estimates presented by B&V based on a very rough preliminary design that has not been optimized for constructability. The record does not identify any unusual site-specific conditions that would result in direct installation costs for SJGS that are substantially higher than upper bound direct installation costs reported by other SCR design firms for similarly complex sites. In fact, B&V has provided no support in the record for its assumptions. Finally, the design costs are not a direct installation cost, but rather indirect costs discussed elsewhere in our response to comments.

Comment: EPA suggests that the engineering needed to design four SCRs can be completed all at the same time, thus saving time and money. While some economies may arise with a multiple SCR installation, as lessons learned in designing and installing one SCR are applied to the next, a three-year deadline would require PNM to design all four SCRs at the same time. Designing all four SCRs at once would require four separate design and construction teams, which would eliminate the opportunity to apply any experience gained. As a result, the costs associated with designing the SCRs will be much higher on a shorter timeframe, not lower as EPA appears to suggest. The short, three-year deadline also allows no time for additional design work that may be needed to address unforeseen engineering challenges that are likely to arise at each unit.

Response: We disagree with this comment and believe it mischaracterizes our analysis. In our proposal, we simply noted that "multiple unit discounts may apply to much of this equipment."[15] Multiple unit discounts were not assumed in our revised cost analysis. It is well established that economies arise from constructing multiple units at a single site. Economies will arise, for example, from common equipment that would serve all four units, such as the ammonia injection system and the control system. Economies arise from shop and material discounts based on quantity. Our cost analysis, however, did not assume any discount for multiple unit discounts. Regardless, for other reasons as stated elsewhere in our response to comments, we are finalizing a schedule which calls for compliance with the emission limits within 5 years – rather than 3 years – of the effective date of our final rule.

Comment: The proposed FIP costs do not acknowledge, or take into account, the $330 million incurred in the past five years implementing a comprehensive emission control plan at SJGS. EPA's proposed BART determination for the SJGS is too expensive and EPA should accept the recently installed pollution control equipment at the SJGS as BART.

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[14] J.A. Hines and others, Design for Constructability -- A Method for Reducing SCR Project Costs, Mega, 2001, available at: http://www.babcock.com/library/pdf/br-1720.pdf; *see also* Institute of Clean Air Companies (ICAC), White Paper, Selective Catalytic Reduction (SCR) Control of NOx Emissions from Fossil Fuel-Fired Electric Power Plants, May 2009, EPA-R09-OAR-2009-0598-0032 and Walter Nischt and others, Update of Selective Catalytic Reduction Retrofit on a 675 MW Boiler at AES Somerset, ASME International Joint Power Generation Conference, July 24-25, 2000, available at: http://www.babcock.com/library/pdf/br-1703.pdf.

[15] Revised BART Cost Effectiveness Analysis for Selective Catalytic Reduction at the Public Service Company of New Mexico San Juan Generating Station, November 2010, p. 5.

Response: We did, as part of our NOx BART evaluation, consider the controls previously installed by PNM as a result of its March 10, 2005 consent decree with the Grand Canyon Trust, Sierra Club, and NMED. These controls included the installation of low-NOx burners with overfire air ports, a neural network system, and a pulse jet fabric filter. However, when making the NOx BART determination, we are obligated by the RHR to examine additional retrofit technologies.[16] In so doing, we have determined that SCR is cost effective and results in significant visibility improvements at a number of Class I areas, over and above the existing pollution controls currently installed.

Comment: EPA proposes to conclude that, because the SJGS currently is subject to a federally enforceable permit limit of 0.30 lb/MMBtu for NOx, which is less restrictive than the WRAP modeling's assumed NOx rates for those units (as characterized by EPA), additional NOx emission controls are required. EPA, however, proposes on this basis to determine that the BART emission limit for units 1 through 4 at SJGS is not 0.27 (or 0.28) lb/MMBtu but is instead 0.05 lb/MMBtu based on the application of SCR technology. As a result, EPA discontinues its evaluation of other technologies before fully assessing their relative cost-effectiveness and other factors mandated by section 169A(g)(2) of the CAA. EPA's analytical approach is in conflict with its own BART rules and is inconsistent with a logical approach to assessing relative cost-effectiveness of various technology options.

Response: We disagree with this commenter's characterization of our analysis. As discussed in our proposal (76 FR 491), once we established that units 1, 2, 3, and 4 of the SJGS were subject to BART, we conducted a full five factor BART analysis (40 CFR 51.308(e)(1)(ii)(A)), rather than relying on the WRAP modeling. In conducting the BART analysis, we identified all available retrofit control technologies, including Selective Non Catalytic Reduction (SNCR), considering 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 improvement in visibility which may reasonably be anticipated to result from the use of such technology. In so doing, we did assess other NOx control technologies. [17]

Comment: Several commenters stated EPA should follow its own promulgated RHR and follow New Mexico's recommendation for BART determinations These commenters are referring to the proposal that was sent to New Mexico's Environmental Improvement Board on February 11, 2011 (later formally submitted to EPA on July 5, 2011). The proposed revision to the SIP finds that BART for SJGS is SNCR - not SCR. One commenter believed that the application of the 2005 BART Guidelines supports a NOx emission rate for the SJGS of between 0.23 to 0.39 lb/MMBtu, as opposed to our proposed FIP of 0.05 lb/MMBtu, which requires costly SCR technology. One commenter stated the presumptive limits should be required "unless you [the BART-determining authority] determine that an alternative control level is justified based on consideration of the statutory factors." 70 FR at 39171. Except for cyclone boilers (which are not present at SJGS), this commenter noted, our presumptive NOx BART limits are not based on application of SCR; as noted above, they are instead based on the use of

[16] "You are expected to identify potentially applicable retrofit control technologies that represent the full range of demonstrated alternatives." 70 FR at 39164.
[17] 76 FR at 499.

combustion controls. Further, EPA determined that when current combustion control technology would be insufficient to meet the presumptive limits, it would be appropriate to "consider whether advanced combustion control technologies such as rotating opposed fire air should be used to meet these [presumptive] limits." *Id*. at 39172. Another commenter asserted that a proper BART assessment would take the presumptive limits into account by beginning with the assumption that the established presumptive limit for these units is appropriate, and then would proceed with an analysis of whether the least stringent control options could achieve that limit. A five-factor BART analysis of increasingly stringent control options could then properly assess incremental costs (and cost-effectiveness) and any benefits of requiring more stringent controls.

Response: We note the RHR states:

> For each source subject to BART, 40 CFR 51.308(e)(1)(ii)(A) requires that States identify the level of control representing BART after considering the factors set out in CAA section 169A(g), as follows:
> States must identify the best system of continuous emission control technology for each source subject to BART taking into account the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use at the source, the remaining useful life of the source, and the degree of visibility improvement that may be expected from available control technology[18]

The RHR also states:

> States, as a general matter, must require owners and operators of greater than 750 MW power plants to meet these BART emission limits. We are establishing these requirements based on the consideration of certain factors discussed below. Although we believe that these requirements are extremely likely to be appropriate for all greater than 750 MW power plants subject to BART, a State may establish different requirements if the State can demonstrate that an alternative determination is justified based on a consideration of the five statutory factors. [19]

We followed the five statutory factors when assessing NOx BART at the SJGS, in determining that a different level of BART control was warranted.[20] This analysis included an examination of whether other technologies should be BART for the SJGS. We also performed our BART evaluation on the basis of increasingly stringent levels of control and assessed incremental costs and cost effectiveness. Thus, we do not believe we improperly truncated the NOx BART assessment for the SJGS.

We received a New Mexico RH SIP on July 5, 2011. This SIP does contain a revised BART analysis that concludes that NOx BART for the SJGS should be SNCR and an emission rate of 0.23 lb/MMBtu on a 30-day rolling average. We will review the State RH SIP submittal, and if

[18] 70 FR at 39158.
[19] 70 FR at 39131.
[20] 76 FR 491, 499.

there is significant new information that changes our analysis, we will make appropriate revisions to today's decision. However, the State RH SIP recommends SNCR as BART, and we have considered that technology in the context of responding to other comments in this notice. For the reasons discussed in our proposal (76 FR 491), and in other responses to comments, we have concluded that BART for the SJGS is an emission limit of 0.05 lbs/MMBtu, based on a 30 BOD average, more stringent than the levels achievable by the SNCR technology recommended by the State.

Comment: To meet a three-year deadline, PNM would have to prefabricate as much of the SCRs as possible. In addition, a three-year deadline would also require significant overtime hours, expedited material costs, double "heavy long-lift" crane costs, and a larger construction workforce overall. Because these costs would never be incurred in the normal course of installing SCRs, PNM did not include these costs in its analysis, but they would be unavoidable in the event a three-year deadline is required. Such a short construction deadline would also exacerbate the shortage of skilled labor caused by the significant number of similar projects that are either ongoing or planned for the near future in the region. The failure to account for the additional labor costs associated with such a short timeframe, particularly given other factors affecting the market for skilled labor, renders both the three-year deadline and the cost estimate prepared by EPA unrealistic.

Response: The information in the record does not demonstrate a shortage of labor necessary to complete the installation of SCRs at the SJGS. However, as stated elsewhere in our response to comments, we have modified the schedule for compliance with the emission limits to now require compliance within 5 years – rather than 3 years -- from the effective date of our final rule. We believe this compliance schedule will provide adequate time to schedule the necessary labor resources for the installation of controls at the SJGS.

Comment: The NPS recommends that in addition to the $/ton metric, we evaluate the visibility metric $/deciview as an additional tool to report the benefits of emissions controls. The NPS contends that BART is not necessarily the most cost-effective solution. Instead, it represents a broad consideration of technical, economic, energy, and environmental (including visibility improvement) factors. The NPS notes that one of the options suggested by the BART Guidelines to evaluate cost-effectiveness is $/deciview. The NPS believes that visibility improvement must be a critical factor in any program designed to improve visibility. The NPS goes on to provide several examples of $/deciview calculations.

Two other comments recommend we employ the $/deciview metric. One commenter states EPA has not appropriately considered the costs of compliance for any proposed BART for the SJGS because it relies on a $/ton metric. The commenter maintains that cost should be related to the amount of visibility improvement that it is projected to achieve and proposes the $/dv as the means for making a rational comparison of the relative cost-effectiveness of control measures.

This commenter also states that a method that aggregates projected visibility improvement in each affected class I area is not appropriate for several reasons. That approach masks the fact that it is cumulative over time and space and does not represent actual change at

any one class I area. That approach also ensures an artificially low measure of cost-effectiveness simply by allowing the control cost to be divided by a larger value. The commenter suggests that a $/dv metric expressed as a range of the values for each affected class I area would be an appropriate means for comparing cost-effectiveness of different controls. The commenter states that EPA's current measure of cost-effectiveness in terms of $/ton is virtually meaningless in the context of the RH program. Thus, EPA's assessment of the $/ton costs of BART candidates for the SJGS is flawed because the premise for its use is faulty, i.e., a change in emissions is not a suitable surrogate to represent a change in visibility.

Another commenter believes that a dollar per deciview of visibility improvement metric would be more in line with the overall goal of the RH program, namely to improve visibility in national parks and wilderness areas. To properly gauge cost-effectiveness, EPA must consider the fact that installing SCRs at San Juan will cost between $78 million and $336million per deciview, depending on the Class I area.

Response: The BART Guidelines require that cost effectiveness be calculated in terms of annualized dollars per ton of pollutant removed, or $/ton[21]. The commenters are correct in that the BART Guidelines list the $/deciview ratio as an additional cost effectiveness measure that can be employed along with $/ton for use in a BART evaluation. However, the use of this metric further implies that additional thresholds of acceptability, separate from the $/ton metric, be developed for BART determinations for both single and multiple Class I analyses. We have not used this metric because (1) we believe it is unnecessary in judging the cost effectiveness of BART, (2) it complicates the BART analysis, and (3) it is difficult to judge. We conclude it is sufficient to analyze the cost effectiveness of potential BART controls using $/ton, in conjunction with the modeled visibility benefit of the BART control. We have addressed the commenter's statement that we should not aggregate visibility improvement over Class I areas elsewhere in our response to comments.

2. Comments on Specific Cost Line Items

The comments that follow have been summarized to capture each one's main points and most of the references have been removed. The reader is encouraged to refer to our *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP* for more details and references.

Comment: The NPS stated that PNM has improperly rejected use of the Cost Manual in favor of methods not allowed by EPA. The NPS states the SCR cost estimates submitted by PNM are severely lacking in the types of specific information needed to give them credibility. The NPS goes on to provide a great deal of detailed information that supports their opinion that specific cost items were overestimated. This information includes the following cost item categories:

- Appropriateness of using the Cost Manual
- Problems in B&V's scaling of cost items from another project

[21] 70 FR 39167.

- Ductwork and ammonia grid costs
- Reactor box and breaching
- Expansion joints
- Sonic horns
- Elevator
- Structural steel
- SCR bypass
- Catalyst
- NOx monitoring
- Auxiliary electrical system upgrades
- Instrumentation and control systems
- Air preheaters
- Balanced draft conversion
- Contingencies
- Operating Labor
- Reagent
- Auxiliary power demand
- Catalyst life
- Interest rate
- Effect on cost of PNM's assumption of an emission rate of 0.07 lbs/MMBtu

The NPS concluded their critique of PNM's cost estimate with their own estimate of an average cost of $2,600/ton for the four units of the SJGS.

Response: We agree with the general contention that many individual cost items for the installation of SCR on the units of the SJGS were overestimated by PNM. Please see elsewhere in our response to comments for our opinion regarding the appropriate estimated costs for these and other cost items. We note that the NPS estimate of an average cost of $2,600/ton for the four units of the SJGS closely agrees with our own revised estimate.

Comment: EPA failed to account for the costs associated with ensuring sufficient auxiliary power to operate SCRs at SJGS. EPA discounted by nearly 80 percent the estimated cost of the auxiliary power upgrades needed to power the SCRs. The theory behind this sharply discounted cost estimate is that the SCRs will only be responsible for approximately 20 percent of the total draft pressure of the units and that therefore the cost of the auxiliary power upgrades should be allocated in similar fashion. Without SCRs, no additional auxiliary power would be needed. As such, those costs must be included in the cost of the SCRs, as they represent one of the site-specific concerns that could make the installation of SCR at SJGS more difficult than other units. The decision by EPA to exclude these costs underestimates the cost of SCRs for SJGS by $73,175,000.

Response: We disagree that installing SCRs would by itself trigger the need to upgrade the auxiliary power system, especially to the extent proposed by PNM. The upgrade benefits the entire auxiliary power system. The modifications, for example, include new transformers, switchgear, and motor control centers that will serve the entire fan auxiliary loads of both the

Consent Decree projects and the SCR.[22] The modifications also include replacing the existing fans with upgraded units. These fans will service more than just the SCRs.

This comment advocates attributing 100% of the cost of the auxiliary power system upgrade, recognized after the fact, to the last project to be implemented, the SCR. We did not "discount" the cost of the auxiliary power system by 80%, but rather distributed it among the control projects planned around the same time that triggered its need according to each control's contribution to draft pressure lost. This recognizes that the upgrade provides benefits to the entire system and includes elements that are more than strictly necessary because of the installation of the SCR. Therefore, it is not appropriate to attribute the entire cost of the upgrade to the SCR project. We believe our approach is consistent with standard engineering practices.

Comment: EPA failed to account for additional costs associated with protecting the air preheater following an SCR Installation. Ammonia reacts with sulfur in the flue gas downstream of the SCR forming ammonium bisulfate (ABS), which condenses in the air preheater. ABS is an acidic substance that forms a sticky deposit on heat transfer surfaces, resulting in both corrosion of the equipment and the collection of fly ash that plug passages, which ultimately impairs the efficiency and reliability of the unit. As such, the installation of a retrofit SCR generally requires a modification to the air preheater to allow for easier cleaning of the basket surfaces in order to protect the heat transfer elements against the potential damage that might otherwise result from ABS. EPA deleted the costs of protecting the air preheater in its SCR cost analysis, "pending compelling justification that they are required for the SCR." EPA's cost analysis recognizes that modifications to the air preheater are generally required for "units that burn high sulfur coal," but EPA assumes that such modifications are not necessary "for a properly designed SCR on a boiler that burns low sulfur coal." EPA is correct that, in spite of the quoted discussion above, Sargent & Lundy did not recommend air preheater modifications in the SCR cost analysis for the Navajo Generating Station. However, that recommendation was based on the specific emission characteristics at Navajo Generating Station, which differ significantly from those at SJGS.

Response: This comment attempts to distinguish the emission characteristics of Navajo Generating Station and the SJGS by pointing to differences in the coal quality to support air preheater modifications at SJGS but not at Navajo. We obtained and analyzed the Navajo design basis coal quality. The differences in coal quality are either not material (sulfur, heat content) or mitigate the potential impacts of ammonium bisulfate plugging (higher ash at SJGS). The key factors that determine whether ammonium bisulfate plugging will occur are not coal quality, but rather the amount of sulfur trioxide (SO_3) and ammonia in the exhaust gases that reach the air preheater and the air preheater temperature regime. The formation of ammonium bisulfate depends on the relative amounts of ammonia and SO_3 in the exhaust gases. When the molar ratio is more than 2:1, ammonium sulfate (not ammonium *bi*sulfate) is preferentially formed. The average molar ratio for both SJGS and Navajo over the catalyst lifetime is much higher than 2:1. Thus, ammonium sulfate would be preferentially formed. Ammonium sulfate is a dry powder at all air preheater operating temperatures and does not create a fouling problem. Thus, consistent with Sargent & Lundy's conclusion for the nearby Navajo Station, which burns a similar coal,

[22] B&V 10/22/10 Cost Analysis, Sec. 3.0 and 11/4/10 Norem Email to Kordzi, Re: Questions on PNM's Revised Cost Estimate for the SJGS SCR Project, Response to Question 3, Table 3 of attachment 1.

ammonium bisulfate fouling would not be expected and we do not believe that upgrades are justified for the air preheaters due to SCR installation.

Comment: The installation of SCR at SJGS would increase the resistance in the flue gas path for the units. To overcome that additional resistance, PNM would need to install new higher capacity fan rotors and motors because the SCRs will add an additional pressure drop in the system of 10 inches of water gauge (w.g.). This change in pressure and higher fan pressure ratings would increase the potential risk of a boiler implosion during transient (upset or malfunction) conditions. The analysis prepared by B&V of the expected cost of an SCR retrofit includes the costs to mitigate the implosion risk by converting to balanced draft and stiffening the boiler and associated flue gas path. EPA concludes that additional boiler stiffening would not be required, stating simply that "a balance draft conversion with the proposed stiffening is not part of an SCR project."

Response: The basis for selecting 10 in. w.g. for a 77% NOx removal SCR is not explained or documented in the record. The overall SCR system pressure drop consists of losses from the SCR catalyst, static mixers, and duct work. Determining the pressure drop due to the SCR requires a more advanced design than presented in the B&V BART analysis. Instead, B&V appears to have assumed that the pressure drop due to the SCR would be 10 in. w.g., which is at the upper end of the usual range of 3 to 10 in. w.g. The B&V record, for example, contains no duct arrangement drawings; no catalyst vendor quotes; does not identify the type of catalyst, e.g., honeycomb or plate; does not specify the catalyst pitch; and is silent as to static mixers, all important factors in determining the pressure drop due to the SCR. Thus, we do not believe there is a basis for the 10 in. w.g. used to cost boiler stiffening and to justify balanced draft conversion. This pressure drop likely has not been optimized and could be significantly reduced by catalyst selection (e.g., by using honeycomb with large pitch) and ductwork design. Therefore, we do not concur that the record supports a pressure drop of 10 in w.g. for the SCR.

Comment: Installation of SCR's at SJGS will increase boiler and duct implosion potential due to increased draft system requirements and fan pressure ratings. SCRs will trigger the need to choose between either designing to the general standard of +/- 35 inches w.g. (which is typical for a newly designed power plant) or performing a "more complete and rigorous analysis" to determine whether PNM will qualify for an exception from the generally-applicable implosion protection standard through the use of alternative methods. To date, neither PNM nor its consultants have fully determined whether an alternative to the +/- 35 inches w.g. standard would suffice following installation of an SCR, due to the significant amount of time and expense that would be associated with that analysis. Therefore, B&V included the cost of stiffening the boilers to +/- 35 inches w.g. in its analysis. EPA's failure to properly account for the boiler stiffening costs underestimates the cost of the SCR retrofits for SJGS by $55,718,000 in capital costs for boiler stiffening and properly sized fans and motors.

Response: This comment acknowledges that the boiler stiffening costs represent a worst case estimate. The magnitude of these costs is unusual. The BART Guidelines require that unusual costs be documented in the record. These costs are stated without providing the underlying engineering calculations. PNM states that the boilers were stiffened to negative pressure differentials of 18 in. w.g. during the Consent Decree projects. The 10 in. w.g. estimate

is a worst-case upper bound that is not supported by vendor quotes and SCR design. We agree some cost for code compliance is warranted. However, the worst case used in B&V's analysis is unreasonable and unsupported, given the SCR's potential upper bound contribution of 10 in. w.g. Absent the "more complete and rigorous analysis" to support upper bounds for both an SCR pressure differential and stiffening to +/- 35 in w.g., we feel stiffening costs should have been based on no more than the SCR's contribution to the increase from current conditions of 18 in. w.g. to 35 in. w.g. Thus, we modified our cost analysis to estimate the stiffening cost based on the SCR's maximum contribution to the increase from 18 in. w.g. to 35 in. w.g. or by 59%. This increased our estimate of the capital cost to install SCRs by $19,258,318.

Comment: EPA failed to account for the cost of installing the initial layers in the SCR. The cost analysis prepared by B&V included the cost of the initial layers of catalyst in the capital cost and including the replacement layers in the annual operating cost calculation. EPA, however, appears to have misunderstood the analysis and assumed that the initial catalyst layers were double-counted. As a result, it subtracted the initial catalyst cost from the capital cost calculation, without adding it to the annual cost calculation. As such, EPA's failure to include the cost of the initial layers of catalyst in its analysis underestimates the cost of installing SCRs at SJGS by $33,556,000.

Response: We agree with this comment. We have revised our cost analysis to include the initial catalyst charge.

Comment: Sorbent injection will be needed if PNM must install SCRs at SJGS, and the EPA cost analysis should reflect those costs. Sorbent injection systems are often used at coal-fired power plants equipped with SCRs to help reduce emissions of sulfuric acid mist that are an unavoidable byproduct of the chemical reactions that occur in an SCR. Sulfuric acid mist resulting from SCR operation has been known to cause a visible plume at some units in the industry. Although the installation of SCRs may not result in such a plume at SJGS, the sorbent injection system would be needed to ensure a visible plume does not materialize. The failure to address the sulfuric acid mist created by the SCR can reduce any visibility benefits associated with an SCR.

Response: We disagree with this comment. B&V updated its cost analysis in October 2010. This is the most recent version of B&V's cost analysis, which was critiqued in our Technical Support Document (TSD) in our proposal. This analysis did not include any costs for sorbent injection. In its June 21, 2010 BART Determination, NMED concluded that BART for SJGS was SCR plus sorbent injection to remove SO_3 and requested a sorbent injection cost analysis from PNM. However, we disagreed and concluded that sorbent injection was not required due to the low sulfur content of the coal, availability of low conversion SCR catalyst, and our calculations. We see no reason to change that view. The reasons advanced in this comment for requiring sorbent injection to control sulfuric acid mist (SAM) are not applicable to the SJGS SCR. Visible plume issues have only been experienced at units that burn high sulfur coal, containing greater than 2+% sulfur and typically over 3% sulfur, e.g., Gavin, Ghent. The coal burned at SJGS contains 0.77% sulfur, much lower than the amount of sulfur that has resulted in visible plume issues elsewhere and is considered to be low sulfur. No explanation is provided for why the commenter believes a plume may "materialize" on installing SCR. If the

SCR is properly designed to address SJGS's coal, a plume should not materialize. Low conversion catalysts capable of achieving an SO_2 conversion as low as 0.1% per layer of catalyst in the high dust, hot (>650 F) position and 0.5% across the entire SCR reactor are common in higher sulfur and other applications. Even lower levels can be achieved if the catalyst is regenerated.

Comment: EPA's calculation of sulfuric acid emissions is incorrect. EPA estimated sulfuric acid mist emission levels based on a document prepared by the Electric Power Research Institute (EPRI), which describes a formula used by many utilities to estimate sulfuric acid emissions. However, in applying that formula, EPA assumed an ammonia slip value of 2.0 parts per million (ppm), even though actual ammonia slip varies over the life of a catalyst layer from very low values up to 2.0 ppm as the catalyst ages. A more appropriate assumption for ammonia slip is the 0.75 ppm value recommended by the EPRI formula, which better represents the expected ammonia slip over the life of a catalyst. Using that assumption, the sulfuric acid emissions from SJGS are calculated to be twice that assumed by EPA. As a result, EPA's attempt to justify its decision to delete the costs of sorbent injection based on minimal sulfuric acid mist emissions is incorrect.

Response: The commenter is correct in that the EPRI report does suggest that a value of 0.75 ppm should be used. We note that the ammonia slip of an SCR is minimal when the catalyst is new and increases as the catalyst ages. In order to be conservative, we recalculated the sulfuric acid emission rate, based on zero ammonia slip, to be 2.6 $X10^{-4}$ lb/MMBtu, compared to our original value of 1.06 $X10^{-4}$ lb/MMBtu at 2ppm ammonia slip. The 2.0 ppm we selected in our proposed visibility modeling was based on the maximum slip from PNM's design specifications. This revised sulfuric acid emission rate remains significantly lower than that estimated by NMED and is a minimal level of sulfuric acid emissions. We continue to conclude that sorbent injection is not required due to the low sulfur content of the coal, availability of low conversion SCR catalysts, removal by existing control equipment and our revised calculations.

Comment: The EPA also cites to the results of a stack test performed at the Navajo Generating Station in November 2009 to conclude that actual sulfuric acid mist emissions are lower than would be estimated using the EPRI Method. However, the air quality control industry generally considers sulfuric acid testing to be very prone to inaccuracy because the test methods used are susceptible to bias. Also, sulfuric acid emissions vary significantly from unit to unit because emissions removal is dependent on many variables including temperature, moisture, process operation, air quality control equipment, ambient conditions, and the quality of the testing. As mentioned above, SJGS and the Navajo Generating Station differ significantly in many of these respects. Therefore, it is not appropriate to use test results from Navajo Generating Station to make assumptions about SJGS.

Response: We believe this comment mischaracterizes our analysis. We did not use test results from the Navajo Generating Station to make assumptions about the SJGS. Rather, we compared sulfuric acid mist emissions calculated for Navajo using the EPRI procedure with a stack test at Navajo in accordance with EPA Method 8A procedures. Thus, we compared Navajo EPRI estimates with Navajo test data to judge the accuracy of the EPRI procedure. This comparison suggests that the EPRI method may overestimate sulfuric acid mist emissions when

firing a similar coal if PNM's assumptions are used. This analysis supports the conclusion that the EPRI method and parameters we used provide a better estimation of sulfuric acid emissions than the methodology and parameters utilized by PNM and NMED in their analysis, which overestimates these emissions. We also note that PNM estimates for sulfuric acid emissions that were reported to the Toxic Release Inventory in recent years are much lower than those estimated by PNM for their BART analysis.

Comment: It is appropriate to include sorbent injection costs in the SCR cost analysis because sorbent injection may be required by law. The Prevention of Significant Deterioration (PSD) program under the CAA requires major sources to install additional controls to address any significant net emissions increases resulting from a physical change to an emissions unit. Because the SCR will constitute a physical change to the SJGS emission units, and could have the potential to result in a significant net emissions increase in sulfuric acid mist, additional controls could be required by the PSD program. If triggered, the PSD program would require the installation of "best available control technology," which for sulfuric acid mist emission increases would likely include a sorbent injection system. Although there remains some uncertainty as to whether the SCR would trigger PSD permitting requirements, PNM believes it is appropriate to include the cost of the system in the SCR cost analysis, and the failure to include those costs underestimates the cost of the SCRs by $12,118,000.

Response: For the reasons outlined elsewhere in our response to comments, we believe the level of sulfuric acid generated at the SJGS will be so low that sorbent injection will not be needed. However, it is possible that the installation of SCR on all four units of the SJGS could generate enough additional sulfuric acid that a PSD review could be triggered. EPA is not the permitting authority for sources in New Mexico but we believe it is reasonable to anticipate that a subsequent BACT analysis for sulfuric acid emissions at the SJGS will determine that no additional controls are required because despite the projected increase in sulfuric acid emissions, emissions are expected to remain low. In considering SCR for controlling NOx, EPA specifically considered the issues of sulfuric acid formation. In our review, we believe that the emission limits for NOx can be achieved through the use of lower reactivity catalyst, thus mitigating the formation of sulfuric acid across the catalyst bed. We have set an emission limit for emissions of sulfuric acid that restricts the increase of sulfuric acid. According to the two most recent Toxic Release Inventory (TRI) reports submitted by SJGS, the total sulfuric acid emissions are very low (17.77 TPY for 2009, and 27.5 TPY for 2008). Based on our calculations, we believe the current emissions of sulfuric acid to be significantly lower than these reported values due to the low sulfur content of the coal and the removal of sulfuric acid in the installed control equipment, including wet scrubbers and fabric filters. We project, with the implementation of SCR using a low reactivity catalyst that total emissions of sulfuric acid will remain below 22 tons/year.[23] In this particular case, sorbent injection technology is unlikely to be cost-effective on a cost per ton basis of sulfuric acid mist removed. Again, we note that the New Mexico Environmental Department is the permitting authority and has the primary responsibility to implement the New Source Review program which includes the PSD permitting process, and the issuance of the applicable permit. NMED will be responsible for determining if

[23] Based on our emission limit of 2.6×10^{-4} lb/MMBtu and conservatively assuming each unit operates 100% of the year (8760 hr/yr) .

PSD will be triggered for increases in sulfuric acid emissions or other NAAQS pollutants and in determining the BACT for such increases.

Comment: EPA failed to account for the additional steel that will be needed due to site congestion at the SJGS. EPA assumed that the "complexity factor" applied to the structural steel cost in PNM's cost analysis was a "contingency factor." As such, EPA assumed that PNM had double-counted contingency costs by using both the "complexity factor" for structural steel and a more general "contingency factor" overall. PNM asks EPA to reconsider the analysis provided by B&V, given that the engineers at B&V made several site visits to SJGS and designed the SCRs for the St. John's River Power Park (SJRPP). The pictures of SJRPP and SJGS provided by B&V illustrate the differences in site congestion. EPA underestimated the cost of its BART proposal by $35,087,000 by failing to accurately account for site congestion.

Response: A complexity factor is a subset of a contingency factor as it estimates unknown costs. PNM applied a complexity factor of 1.2 for Units 1 and 4 and 1.5 for Units 3 and 4. We regard these factors as rough estimates that cannot be fully determined until the SCR is designed. We visited the SJGS plant on May 19, 2011.[24] This visit confirmed that the site is congested. However, this does not confirm that the cost of structural steel for Units 1 and 4 would be 1.2 times higher than at SJRPP, and 1.5 times higher for Units 2 and 3, as this comment contends. The materials provided by PNM do not contain any plot plans or design drawing for SJRPP (or SJGS) that would allow one to conclude anything about the cost of structural steel at one facility compared to the other. Photographs attached to the PNM comments indicate more room for crane access at SJRPP than at SJGS, but this does not address the capital cost of the structural steel framework, only the cost of constructing it.

The BART Guidelines require that "documentation" be provided for "any unusual circumstances that exist for the source that would lead to cost-effectiveness estimates that would exceed that for recent retrofits." We specifically asked PNM to identify any retrofit constraints and support them with engineering calculations, drawings, and photographs. PNM has not provided specific documentation that supports the use of their chosen structural steel complexity factors. Nevertheless, based on the information that was provided, we have modified our cost analysis to use B&V's estimate for structural steel, which includes the "complexity factors" cited in this comment, as B&V produced designs for both facilities.

Comment: EPA failed to account for the SCR bypass that will be necessary to protect the SCR during startup on oil. EPA assumed that SJGS could initiate startup of its units on oil without fouling the catalyst in the SCR. EPA's justification for the removal of this cost line item was that fuel oil is efficiently burned in modern low NOx burners with oil igniters, citing two coal-fired units that have shown the ability to startup on oil without a bypass and two oil-fired boilers with SCRs that do not have a bypass. Based on these references, EPA concluded that SJGS will be able to startup on oil without risking catalyst fouling resulting from a coating of incompletely combusted fuel oil. The failure to account for the needed SCR bypass system underestimates the cost of installing SCR at SJGS by $126,484,000.

[24] See San Juan Generating Station Site Visit, 5/23/11.

Response: We disagree with this comment. The removal of SCR bypass costs was based on several factors. First, a noted air pollution handbook concluded (before U.S. ozone season trading programs made them routine): "most applications do not have SCR bypasses, since routines are used during startup and shutdown which preclude their need" (Cho and Dubow),[25] and regulations sometimes prohibit their use. Also, experience in Japan and Germany has shown them to be costly and not required to prevent damage due to low-load oil firing, thermal gradients, and other conditions. We believe a bypass is not required in a properly designed and operated SCR system to prevent SCR catalyst fouling during startup or operation on oil. Two examples were cited in our TSD as part of our proposal to confirm this information. In addition, Sargent & Lundy, the consultant that prepared the design and cost estimate for SCR for the 3 units at Navajo Generating Station, an existing facility of similar age and retrofit complexity that starts up on oil, did not recommend an SCR bypass in its BART analysis.

Comment: The EPA cost estimate also does not properly estimate annual operating costs for auxiliary power consumption and catalyst replacement rate. B&V estimated the amount of auxiliary power needed to run the SCR to be 16,297 kW (for all four units) at a cost of $0.06095 per kWh, based on a site-specific analysis. Specifically, B&V's calculation was based on the calculation of the additional fan energy (based on flue gas flow rate and estimated pressure drop from the SCR) and the power consumption for the auxiliary equipment (such as the ammonia system). EPA, on the other hand, simply assumed a cost of 5,400 kW at $0.05 per kWh based on a percentage estimate for "typical" SCR installations. This error underestimates the cost of auxiliary power consumption when operating SCRs by $5,388,000.

Response: EPA disagrees with the comment. First, the claimed "site-specific analysis" was not submitted for inclusion in the record, and thus EPA and the public could not review it. Second, the values that would affect the cost analysis, e.g., duct length, catalyst pressure drop, would be estimates as the SCR system has not yet been designed. In fact, the record does not even contain an arrangement diagram, required to determine duct lengths. Third, the B&V estimate of the amount of auxiliary power needed to run the SCR (16,297 kW) was initially rejected by us as it amounts to 0.9% of the total gross generating capacity of the station, which is high compared to other estimates known to us. An SCR typically uses about 0.3% of a plant's electric output, which would be about 5,400 kW or three times less than assumed in the B&V cost analysis. The BART Guidelines require that unusual costs be documented in the record. PNM did not supply any additional information to support its unusually high estimate.

Fourth, as discussed elsewhere in our response to comments, no support has been provided for PNM's claim of a 10 in. w.g.[26] pressure drop due to the SCR, which is at the upper end of the usual range of 3 to 10 in. w. g. Fifth, the unit cost of electricity used by B&V, $0.06095/kWh, is much higher than the auxiliary power cost commonly used in cost effectiveness analyses, and thus was not justified. Auxiliary power is the power required to run the plant, or power not sold. Cost effectiveness analyses are based on the cost to the owner to generate electricity, or the busbar cost, not market retail rates. The B&V estimate is based on the

[25] S.M. Cho and S.Z. Dubow, Design of a Selective Catalytic Reduction System for NOx Abatement in a Coal-Fired Cogeneration Plant, Proceedings of the American Power Conference, April 13-15, 1992, pp. 717-722.
[26] 10/22/10 B&V Cost Analysis Update, Appendix B; 6/7/07 B&V San Juan BART Analysis, p. B-3.

average forecasted cost of replacement power for 2007 to 2012.[27] Thus, even if this is the correct site specific cost, it is the wrong metric for a cost effectiveness analysis. We further note that the use of forecast cost is inconsistent with the BART methodology, which is based on current dollars. We conservatively used the upper end of the range of costs assumed in BART cost effectiveness analyses ($0.03/kWh to $0.05/kWh)[28] or $0.050/kWh. After our analysis was complete, PNM responded to a question from us that its average cost of production is $0.047/kWh ($47.83/MWh). This rounds up to 0.05/kWh, the number we used. Thus, we have made no changes to our estimate of auxiliary power demand.

Comment: In its analysis, EPA recognized that the Cost Manual does provide factors to estimate certain "direct installation costs," namely foundation/supports, handling/erection, electrical, piping, insulation, painting, demolition, and relocation. However, the Control Cost Manual fails to provide factors to estimate these costs for SCR, as recognized in EPA's analysis. EPA indiscriminately took the median of the factors for other control technologies, which vary significantly from SCRs. As a result, EPA's analysis slashes in half the direct installation costs estimated by B&V. For example, the direct costs assumed by EPA for Unit 1 are $8,799,917, but that amount would only cover 159,998 man-hours, or 21 weeks of construction. EPA's own schedule, even though insufficient itself, assumes 38 weeks of construction, nearly double of the amount that EPA's analysis could afford. Thus, EPA's estimate is insufficient for its own estimated construction timeline, much less the 64 to 72 weeks of construction that PNM's experienced consultants predict.

Response: We disagree with this comment. The B&V direct installation costs were calculated by multiplying total purchased equipment costs by various unsupported percentages, a rough estimating practice referred to as "factoring." B&V did not submit into the record the basis for the various factors that they used. The percentages that B&V used are demonstrably high. We compared each of B&V's direct costs with those from a major SCR designer's (Babcock Power) database and from similar SCR projects nationwide. Foundation and supports, costed by B&V as 30% of purchased equipment cost, for example, based on its estimate of purchased equipment cost, are two to three times higher than upper bound costs reported by Babcock Power for similar sized units ($8/MW compared with the B&V estimate of $18/MW to $29/MW for SJGS). Based on these comparisons the B&V's costs were excessive. No documentation has been provided to justify the higher B&V costs.

The Cost Manual estimating procedure for direct installation costs is based on the same factoring approach used by B&V. We tabulated the factors for total direct installation costs for all controls reported in the Manual. These ranged from 30% to 85% of the purchased equipment cost. In comparison, B&V assumed direct installation costs were 103% to 113% of total purchased equipment cost.

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[27] Email from Norem to Kordzi, October 21, 2010, Re: PNM Responses to Follow-Up Questions from October 14, 2010 Conference Call Regarding BART Cost Estimate, October 21, 2010 (10/21/10 Responses), Response to Question 9, pp. 3-4.

[28] Sargent & Lundy, Sooner Units 1 & 2, Muskogee Units 4 & 5 Dry Flue Gas Desulfurization (FGD) BART Analysis Follow-Up Report, Prepared for Oklahoma Gas & Electric, December 28, 2009 , Attach. C, pdf 109; (Gerald Gentleman - $45.65/MWh; White Bluff - $47/MWh; Boardman/Northeastern/Naughton - $50/MWh; Nebraska City - $30/MWh).

We calculated direct installation costs for SJGS using the median of this range or 62% of purchased equipment cost. This is consistent with the upper bound Babcock Power estimate for actual retrofit SCR installations and estimates made by others. The B&V estimate is also high compared to direct installation costs that it reported for the SJRPP SCR, which was otherwise used to extrapolate equipment costs to SJGS. The direct installation costs for the SJRPP SCR were 95% of the total purchased cost. We have revised our cost estimate to use this percentage to conform to the balance of the B&V cost estimate.

The B&V estimate assumes a 150-man crew for the entire 21 weeks, a 50-hour workweek for the duration, and a wage of $55/hour. This represents peak staffing and labor rates, even though the number of workers would vary over time. Thus, our estimate of direct installation costs corresponds to a longer duration than claimed. Regardless, it is important to note that this duration corresponds to construction of a much smaller project (less SCR bypass, preheater modifications, etc.) than proposed by B&V. Further, for our proposal, we did not estimate construction duration, but rather the length of time from the effective date of the final rulemaking to startup of the SCR or 36 months. We note that we have revised our proposal to allow 60 months from the effective date of the rule allowing additional flexibility in deploying workers. Thus, the basis of this comment's starting point, an EPA estimate of 38 weeks, is incorrect. In addition, the B&V estimate does not contain a schedule, which is required to estimate the staffing and duration of construction.

Comment: EPA asserts that "[t]he contingencies included in the B&V cost estimates are double-counted and excessive," based on the misimpression that there are three contingencies "imbedded" in the analysis. However, two of the three allowances are for known costs, and therefore are not "contingencies." Specifically, the complexity factor for structural steel costs of 1.2 (for Units 1 and 2) and 1.5 (for Units 3 and 4) are known, expected costs, and therefore do not constitute a contingency factor, as noted previously. Also, the $2 million estimated for underground obstructions and the $500,000 estimated for on-site buildings are also known, and therefore do not represent a duplicative contingency factor. Thus, EPA's claim that PNM double-counted its contingency costs is incorrect and underestimates the cost of SCRs at SJGS by $61,978,000.

Response: This comment explains that the "complexity factor," site unknowns, and general building requirements are not contingencies, but rather known factors. Based on this explanation and the information we have about the SJGS, we concur that these complexity factors, and the engineering estimates for underground obstructions and on-site buildings, are reasonable and we have modified our cost estimates to reflect B&V's estimates.

Comment: EPA also claims that the Interest During Construction included in the B&V cost estimates are not allowed by the Cost Manual. Therefore, this cost was eliminated from the cost analysis underlying the proposed FIP. However, this cost item is a real project cost, which will be incurred by PNM to finance the project and must by recovered from the SJGS customers. The rejection of costs associated with Interest During Construction underestimates the cost of the project by $78,300,000.

Response: The B&V cost analysis include a charge for interest during construction of 7.41% of direct plus indirect costs. This charge is generally known as the Allowance for Funds Used During Construction (AFUDC) and is specifically disallowed under the Cost Manual methodology and specifically disallowed for SCRs.[29] A cost effectiveness analysis is a regulatory analysis that is based on current annual dollars without any inflation. AFUDC is an accounting method. Assets under construction do not provide service to current customers and thus associated interest and allowed return on equity are not charged to current customers. Instead, AFUDC capitalizes these costs and adds them to the rate base so that they can be recovered from future customers when the assets are used. Thus, these charges represent future cash income to the utility. In other words, AFUDC is the accumulated cost of carrying capital and holding it waiting to spend, so money can be made in the future by selling electricity. Future income should not be charged against the cost of a SCR in a BART cost-effectiveness analysis. These costs are not part of the constant dollar approach found in the Cost Manual and should not be included in BART cost-effectiveness analyses.

3. Concerns over Possible Electricity Rate Increases

Comment: Both the CAA and EPA BART regulations require consideration of the remaining useful life of a source. Requiring the imposition of possibly $1 billion or more of control technology capital costs at SJGS, a nearly 40-year old plant, presents a likely scenario where the remaining useful life of SJGS is less than the time period needed for amortizing the costs of the control technologies. As such, it could make production at SJGS during its remaining useful life uneconomical in comparison with other existing or future plants. If, in light of SJGS' estimated remaining useful life, it is determined that an investment of such magnitude does not make economic sense, owners of SJGS must evaluate alternate long-term options for meeting obligations to provide a cost-effective, reliable supply of electricity to customers. As such, the significant cost of requiring such SCR at SJGS will substantially increase the cost of electricity produced by SJGS. Over two million electric customers in New Mexico and other western states stand to be directly and adversely affected by the EPA proposal. PNM estimates that the average residential customer will experience a 10 percent increase in rates due solely to EPA's proposed SCR technology. As a result of the Proposed Rule, PNM has indicated that possible sources of replacement power may be needed to ensure it can fulfill its obligation to provide electricity to the citizens of New Mexico.

Response: The commenter is correct that the remaining useful life of a facility may impact the BART determination. As we note in the BART Guidelines,

> The ‘‘remaining useful life’’ of a source, if it represents a relatively short time period, may affect the annualized costs of retrofit controls. For example, the methods for calculating annualized costs in EPA’s OAQPS Control Cost Manual require the use of a specified time period for amortization that varies based upon the type of control. If the remaining useful life will clearly exceed this time period, the remaining useful life has essentially no effect on control costs and on the BART determination process. Where the remaining useful life is less than the

[29] EPA Air Pollution Control Cost Manual, pdf 486, Table 2.5, E (Allowance for Funds During Construction) = 0.

time period for amortizing costs, you should use this shorter time period in your cost calculations. [30]

The BART Guidelines further clarify, "[w]here this affects the BART determination, this date should be assured by a federally- or State-enforceable restriction preventing further operation."

As part of our review of PNM's BART determination for the SJGS, we met with representatives of PNM and its contractor several times, and communicated numerous times through email and phone. At no point did PNM indicate that it wished to constrain the amortization period for financing BART controls based on the remaining useful life of the facility through the use of a federally enforceable restriction.

Comment: Several local and county governments and municipal power systems expressed concern that the proposed FIP would require a major capital expenditure that could well exceed $750 million, according to PNM. Such significant costs will drastically increase the cost of power produced by the SJGS and have the potential to increase electricity rates in the communities served by the SJGS. Another commenter stated our NOx BART proposal for the SJGS would cost New Mexico or Albuquerque ratepayers $10.20 more a year, or 85 cents a month, which is the price of a candy bar, so cleaning up this decades old air pollution is affordable and now is the time to do it.

Response: As discussed in our proposal, we disagree with PNM's cost estimate for installing SCR on the four units of the SJGS. Although PNM estimated the total cost to be in excess of $1 Billion, we estimated that cost to be approximately $250 Million. As discussed elsewhere in this notice, taking into consideration various comments, we have refined our estimate to be $344,542,604. In light of the visibility benefits we predict will occur, we consider this to be cost effective. 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, we note that our cost estimate, being about 1/3 that of PNM's will result in significantly less costs being passed on to rate payers.

4. Comments that Opined on our Reliance on the EPA Air Pollution Control Cost Manual

Comment: The rejection of PNM's escalation factors is unrealistic. By relying too heavily on the Cost Manual, EPA's analysis not only omits the specific line items, it also omits or alters various estimating factors utilized by B&V in PNM's analysis. EPA relied on the Chemical Engineering Plant Cost Index (CEPCI) to escalate costs from the Cost Manual. However, although that index may be a reasonable tool for a chemical plant, it does not properly account for escalation of costs at power plants. In contrast, B&V developed an appropriate escalation factor with the help of an outside consulting firm specializing in financial analysis and forecasting, which incorporates the complete B&V database of "as-built" costs, the Bureau of

[30] 70 FR 39104, 39169.

Labor Statistics indices, and the consulting firm's database of costs and indices, all tailored specifically to the power generation industry.

Response: The CECPI, which is published monthly by the magazine, *Chemical Engineering*, has been used for decades in regulatory cost effectiveness analyses and is one of the factors that allows a comparison to be made between cost effectiveness analyses at different facilities. This method was selected by EPA's Office of Air Quality Planning and Standards for use in regulatory cost effectiveness analyses because "this index specifically covers cost items that are pertinent to pollution control equipment (materials, construction labor, structural support, engineering & supervision, etc.)."[31] The B&V escalation index, on the other hand, is proprietary and not subject to public review.

Comment: A commenter contends that EPA improperly rejected PNM's cost estimates, because EPA thought them inconsistent with the Cost Manual. The commenter states EPA should consider site-specific costs, even when those costs are not included in the Manual. The commenter further states that EPA did not take "unusual circumstances" into proper account and expresses the view that EPA did not consider site-specific elements that would eliminate available control technologies from consideration.

Response: We disagree with commenter's view that our cost analysis is improper, but we agree that the Cost Manual is not the only source of information for the BART analysis. For instance, the reference to the Cost Manual in the BART Guidelines clearly recognizes the potential limitations of the Manual and the need to consider additional information sources:

> The basis for equipment cost estimates also should be documented, either with data supplied by an equipment vendor (i.e., budget estimates or bids) or by a referenced source (such as the OAQPS Control Cost Manual, Fifth Edition, February 1996, EPA 453/B-96-001). In order to maintain and improve consistency, cost estimates should be based on the OAQPS Control Cost Manual, where possible. The Control Cost Manual addresses most control technologies in sufficient detail for a BART analysis. The cost analysis should also take into account any site-specific design or other conditions identified above that affect the cost of a particular BART technology option.[32]

The Cost Manual establishes a methodology for calculating cost effectiveness that allows comparison across multiple units. The regulatory cost is expressed in current real or constant dollars, less inflation. B&V did not follow the regulatory cost method. Instead, it used CUECost, a model that estimates control costs using the levelized cost method developed by the EPRI, which is not approved for BART determinations; extrapolation from several other projects; and its own proprietary and confidential databases not available for public review.

As to unusual circumstances, the BART Guidelines call for "documentation" to be provided for "any unusual circumstances that exist for the source that would lead to cost-

[31] Email from Larry Sorrels (OAQPS) to Don Shepherd (Park Service) with cc to Anita Lee (EPA Region 9), dated 7/21/10, concerning the SRP Navajo Generating Station SCR cost estimate.
[32] 70 FR 39104, 39166.

effectiveness estimates that would exceed that for recent retrofits."[33] PNM did not provide any documentation of unusual circumstances related to the BART determinations in any of its cost analysis.

We subsequently toured the SJGS plant site on May 19, 2011.[34] The SJGS site is congested, but not more so than other space-constrained sites where SCR has been retrofit for much less cost than estimated for SJGS.[35] Gibson, a complex, space-constrained retrofit in which the SCR was built 230 feet above the power station using the largest crane in the world[36] only cost **$**249/kW in 2010 dollars.[37] Similarly, the Belews Creek SCR, one of the largest and most complex SCR retrofit projects in the U.S., involved installing the SCR 280 feet above ground level above the boiler building. This retrofit only cost $202/kW in 2010 dollars,[38] [39] compared to cost estimates of $423/kW to $567/kW for SJGS. B&V's estimates of capital cost to retrofit SCR at SJGS ($446/kW - $599/kW) are higher than actual installed cost for Gibson and many other existing retrofit SCRs, including those with extreme retrofit difficulty. The record including the information we have about the site does not document any unusual circumstances that would justify the unusually high costs claimed by B&V for SJGS. Thus, we do not believe that unusual circumstances are warranted.

Comment: The exclusive use of the Cost Manual underestimates the expected costs for SCRs at SJGS for several reasons. First, the Manual was last updated in 2002 and Section 4.2, Chapter 2, Selective Catalytic Reduction, was actually written in October 2000. In addition, on page 2-40 of the SCR section, the Manual indicates that the costs presented are based on 1998 dollars. Therefore, the Manual does not reflect more recent experience with SCR installations, the cost of which has skyrocketed. Second, the 2002 version of the Manual was the very first version to specifically address NOx controls at all. According to the introduction to the Manual, EPA was at that time "entering new and uncharted territory for part of the Manual" because "previous editions did not discuss NOX or SO_2 controls, and [the 2002] edition starts the process of correcting that oversight." Finally, EPA also admits in the Manual that it had difficulty obtaining information on control costs because most of the information is proprietary – the very type of information to which B&V has ready access.

Response: As discussed elsewhere in our response to comments, the Cost Manual contains two types of information, general cost analysis methodology and control-specific costing information. This comment addresses the latter. The information on SCR in Chapter 2 of the Cost Manual contains general information on SCR, design procedures, and some cost

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[33] *Id*. at 39168.
[34] See San Juan Generating Station Site Visit, 5/23/11
[35] Revised BART Cost Effectiveness Analysis for Selective Catalytic Reduction at the Public Service Company of New Mexico San Juan Generating Station, November 2010, pp. 28-29.
[36] Bob Ellis, Standing on the Shoulder of Giants, Modern Power Systems, July 2002.
[37] McIlvaine, NO_X Market Update, August 2004. SCR was retrofit on Gibson Units 2-4 in 2002 and 2003 at $179/kW. Assuming 2002 dollars, this escalates to ($179/kW)(550.7/395.6) = $249/kW. http://www.mcilvainecompany.com/sampleupdates/NoxMarketUpdateSample.htm.
[38] Bill Hoskins, Uniqueness of SCR Retrofits Translates into Broad Cost Variation, PowerGen Worldwide, May 2003. Available at: http://www.power-eng.com/articles/print/volume-107/issue-5/features/uniqueness-of-scr-retrofits-translates-into-broad-cost-variations.html.
[39] Escalated from $145/kW: ($145/kw)(560.3/401.7) = $202/kW. Chemical Engineering, April 2011

information. We agree that the cost information does not reflect current market costs. Thus, cost data should be escalated to current dollars using the CECPI before it is used or replaced with site-specific vendor quotes. We did not use any SCR costs data from this chapter in our analysis.

Comment: The EPA cost estimate only differs from the Cost Manual where doing so would serve to reduce the amount of the cost estimate. For example, EPA applied an SCR life span of 30 years instead of the 20 year life span provided in the Cost Manual. The justification for choosing a different life span than provided for in the Manual is that other facilities have requested 30 year life spans in requests for proposal and some unidentified SCRs in Europe have lasted that long. If such general, anecdotal information were sufficient to convince EPA to stray from the Cost Manual, the EPA analysis should be replete with variations from the outdated Cost Manual. The use of a 30-year lifespan underestimates the cost estimate of SCR by $15,268,000.

Response: We disagree with this comment and we used the Cost Manual appropriately, as directed by the RHR. We used it for cost factors that for reasons expressed elsewhere in our response to comments, we feel were miscalculated by B&V, but were not otherwise available in the public domain. We did not use any actual cost data from the Cost Manual. In the case of SCR lifetime, the Cost Manual does not recommend a lifetime for an SCR, but rather sets out a calculation example that uses a lifetime of 20 years. In fact, this same calculation makes many other assumptions that we felt were not applicable to SJGS and if used anyway, would have resulted in lower cost estimates, but which were not used in our analysis.

The lifetime of an SCR, which is a metal frame packed with catalyst modules, is equal to the lifetime of the boiler, which might easily be over 60 years. The lifetime of a retrofit SCR is generally set equal to the remaining useful life of the facility. The record is silent on the remaining useful life of the SJGS units. Further, USGS studies of the coal reserves upon which the SJGS relies indicate that the local coal supply is adequate to support a remaining useful life of 30 years.[40] Many utilities routinely specify 30+ year lifetimes in requests for proposal and to evaluate proposals. In fact, an analysis prepared by B&V for another facility assumed a 40 year SCR lifetime.[41] And finally, Sargent & Lundy assumed a design life of 30 years[42] for the nearby Navajo Generating Station which burns a similar coal. We conclude there is nothing in the record to support a 20 year lifetime for the SCR and believe a 30 year lifetime is justified.

Comment: EPA also justifies its refusal to consider additional line items outside the scope of the Cost Manual on the grounds that "PNM had provided no documentation regarding unique circumstances related to the BART determinations." That claim is incorrect. EPA's own analysis cites the documentation PNM submitted to demonstrate the unique circumstances at SJGS, referred to by EPA as B&V's "Cost Analysis Manual Commentary." That document was a response to the cost analysis that was initially prepared by NMED in March 2008 as a response to follow-up questions from NMED regarding the BART determination for SJGS. In addition,

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[40] Gretchen K. Hoffman and Glen E. Jones, Coal Availability Study - Fruitland Formation in the Fruitland and Navajo Fields, Northwest New Mexico, USGS Open-File 464, January 24, 2002, Available at: http://geoinfo.nmt.edu/publications/openfile/downloads/ofr400-499/451-475/464/ofr_464.pdf.
[41] Email from O'Brien to Van Helvoirt, September 28, 2004, Re: Cost Impact, WPS-011904 at WPS-011905.
[42] 8/17/10 Salt River Project Navajo Generating Station Units 1, 2, 3 SCR and Baghouse Capital Cost Estimate Report (S&L Navajo Cost Analysis), Appendix A, p. 6, Sec. 1.7.

PNM also provided significant evidence of the site-specific challenges directly to EPA in response to its questions over the several months during which EPA prepared its BART determination for SJGS. Thus, the assertion by EPA that PNM has failed to sufficiently document the site-specific challenges at SJGS is incorrect.

Response: The specific items in dispute are discussed elsewhere in our response to comments. The information provided in the "Cost Analysis Manual Commentary" and additionally provided to NMED and us explains how B&V extrapolated costs that it estimated from other facilities to apply to SJGS. The alleged unique, site-specific constraints at SJGS, that would justify extrapolating costs from these other facilities, the St. Johns River Power Project, which burns coke, and Harding Street, were never explained. The record, for example, does not contain any structural steel and duct layout drawings to justify this high contingency and other factors, nor does it contain vendor quotes specific to SJGS's coal and site constraints. In fact, as noted elsewhere, we specifically asked PNM to document site specific constraints but they did not respond.

B. Comments on our Proposed NOx BART Emission Limits

We received a significant number of comments concerning our proposed NOx BART emission limit of 0.05 lbs/MMBtu for the SJGS. We have summarized our responses to these comments, but refer the reader to our *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP* document for more detail.

Comment: PNM stated the BART limit should not be based on daily averages of thirty (30) calendar days, as we proposed, because it believes it would be inconsistent with the BART Guidelines. If calendar days are used, they argue, the average could include as little as one hour of operation if the unit is offline for an outage that lasts longer than thirty days because the first hour of operation would be the only data recorded in the last thirty calendar days. Instead, PNM requested that we consider changing “calendar days” to boiler operating days (BODs) which are days in which the unit ran for at least one hour. That approach would be consistent with the BART Guidelines, which include the following advice to states:

> For EGUS, specify an averaging time of a 30-day rolling average, and contain a definition of “boiler operating day” that is consistent with the definition in the proposed revisions to the NSPS for utility boilers in 40 CFR Part 60, subpart Da.[43]

The BOD would ensure that, when an outage occurs, the emissions following startup will be averaged with the emissions data from before the outage, rather than with the period of time during which the unit did not have any emissions at all because it was offline.

Response: We agree with this comment that our proposed NOx emission limit should be based on BODs, rather than a straight calendar average. In response to this comment, we have reanalyzed our proposed determination that the units of the SJGS can achieve a NOx emission limit of 0.05 lbs/MMBtu on a continuous basis, using the BOD concept. We have done this because we believe the same metric should be used to both determine BART and to determine

[43] 70 FR 49104, 39172.

compliance with BART. The results of that analysis are presented in response to another comment. In summary, we continue to believe that NOx BART for the units of the SJGS is an emission limit of 0.05 lbs/MMBtu. We have concluded that emission limit should be based on a 30-day BOD rolling average based on any operation in a given day counting toward the average. We believe that averaging scheme complies with the BART Guidelines, which defines a BOD to be "any 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time at the steam generating unit."[44]

Comment: The U.S. Forest Service (USFS) expressed its support of our NOx BART emission limit of 0.05 lb/MMBtu. The USFS believe this emission limit is adequate and will improve visibility at Class I areas throughout the Four Corners region. Additionally, the USFS feels SCR has already been determined to be BART at several other coal-fired power plants across the United States.

Response: We agree with the USFS.

Comment: EPA predetermined the cost-effectiveness of SCR at SJGS "assuming an outlet NOx of 0.05 lb/MMBtu." EPA then proposed that assumed rate as the BART emission limit for SJGS. EPA's assumption is unfounded – the installation of SCRs at SJGS will not enable the units to achieve 0.05 lb/MMBtu on a continuous basis. As such, the proposed 0.05 lb/MMBtu limit cannot be BART for SJGS.

Response: We disagree with this comment. We initially estimated the cost effectiveness of SCR, assuming an outlet NOx of 0.07 lb/MMBtu, to provide a direct comparison with B&V's analysis. Following this, we determined that a BART emission limit of 0.05 lb/MMBtu was appropriate and then refined the cost effectiveness on that basis. The BART level of 0.05 lb/MMBtu was selected based on an examination of continuous emission monitoring systems (CEMS) data for existing units operating with retrofit SCRs, as we explain elsewhere in our response to comments.

Comment: In contrast to EPA's NOx emission limit assumption of 0.05 lbs/MMBtu, B&V, who has extensive practical experience in actually designing and installing retrofit SCRs determined that a retrofit SCR would only be capable of achieving 0.07 lb/MMBtu on a continuous basis, particularly if required to use the low-oxidation catalyst assumed by EPA to minimize ancillary emission increases associated with SCR.

Response: We do not believe the claim that B&V "determined that a retrofit SCR would only be capable of achieving 0.07 lb/MMBtu on a continuous basis..." is supported in the record by any calculations or arrangement drawings. Rather, the 0.07 lb/MMBtu value is simply stated in the initial June 6, 2007 B&V BART analysis without any explanation as to how it was determined or why 0.07 lb/MMBtu satisfies BART rather than a lower limit.[45] The basis for this limit has been questioned by NMED, the NPS and us since July 2007, but we do not believe that PNM has provided adequate supporting analysis. We do not view an unsupported statement, such as this, questioned on the record by many parties and inconsistent with retrofit SCR

[44] *Id.*.
[45] 6/7/07 B&V BART Analysis, Table ES-2, Table 2-3, Table 6-1, 7-1

experience at numerous facilities, to be sufficient to support a BART determination of 0.07 lb/MMBtu.

We note the NOx design basis was 0.05 lbs/MMBtu for the SCR retrofit for the nearby Navajo Generating Station, a facility of a similar age that burns a similar coal, with a more constrained site. As explained elsewhere in our response to comments, we present data that demonstrates that retrofit SCR installations are capable of achieving a NOx limit of 0.05 lbs/MMBtu on a continuous basis. Therefore, we believe the statement that a retrofit SCR would only be capable of achieving 0.07 lb/MMBtu on a continuous basis, is factually incorrect.

Comment: Several commenters stated that our claim that many facilities are using SCR to actually achieve lower emission rates than 0.07 lb/MMBtu (including the Havana Unit 9, Amos Units 1 and 2, Chesterfield Unit 6, Cardinal Units 2 and 3, Colbert Unit 5, Ghent Units 3 and 4, and Mill Creek Unit 3) is incorrect. This commenter states that while these units have shown the ability to reach 0.05 lb/MMBtu or lower at times, those units are unable to do so on a continuous basis. Thus, the commenter claims, if the units cited by us were in fact subject to a 0.05 lb/MMBtu emission limit, those limits would have been violated many times at each unit.

Response: We disagree with this comment and continue to believe that the NOx emission limit we proposed for the four units of the SJGS, 0.05 lbs/MMBtu, is achievable on a continuous basis. In reaching this conclusion, we followed the language in the BART Guidelines:

> It is important, however, that in analyzing the technology you take into account the most stringent emission control level that the technology is capable of achieving. You should consider recent regulatory decisions and performance data (e.g., manufacturer's data, engineering estimates and the experience of other sources) when identifying an emissions performance level or levels to evaluate.
>
> In assessing the capability of the control alternative, latitude exists to consider special circumstances pertinent to the specific source under review, or regarding the prior application of the control alternative. However, you should explain the basis for choosing the alternate level (or range) of control in the BART analysis. Without a showing of differences between the source and other sources that have achieved more stringent emissions limits, you should conclude that the level being achieved by those other sources is representative of the achievable level for the source being analyzed.[46]

First, we examined "the most stringent emission control level that technology [SCR] is capable of achieving." As demonstrated below, we concluded that SCR is capable of achieving a NOx emission limit of 0.05 lbs/MMBtu. Second, we examined the record to determine if there existed "special circumstances pertinent to the specific source under review" that would prevent the units of the SJGS from achieving this limit, and found none. Third, concluding there was no "showing of differences between the source and other sources that have achieved more stringent emissions limits" that would preclude the application of this limit, we "conclude[d] that the level

[46] 70 FR 39104, 39166.

being achieved by those other sources is representative of the achievable level for the source being analyzed." The following discussion expands on these points.

In our *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP* document, we provide a detailed discussion of why we believe the commenter, PNM, misquotes our cost evaluation report, which was incorporated into our proposal's TSD. In summary, that report contained a previous study of SCR performance during the ozone season for the period 2003 - 2006. This study showed that several units were achieving a NOx emission limit of 0.05 lb/MMBtu at that time to meet NOx SIP Call regulations that were then in force. These SCRs only operated from May to October of each year, the ozone season. The SCRs were bypassed during the remainder of the year as they were not required to meet the NOx SIP Call.

PNM presents graphs for each of the ozone season 2003-2006 units for the period January 2008 to November 2010. These graphs suggest that 0.05 lb/MMBtu is exceeded on numerous occasions and imply this was due to a limitation of the equipment to maintain control. However, these graphs appear to be based on calendar operating days. This distinction is significant, as the BOD convention discussed by the BART Guidelines[47] smoothes out the 30-day rolling average outage spikes. Also, these charts include large blocks of time during which the SCRs were turned off because they were not required under the trading programs then in force. Lastly, these charts connect the dots across outage periods, when the SCRs are not in use and improperly include the zero hour days in the averages at elevated levels.

To address this, we analyzed data from EPA's Clean Air Markets Division (CAMD), which compiles CEMS data reported under various trading programs. We analyzed the NOx CEMS data for the period 2009-2010 to identify the best performing retrofit units that operate year-round. We ranked the annual average NOx emissions for all units in the database for the years 2009 and 2010 from the lowest to the highest NOx emissions. We then selected those facilities that had at least one unit in the top 30 group in both years to identify retrofits achieving best performance.

We then developed a spreadsheet program that used the CAMD data and calculated and graphed three types of 30-day rolling averages for most of these best performing units, plus those additional units graphed by PNM for the period 2008-2010 for the Ozone Transport Assessment Group (OTAG) units and 2006-2010 for the Texas units (Parish 7, 8). All of the units we analyzed were retrofitted with SCR.

As Exhibit 2 shows,[48] the averaging conventions we used are: (1) a conventional 30-day calendar rolling average; (2) a 30-day BOD rolling average based on any operation in a given day counting toward the average; and (3) a 30-day BOD rolling average based on only full 24-hour days. We believe that averaging scheme (2) complies with the BART Guidelines, which defines a BOD to be "any 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time at the steam generating unit."[49]

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[47] *Id*. at 39172.
[48] Exhibit 2, Best Performing SCR Retrofit Installations, June 8, 2011.
[49] 70 FR 39104, 39172.

The Havana Unit 9 data shows that it has operated under 0.05 lbs/MMBtu from mid-2009 to the end of 2010 on a continuous basis. In fact, this unit has operated under 0.035 lbs/MMBtu for much of that time. The Parish Unit 7 data shows that it has operated under 0.05 lbs/MMBtu from mid-2006 to mid 2010 on a continuous basis. In fact, this unit has operated for months at approximately 0.035 lbs/MMBtu, and for approximately 2 years at approximately 0.04 lbs/MMBtu. The Parish Unit 8 data show that it has operated almost continuously under 0.045 lbs/MMBtu since the beginning of 2006. Other units' data show months of continuous operation below 0.05 lbs/MMBtu. We believe this data demonstrates that similar coal fired units that have been retrofitted with SCRs are capable of achieving NOx emission limits of 0.05 lbs/MMBtu on a continuous basis.

In addition, it is important to note that most of the NOx CEMS data in the CAMD database is generated under cap and trade programs, such as the Acid Rain Program, Clean Air Interstate Rule (CAIR), and the NOx SIP Call or to comply with elevated permit limits, such as from netting out of NSR review. Therefore, these reporting units are not subject to regulatory requirements that compel the continuous operation of SCRs to achieve best available NOx reductions. Consequently, a simple examination of the raw data will not always by itself reveal the NOx reduction these limits are capable of achieving.

This is demonstrated by the Parish units in Texas, which are likely the best performing SCR units over the long term. The units operate to maintain a system wide cap, rather than to meet unit by unit limits. The Parish results may not, therefore, reflect the maximum capacity of the SCRs to reduce the plants' NOx emissions. The Parish SCR acceptance tests indicate that they can operate at design levels, or 0.03 lb/MMBtu. This is evidenced by examination of an excerpt from the hourly NOx data for Parish Unit 8, which typically operates at a 30-day rolling average of about 0.044 lb/MMBtu and was run for extended periods at 0.03 lb/MMBtu from August 5, 2006 to September 20, 2009 and then at 0.035 lb/MMBtu from September 21, 2006 to December 1, 2006 to demonstrate its capability.[50] In other words, lower NOx emissions are achievable from the existing fleet of SCR-equipped units than are reflected by a simple examination of the CAMD data.

Comment: A commenter states that while the proposed NOx limit of 0.05 lbs/MMBtu as BART for SJGS would significantly reduce NOx emissions from the SJGS and have a positive impact on visibility and public health, a lower NOx limit of 0.035 lbs/MMBtu is not only technically feasible, but legally-required for SJGS under the CAA. The commenter points to our proposal language that the State of New Mexico "noted the potential for greater control rates as low as 0.03 lbs/MMBtu" for SJGS. This commenter references our TSD for the proposed FIP, that SCR technologies "are routinely designed and have routinely achieved a NOx control efficiency of 90%." Therefore, assuming a 90% removal efficiency, based on SJGS's current rate of emissions (under 0.30 lbs/MMBtu), the commenter concludes modern SCR technology would bring controlled emissions down to 0.03 lbs/MMBtu. The commenter proposed an emission limit of 0.035 lbs/MMBtu, based on a report performed by its own contractor. This report includes vendor guarantees for 90% controls, and presents information that an emission limit of 0.035 lbs/MMBtu is being achieved at other units. The commenter further states that we must present specific circumstances to preclude the application of this emission limit. Lastly, the

[50] We examine this data excerpt in detail in our Complete Response to Comments document.

commenter makes a case that, the feasibility of a lower NOx emission limit aside, the additional costs associated with achieving such a limit, weighed against the additional mass of NOx that would be removed, make such a limit cost effective.

Response: We have reviewed the information presented in the commenter's contractor's report. As we discuss elsewhere in our response to comments, we agree there are SCR retrofits that are meeting NOx emission limits below 0.05 lbs/MMBtu. Our analysis also indicates there are a few SCR retrofits that have demonstrated the ability to do this on the basis of a 30 day BOD average. The commenter's contractor has presented monthly emission data for a number of units which appear to indicate that some are occasionally able to meet monthly emission limits below 0.05 lbs/MMBtu. The Havana 9 unit is particularly highlighted, which appears to indicate that unit has even met such a limit for perhaps 4-5 months at a time. However, in our view, we conclude this is not enough time to demonstrate that the units of the SJGS are able to meet a NOx limit of 0.035 lbs/MMBtu on the basis of a 30 day rolling average year round.

We further agree that it may be technically feasible, considering both vendor performance guarantees, and the data discussed above, for some SCR retrofits to reliably meet an NOx limit of 0.035 lbs/MMBtu on a 30 day rolling average (especially if figured on the basis of a BOD). However, we see no data, presented either by the commenter or from our own research,[51] which we have discussed elsewhere in our response to comments, which would lead us to conclude that such a limit has been sufficiently demonstrated in practice.

To our knowledge, there are no air permits in the U.S. that require that a NOx emission limit of 0.035 lbs/MMBtu be met for a coal-fired unit such as SJGS with retrofitted SCRs on the basis of a 30 day rolling average. Furthermore, the existence of a permit limit is not the only indicator of the technical feasibility of achieving a particular emission limit. However, its absence, combined with no documented instance of an SCR retrofit achieving this level of control on a continuous basis, causes us to conclude that a 30 day rolling average NOx emission limit of 0.035 lbs/MMBtu for the units of the SJGS is not BART.

Comment: The NPS and the USFS separately stated they believe PNM has underestimated the ability of SCR to reduce emissions. For example, the NPS states that B&V assumed that SCR could achieve 0.05 lbs/MMBtu (annual average) when evaluating retrofitting of SCR at the Craig power plant in Colorado. Both the NPS and the USFS stated that EPA's Clean Air Markets data, and vendor guarantees show that SCR can typically meet 0.05 lb/MMBtu (or lower) on an annual average basis. The USFS stated NOx emissions can be reduced by 90% with SCR installed at 0.05 lbs/MMBtu emission limit. The NPS included data it claims indicates that SCR can achieve year-round emissions of 0.05 lbs/MMBtu or lower at 26 coal-fired EGUs, eleven of which are dry-bottom, wall-fired units like SJGS. The USFS also referenced this data. The NPS believes PNM has not provided any documentation or justification to support the higher values used in its analyses. They also present information from industry sources that supports their understanding that SCR can achieve 90% reduction and reduce emissions to 0.05 lb/MMBtu or lower on coal-fired boilers.

Response: We agree with the NPS that PNM has underestimated the ability of SCR to

[51] Exhibit 2, 30 Day Rolling Averages for Selected Best Performing SCR Retrofit Installations.

reduce emissions. As discussed elsewhere in our response to comments, we are requiring that the units of the SJGS meet an emission limit of 0.05 lbs/MMBtu on the basis of a 30 day rolling BOD average.

Comment: PNM requested that we reevaluate the cost effectiveness of SCRs at SJGS because they feel that our proposed NOx emission limit of 0.05 lbs/MMBtu on the basis of a 30 day rolling average is not achievable. They reason that we therefore overestimated the emission reductions that the SCRs would achieve, thus underestimating the cost per ton of pollutant removed. In addition, they requested we reevaluate the visibility improvement that it assumed the SCRs would provide. They reason that at a higher NOx emission limit, the SCRs would not achieve nearly the level of visibility improvement that we expect.

Response: As explained elsewhere in our response to comments, we believe the units of the SJGS can achieve a NOx emission limit of 0.05 lbs/MMBtu on the basis of a 30 day BOD average. Therefore, we do not believe there is any need to revise either the visibility modeling or the cost analysis on that basis.

Comment: The USFS feels that PNM has underestimated the achievable emission limit that would result with Low-NOx burners with overfire air, combined with SCR. Based on data from EPA's Clean Air Markets, SCR usually meets an annual average emission limit of 0.05 lbs/MMBtu or lower. Based on the same data, 26 electric generating units have met this emission limit, eleven of which are similar in design as the SJGS. NOx emissions can be reduced by 90% with SCR installed at 0.05 lbs/MMBtu emission limit. Given the SJGS's size and amount of NOx emissions, a more stringent emission limit than PNM's proposal is not only achievable, but it will provide for greater reduction in NOx emissions.

Response: We agree with the USFS that PNM has underestimated the emissions reductions achievable with the addition of SCR. However, we draw a distinction between units that have met an emission limit of 0.05 lbs/MMBtu and those that have reliably demonstrated the ability to continuously meet that emission limit. Therefore, although we agree there are many SCR installations that are capable of meeting an annual NOx emission limit of 0.05 lbs/MMBtu, we extended our analysis. As we discuss elsewhere in our response to comments, we also analyzed the ability of some of the better controlled SCR retrofits to meet this same limit on a 30 BOD average and found that it was feasible for the SJGS to do so.

Comment: EPA proposes to require the SJGS to meet a NOx emission limit of 0.05 lbs/MMBtu individually at each of the plant's four units. EPA's own BART rules, however, expressly authorize application of BART emission limits on a plant wide basis, and the proposal offers no justification for deviating from that established and reasonable practice. Because it makes no difference, in terms of visibility impact or visibility improvement, as to which unit or units within a facility the emissions - or the emission reductions - occur at, there is no rational basis for the Agency to preclude the plant wide averaging that is contemplated in EPA's own BART rules.

Response: The commenter correctly notes that the BART Guidelines state that the BART determining authority "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 BART-eligible source."[52]

As we discuss elsewhere in our response to comments, we received another comment requesting that we revise our proposed NOx BART limit, which was calculated on the basis of a rolling 30 day calendar average, and adopt instead a limit calculated on the basis of a rolling 30 day BOD average. We agree, and are finalizing our action in accordance with that request. Combining a plant wide average with a BOD average in which individual units may be on different 30 day periods, adds an additional level of complexity to the calculation of a plant wide average. We believe it is possible to integrate the 30 day BOD and plant wide averaging concepts, but due to our consent decree deadline, we do not have the time to construct the algorithm that could be used to guarantee practical enforceability. Therefore, as we discuss elsewhere in our response to comments, we condition the NOx limit for the units of the SJGS on the basis of a rolling 30 day BOD average. We leave the issue of a plant wide average to a possible future SIP revision that includes a verifiable, workable and enforceable algorithm that ensures the resulting emissions are equal to those reductions that would be obtained by simply controlling each of the BART-eligible units that constitute BART-eligible source.

Comment: One commenter requested we exclude emissions occurring during startup, shutdown, and malfunctions events from having to comply with our proposed NOx limit of 0.05 lbs/MMBtu because post-combustion controls equipment such as SCRs cannot operate effectively during those events. Alternatively, this commenter requested we consider setting a different standard that is more representative of the emission characteristics of the units during those events or consider requiring work practice standards to minimize such emissions. Another commenter requested that we specifically include startups and shutdowns in this language, making clear that any emission in excess of an applicable emission limit during any such event constitutes a violation of the applicable emission limit. That commenter also requested that we clarify that this provision applies to all pollutants controlled by this FIP, including, NOx, SO_2, H_2SO_4, ammonia, and particulate matter (PM).

Response: As we have discussed in our response to other comments, we are changing the rolling averaging period for our proposed NOx emission limit of 0.05 lbs/MMBtu from one based on 30 calendar days, to one based on a 30 BODs. The CEMS data indicate that our proposed NOx BART limit can be achieved without separately limiting startups, shutdowns, and malfunctions. Further, the startup, shutdown, and malfunction events cited in this comment are a characteristic of current SCR operating modes, i.e., under trading programs with no incentive to optimize design and operation to achieve a permit limit. These spikes result when flue gas temperatures fall below the operating temperature range of the SCR catalyst, or when the ammonia injection system malfunctions. We believe that startup and shutdown spikes are minimized by using the BOD metric, which we assume was why it was requested that we employ it. As there is no explicit provision for the exclusion of start up, shut down, or malfunction events for NOx, SO_2, and H_2SO_4, all data will be used in determining compliance with this limit. As explained elsewhere in our response to comments, we are not setting an

[52] 70 FR, 39104, 39172.

emission for PM for the units of the SJGS at this time, and we have determined that neither an ammonia limit, nor ammonia monitoring is warranted. We do not see a need to further clarify that the limits we are finalizing must be continuously met.

We also agree with the comment that work practice standards should be developed and used to minimize such emissions. These should include proactive measures such as SCR reactor preheating during a cold start; selecting catalyst to maximize ramp rates and NOx reduction at low temperatures; and use of both tunable ammonia injection grids (AIGs) and static mixers. We encourage PNM to develop and employ those measures.

Comment: PNM contends our conclusions differ greatly from those that have been made in other states in determining NOx BART for other electric generating units. PNM submitted a table of the other NOx BART determinations that have been made by 13 different states as they have developed the proposed RH SIPs that are awaiting EPA approval. PNM stated that in comparison to the determinations made by every other state, the EPA proposal concludes that SJGS must be required to install, (i) the most effective SCR in the nation, (ii) at the cheapest price, and (iii) in the shortest amount of time. PNM concludes that if our proposal is a true indication of our interpretation of the RH program, we will be faced with disapproving every other state RH implementation plan in the country and replacing those plans with FIPs.

Response: As explained in our responses to other comments, we have made adjustments in our NOx BART determination for the SJGS that pertain to this comment. We have adjusted our cost basis for the installation of SCR on the units of the SJGS, which slightly increased the cost of the controls versus the tonnage of NOx removed. In addition, we have modified the schedule for compliance with the emission limits to now require compliance within 5 years – rather than 3 years -- from the effective date of our final rule. Also discussed in our responses to other comments, although we find that our proposed NOx BART emission limit should remain at 0.05 lbs/MMBtu, we have modified the averaging time from a straight 30 day calendar rolling average, to a 30 day BOD average.

We disagree with the statement that our conclusions regarding NOx BART for the SJGS are far different from those that have been made in other states in determining NOx BART for other electric generating units. As the commenter's own table indicates, other states and EPA regions have made NOx BART determinations that will be met or are proposed to be met with the addition of SCR, including the Four Corners Power Plant (EPA Region 9), Hayden Units 1 & 2 (CO), Otter Tail Big Stone 1 (although this is a cyclone boiler) (SD), and Naughton Unit 2.

Also, we initially note two points regarding the costs of the controls, while accepting the values listed on the chart at face value. First, the cost effectiveness of all the BART controls, which depending on the facility range from combustion (e.g., OFA, LNB) to post combustion (e.g., SCR, SNCR), are frequently much worse (more expensive) than the cost effectiveness we calculated for SCR on the units of the SJGS. Second, the cost effectiveness values listed for SCR, are frequently similar to the cost effectiveness we calculated for SCR on the units of the SJGS (especially if compared to our revised cost effectiveness).

Lastly, although we strive to ensure that the regulated community is treated equitably with regard to the RHR, the nature of the BART five factor analysis is designed to consider site-specific issues. For instance, we note that the chart does not contain any information, nor is any presented elsewhere, concerning a visibility impact analysis. As required by the BART Guidelines, this must be included in a BART analysis.[53] Without such an analysis, there is no way to justify any control even if it has a very low cost. Conversely, even controls that have either a relatively high capital cost or cost effectiveness in terms of dollars per ton may be justified if they result in a significant visibility benefit. In the case of the SJGS, our BART FIP NOx emission limit of 0.05 lbs/MMBtu is predicted to result in a combined visibility improvement on 16 Class I areas of 21.69 dv, which we consider very significant.

C. Comments on our Proposed SO_2 Emission Limit

Comment: One commenter stated an SO_2 emission rate of 0.15 lbs/MMBtu on a 30 day rolling average is not appropriate and does not ensure that SO_2 emissions from SJGS will not interfere with visibility in New Mexico or other states. This commenter believes an SO_2 emission rate of 0.15 lbs/MMBtu does not reflect the level of emissions reductions achievable under BART for wet limestone scrubbers. This commenter also points out that the units of the SJGS are all currently achieving SO_2 limits significantly under 0.15 lbs/MMBtu on a 30 day rolling average and concludes we should not set SO_2 emission rates in a Section 110 FIP that exceed the historic SO_2 emission rates at SJGS. The commenter requests that if we do set a non-BART SO_2 limit in our Section 110 FIP, we set unit-specific limits at least consistent with the recent historic SO_2 emission identified in the table above, or issue formal SO_2 BART determinations for each unit at SJGS under a Section 308 FIP.

Response: We believe the SO_2 emission rate of 0.15 lbs/MMBtu is appropriate to meet the requirements of section 110(a)(2)(D)(i)(II) to ensure that these emissions from SJGS will not interfere with visibility in other states. As discussed in our proposal, we believe that emissions reductions consistent with the assumptions used in the WRAP modeling will ensure that emissions from New Mexico sources do not interfere with the measures designed to protect visibility in other states. We are aware that the SO_2 controls currently installed on the SJGS are in fact achieving greater control than would be evidenced by an emission limit of 0.15 lbs/MMBtu. The commenter's observation of the SJGS's current SO_2 emissions simply means that the SO_2 emissions from the SJGS are better controlled than what we require to prevent interference with visibility under section 110(a)(2)(D)(i)(II). We agree with the commenter that the 0.15 lbs/MMBtu emission limit does not reflect the level of emissions reductions achievable through the use of a wet limestone scrubber and that a source specific BART determination for the SJGS might well result in a determination requiring the installation of scrubber to meet a more stringent limitation. We did not propose to address the BART requirements for SO_2 from the SJGS in this action because SJGS will not be installing new control equipment to meet the 0.15 lbs/MMBtu emission limits. As a result, the issue of requiring different capital expenditures to meet the requirements of section 110(a)(2)(D)(i)(II) as compared to those of the RH program's BART requirement does not arise. Since we did not propose the $S0_2$ emission rate under the RHR requirements, the comments concerning BART are outside the scope of this action.

[53] 70 FR 39104, 39163.

Comment: In declining to find that its asserted SO_2 limits satisfy BART, EPA's proposal improperly relies on a RH trading program under 40 CFR 51.309 that does not yet exist. Putting aside EPA's legal obligation to make a formal BART determination in its proposed FIP at this time, any emissions trading program that is proposed to replace a BART limit "must achieve greater reasonable progress than would be achieved through the installation and operation of BART." 40 CFR 51.308(e)(2). Because EPA cannot make the required demonstration that New Mexico's future, theoretical trading program will be "better than BART," EPA is illegally sidestepping its current BART obligations under 40 CFR 51.308 (e)(2)(i).

Response: We disagree with the commenter. In accordance with our proposal, we are finalizing SO_2 limitations under section 110(a)(2)(D)(i)(II), not under the RHR. We disagree with commenter's view that we are sidestepping our BART obligations by not proposing to establish SO_2 BART emission limits. Our rationale for not proposing BART requirements for SO_2 in this action appears in our response just prior to this comment. Moreover, we note that the established SO_2 limits do not rely upon a nonexistent trading program. We will address New Mexico's obligation to address SO_2 under the RHR in a future separate action.

D. Comments on our Proposed H_2SO_4 and Ammonia Emission Limits and other Pollutants

Comment: The League of Women Voters, Montezuma County, Colorado supports the EPA determination that SCR is cost-effective for all units of the SJGS. They defer to our judgment on the proposed final limit for sulfuric acid emissions. They request that we choose the lower limit of 2 ppmvd, adjusted to 6 percent oxygen for the regulation of ammonia emissions. Their justification for this request is the deterioration in visibility at Class I areas such as Mesa Verde National Park, and the imperative to achieve improvements in visibility as rapidly as possible.

Response: We appreciate the support of the League of Women Voters, Montezuma County, Colorado. As explained elsewhere, we have determined that neither an ammonia limit, nor ammonia monitoring is warranted.

Comment: One commenter stated the same pollutants, including PM 2.5, NOx, and VOCs (contributing to ground level ozone) that contribute to visibility impairment also harm public health. This commenter also noted that ozone concentrations in parks in the Four Corners region approach the current health standards, and likely violate anticipated lower standards. In fact, ozone levels in many parts of New Mexico, Colorado, and Utah are already in the range of ozone levels deemed to be harmful to human health.

Response: We agree that the same pollutants that contribute to visibility impairment can also harm public health. Although we note public health benefits, we did not rely on these benefits in establishing controls necessary to meet BART in today's action.

Comment: One commenter expressed support for our proposed H_2SO_4 and ammonia limits proposal for the SJGS, and the corresponding installation of CEMS. That commenter also urged us to set the H_2SO_4 emission rate at the lowest rate of 1.06×10^{-4} lb/MMBtu for each unit at the SJGS, suggesting stack test monitoring for H_2SO_4 on a more frequent basis than annual

monitoring. The commenter also supported our proposed ammonia emission limit at the lower range of 2.0 ppm, with CEMS. Further, this commenter requested we clarify these emission limits are required under the RH program as part of a BART determination for the facility and must be complied with within 3 years of the date of the final rule. Lastly, we were requested to set a BART PM emission limit of 0.012 lb/MMBtu on a 6-hour block average, and a 10% opacity limit at each unit at SJGS, also within 3 years of the date of the final rule.

Another commenter questioned our authority to regulate ammonia through the RH rule.

Response:

In our response to comments on the assumed ammonia slip level used to estimate sulfuric acid emissions, we have recalculated the expected sulfuric acid emissions rate with no ammonia slip. The sulfuric acid emission rate was recalculated to be 2.6 $X10^{-4}$ lb/MMBtu based on an ammonia slip value of 0 ppm, compared to our original value of 1.06 $X10^{-4}$ lb/MMBtu at 2ppm ammonia slip. The actual ammonia slip will vary over the life of a catalyst layer. We conclude an assumption of ammonia slip up to 2.0 ppm as the catalyst ages is reasonable for an SCR system that is designed to achieve a NOx emission limit of 0.05 lbs/MMBtu on a rolling 30 BOD basis, considering the coal the SJGS burns. We also note PNM assumed an ammonia slip of 2.0 ppm in its SCR cost estimation. As the ammonia slip increases, the sulfuric acid emissions will decrease. This revised sulfuric acid emission rate remains significantly lower than that estimated by NMED and is a minimal level of sulfuric acid emissions. Based on these updated calculations and in response to comments, we are requiring the SJGS to meet an H_2SO_4 emission limit of 2.6 $X10^{-4}$ lb/MMBtu.

Our intention in our proposal regarding the regulation and monitoring of ammonia was, like H_2SO_4, to minimize the contribution of this compound to visibility impairment. After careful consideration of the comments we received concerning our proposal to require the SJGS to meet an hourly average emission limit of 2.0 parts ppmvd for ammonia, we have determined that neither an ammonia limit, nor ammonia monitoring is appropriate. Instead, we will approach the issue of the impact of ammonia slip on visibility impairment though proper upfront design, rather than after-the-fact regulation. We are requiring that the NOx control device (presumably, but not required to be SCR) must be designed to achieve a NOx emission limit of 0.05 lbs/MMBtu on a rolling 30 BOD basis with an ammonia slip of 2.0 ppm. We believe this strikes the proper balance between the additional cost of ammonia monitoring and reporting and the need to have a reasonable expectation of the amount of ammonia emitted by the SJGS.

The H_2SO_4 emission limit is being required under the RH program as part of a BART determination for the SJGS and must be complied with at the same time as the NOx limits for each unit. With regard to the commenter's request that if emission monitors are truly unavailable for this pollutant, we should require stack test monitoring for H_2SO_4 on a more frequent basis than annual monitoring, we do not believe that an adequate continuous emissions monitor is available for H_2SO_4 and will continue to rely on stack testing. We do not agree that more frequent stack testing is appropriate, due to a consideration of the cost of that testing in comparison to the value of having a greater certainty of the H_2SO_4 emissions that may result. As

we discussed in our proposal[54], we have concluded that the low sulfur coal burned at the SJGS generates very little sulfur trioxide (SO_3), and hence H_2SO_4, which is formed when SO3 combines with water in the flue gas to form H_2SO_4. In addition, SCR catalysts are available with a low SO_2 to SO3 conversion of 0.5%, further limiting the production of H_2SO_4. Therefore, we conclude we have struck the right balance.

E. Comments on the Emission Limit Compliance Schedule

Comment: We received a number of comments both for and against our proposal to require compliance with our proposed emission limits within three years following the effective date of our final action. The League of Women Voters, Montezuma County, Colorado opposed extending the deadline to five years for achieving the proposed emission limits. They stated SCR was first patented in the U.S. in 1957 and has been an operational pollution control technology for over 30 years at large scale facilities like the SJGS. They believe allowing an extra two years may provide the opportunity for ambiguity and technological changes to enter into arguments about engineering solutions and controls, which potentially could feed appeals and litigation by the operator of the SJGS, and thus delay cleanup efforts. The Navajo Nation expressed concern that the proposed compliance schedule is too stringent for SJGS to reasonably meet and could result in a reduction-in-force of a significant number of employees, including Navajo workers, thereby contributing to family hardships and limiting the ability of affected employees, contractors, and subcontractors to meet their financial obligations.

Another commenter asked if there is a smarter way to phase the installation of controls over a longer period of time.

Another commenter stated any proposed truncation of the five-year compliance period should be persuasively justified by a specific analysis of the feasibility and cost-effectiveness of such a schedule in light of the circumstances at the facility in question. According to the commenter, no such justification appears in the proposed rule. The proposal simply asserts that a three year compliance deadline would be applicable because similar compliance schedules have been met at some other facilities.

Another commenter stated that a compliance deadline of three years will result in significant additional costs that we did not account for in our analysis. They stated the proposed FIP attempts to justify a three-year compliance deadline by citing two studies, but those studies do not reflect a realistic schedule for installing SCRs at SJGS. This commenter made several points concerning two studies on SCR timelines we cited in our proposal that the commenter feels call our use of the information into question. The commenter then cites another report it believes is more representative and concludes the site congestion and other site-specific challenges at SJGS will demand an implementation schedule that is similar to SCR installations at Units 6 and 7 of First Energy's Sammis facility, which required 60 and 62 months to complete, respectively.

Response: We have decided, based on our review of several comments, to finalize a schedule for compliance with the emission limits of 5 years – rather than 3 years – from the

[54] 76 FR 499.

effective date of our final rule. We view the B&V cost analysis as being a very preliminary, low-level estimate, that is missing much of the information required to develop a site-specific schedule. This estimate does not include, for example, plot plans, a diagram showing SCR layout, an analysis of constructability, construction site plan, or an implementation schedule, which are required to develop a site-specific schedule. Thus, we selected an average compliance time, based on a review of a number of sources, including the following:

- 13 months for 675 MW Somerset Station;
- 18 month for Harding Street;
- 19 months for two 900 MW units at Keystone.
- 26 months for Asheville Power Station with a reported normal range of 27 to 30 months.
- 30 months for 4 units based on 21 months typical for 1 unit, each additional unit at same facility adds 2-3 months. Findings for typical installations.[55].
- 36 months for St John River Power Park, from contract award to startup.
- 42 months for 14 SCRs installed to comply with the Texas Nonattainment SIP.
- 60 months estimated by B&V for 5 units at Four Corners.
- 69 months estimated by Sargent & Lundy for 3 units at Navajo.

The median of these estimates is 33 months and the average is 37 months. The UARG report[56] cited in this comment was published around the same time (October 1, 2010) that we did most of our SCR analysis and was unknown to us at that time. PNM and B&V did not identify it in discussions with us in October - November 2010. That report confirms the information we found through independent investigation, summarized above. It indicates that it took 28 to 62 months to design and install the 14 SCRs in its sample (compared to 18 - 69 months for the 9 facilities (greater than 33 units) in our sample). The average design/build time for the units in the report is 43 months, compared to an average of 37 months for our retrofit SCR timeframes. None of the units in these two collections overlap. We agree, based on the information we have from the site, that site congestion will require a longer total installation time for all four units than the average found in both of these collections. Please see our *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP* document for more detail concerning our response to this question.

However, we do not believe there is a basis in the record for concluding that installation of SCRs would require a timeframe as long as claimed for Sammis Units 6 and 7. The seven

[55] ClearSkies: http://www.epa.gov/clearskies/03technical_package_sectiong.pdf.
[56] "Implementation Schedule for Selective Catalytic Reduction (SCR) and Flue Gas Desulfurization (FGD) Process Equipment" October 1, 2010, prepared by J. Edward Cichanowicz for the Utility Air Regulatory Group.

Sammis units were subject to an enforcement action,[57] and the SCRs were installed pursuant to a Consent Decree.[58] The Consent Decree allowed 5+ years, from the date of the Decree in March 2005, to install SCR on two units, SNCR on five units, low NOx burners, and new SO_2 scrubbers on seven units. Construction was completed faster than the Consent Decree schedule, however, and all of the controls were operating by May 2010.

The Sammis retrofit project at this 2,200 MW plant is generally recognized as the largest air quality control retrofit in the history of the United States and is considered to be "the most difficult in the country because of the extremely limited space for installation of the new air emission control equipment and systems."[59] This project is not comparable to SCR retrofits at SJGS, neither in scope, nor complexity, nor site congestion.

Based on an examination of site conditions and available data on historical SCR installation timeframes as described above, we find that a change to our proposed compliance schedule is appropriate. We believe that a longer time frame than the median time frame for construction identified in our survey of SCR retrofits is justified due to site congestion. We do not believe a timeframe as long as that allowed for the Sammis units is warranted, nor is it allowed by the RHR. Consequently, we are finalizing a schedule which requires compliance with the emission limits within 5 years – rather than 3 years -- from the effective date of our final rule.

Comment: A commenter objected to the proposed compliance schedule of 3 years and was concerned that SCR installations often trigger PSD permitting requirements because they constitute physical changes to an existing emission unit that may result in increased emissions of sulfuric acid mist. The commenter stated that obtaining a PSD permit for an SCR can take up to 18 months or more and even if the SCRs do not trigger PSD permitting requirements projects could still trigger state permitting requirements, which can require several months to satisfy. The commenter further stated that the installation of an SCR will involve a significant capital expenditure that will require approval from the New Mexico Public Regulation Commission. The commenter alleged that we failed to take these requirements into account resulting in an unachievable deadline for compliance.

Response: As stated elsewhere in our response to comments, we have modified the compliance schedule. We are finalizing a schedule which requires compliance with the emission limits within 5 years – rather than 3 years -- from the effective date of our final rule. We conclude this is adequate time for the inclusion of any possible permitting requirements.

Comment: A commenter stated that our compliance schedule of three years from the effective date of our final rule did not allow time for competitive bidding. To meet a three-year schedule, the commenter argued, PNM would have to simply offer the work to a single vendor,

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[57] U.S., et al., v. Ohio Edison Company, et al., Opinion and Order, Case No. 2:99-CV-1181, In the U.S. District Court for the Southern District of Ohio, Eastern Division, available at: http://www.4cleanair.org/OhioEdison.pdf.
[58] *U.S. v. Ohio Edison and Pennsylvania Power Company*, Consent Decree, March 18, 2005, available at: http://www.epa.gov/compliance/resources/decrees/civil/caa/ohioedison-cd.pdf.
[59] Michael D. McElwain, Sammis Energy Plant Project Wins Award, Herald-Star, December 13, 2010. available at: http://www.hsconnect.com/page/content.detail/id/552039/Sammis-energy-plant-project-wins-award.html?nav=5010.

eliminating the opportunity to identify other qualified vendors or provide any incentive to encourage competitive pricing. Therefore, the failure to account for this renders the three-year compliance date unrealistic, and calls into question the underlying cost estimates, which are based on contracts entered into by other utilities that most likely were allowed sufficient time to complete a proper competitive bidding process.

Response: We believe this comment is incorrect. The 3 year schedule we proposed did include time to prequalify bidders. However, as stated elsewhere in our response to comments, we have extended the compliance schedule to 5 years.

Comment: A commenter stated that our cost estimate does not appear to account for the need to have two units offline at the same time to install the SCRs, and the commenter expresses the view that PNM would not be able to meet a three-year deadline for compliance without taking two units offline at once. The commenter listed a number of things that would have to occur in the construction process, such as engineering, vendor procurement, and catalysts procurement, and finally, the fact that construction on each unit needs to take place during an outage. In addition, the commenter argues, a three-year deadline would likely eliminate the ability of PNM to plan the outages for off-peak seasons, when the demand for power and the cost for replacement power are lower. Also, a three-year period would require PNM to prefabricate as much of the SCRs as possible, which would require extremely large pre-fabrication yards and prefabrication crews, significant overtime hours, expedited material costs, double "heavy long-lift" crane costs, and a larger construction workforce overall. The commenter states these costs were not included in its analysis. The commenter lists other complications such a shortage of skilled labor, air permitting requirements, and other pre-construction activities, the possible need to purchase electricity at higher prices, and strain on PNM's other generating assets. The commenter requests we consider these costs and constraints in its setting a three- to five-year, compliance schedule and set the deadline for compliance to the five years allowed by law, or even longer if PNM is required to respond with a "Better than BART Alternative."

Response: As stated elsewhere in our response to comments, we have modified the compliance schedule. We find that compliance with the emission limits must be within 5 years of the effective date of our final rule. A longer schedule will allow PNM to tie in the SCRs during routinely scheduled maintenance outages and to plan outages for off-peak seasons. We have not received any request from PNM that we consider a "better than BART alternative."

F. Comments on the Conversion of the SJGS to a Coal-to-Liquids Plant with Carbon Capture as a Means of Satisfying BART

We received comments encouraging us to consider coal-to-liquids (CTL) technology with integrated power generation as an option in determining BART for SJGS. The commenter states that our BART determination proposal would reduce NOx emissions, but would do little to reduce SOx or carbon dioxide (CO_2) emissions, leaving SJGS far from compliance with new or future standards. The commenter states our BART proposal could cost $750 million or more (based on PNM's figures), and would have an adverse effect on the cost of electricity. Based on 2006-generation numbers of 12.5 million MWh's, amortized over a 20-year period at 8%

interest, and a $750 million modification price, the commenter calculates the cost of electricity would increase by approximately $6 per MWh or 0.6 cents per kWh.

The commenter states that although natural gas fired combined cycle, and integrated gasification combined cycle, have merit no option offers more benefits than a CTL plant with integrated power generation. According to the commenter, the synthetic fuels produced are drop-in replacements for diesel and jet fuel, and contain virtually no sulfur. The US military has conducted extensive tests on these fuels, and finds that they produce far lower emissions than conventional petroleum-based fuels.

According to the commenter, the conversion of the SJGS into a CTL plant with integrated power generation would retain jobs in the mining and plant operations, will create ultra-clean biodegradable synthetic fuels in the CTL process, and will use the waste heat and byproduct gases from the process to cogenerate electric power. The commenter states that emissions of criteria pollutants from the CTL plant manufactured by his company approach those of a NGCC plant and emissions of CO_2 are half those of a NGCC plant.

The commenter calculates that a 50,000 barrel per day CTL plant can co-produces 1200 MW of clean, efficient, low carbon power. This would be baseload generation, the commenter argues, that would be produced 24/7 and could be sold into the California marketplace. The size of the facility could be scaled to meet greater energy needs. The commenter states a plant of this size would consume approximately 30,000 tons per day of coal, which is nominally twice as much coal as is currently consumed, so more jobs will be needed at the mine.

According to the commenter, NOx emissions would be reduced by 50 to 1, SOx emissions would be reduced by 20 to 1, and CO_2 emissions would be reduced by 5 to 1. The commenter also notes that ash in the coal is melted in the gasification process, and can be used as an aggregate for paving roadways. In addition, the sulfur from the process can be collected as elemental sulfur, and sold as a byproduct. Water consumption would be reduced by about ½ in comparison to a conventional power plant of the same MW output, due to the use of a hybrid cooling system (air-cooled condenser in conjunction with a cooling tower).

The commenter points out that KinderMorgan has an existing CO_2 pipeline in the vicinity. The CO_2 from the plant could be sold to KinderMorgan and used for enhanced oil recovery.

A plant of this scale, according to the commenter, would cost approximately $8 billion to construct, assuming all new equipment. However, this cost could be substantially reduced by re-utilization of much of the plant, including coal handling equipment, steam turbines, condensers, cooling towers, and transmission lines. The re-utilization of existing equipment could reduce the capital cost by an estimated 25 to 35% as compared to a totally new facility. The commenter suggests this could be a BART (retrofit) solution. The commenter argues the revenues from this plant would provide a return on investment that exceeds all other considered options by a wide margin. The commenter encourages us to consider conversion to a CTL plant with integrated power generation to be BART for SJGS.

Response: We appreciate the commenter's suggestion that we consider CTL technology with integrated power generation as an option in determining NOx BART for the SJGS. Although we encourage PNM and the other owners of the SJGS, and the Navajo Nation to examine this concept in detail, we cannot consider it as a potential NOx BART technology as it would involve a complete redesign of the plant. We note the BART guidelines state that "[w]e do not consider BART as a requirement to redesign the source when considering available control alternatives."[60]

We agree with the commenter that the NOx BART determination in our proposal would reduce NOx emissions, yet would do little to reduce SO_2 and CO_2 emissions from the SJGS. SO_2 emissions under the RHR are covered by the New Mexico submittal, which we received on July 5, 2011. We will address the adequacy of that submission in a future action. As discussed in our proposal, we disagree with PNM's cost estimate for installing SCR on the four units of the SJGS. Although PNM estimated the total cost to be in excess of $900 million, we estimated that cost to be approximately $250 million. As discussed elsewhere in our response to comments, in light of information provided by commenters, we have refined our estimate to be $344,542,604. We note that this estimate, being about one-third that of PNM's, will result in significantly lower costs being passed on to rate payers than what has been estimated by PNM.

G. Comments on Health and Ecosystem Benefits, and other Pollutants

Comment: Several conservation organizations jointly submitted a comment letter pointing out that the same pollutants that contribute to visibility impairment also harm public health and have negative ecosystem impacts. They note that these same pollutants also harm terrestrial and aquatic plants and animals, soil health, and moving and stationary bodies of water by contributing to acid rain, ozone formation, and nitrogen deposition. Another commenter, a retired pediatrician, notes that NOx as a precursor to ozone, causes numerous respiratory problems and adversely affects children in particular; he supports our action. Another commenter urges us to take into consideration the health impacts of toxic emissions from the SJGS. Two commenters state there are high levels of mercury pollution originating from the SJGS. A commenter also points out that nitrous oxide (N_2O) is a greenhouse gas (GHG) that contributes to climate change. According to the commenter, PNM has accumulated many air quality violations, and no amount of money is worth the poisoning of our air, water, and soil. Another commenter points out that a recent study of the 2010 health impacts of the SJGS estimated 33 deaths, 50 heart attacks, 600 asthma attacks, and over 30 hospital admissions, resulting in an estimated $255 million in health care costs in 2010. A commenter also expresses concern that if EPA lowers the ozone standard in 2011, La Plata County, CO, would not be attaining the standard.

Response: We appreciate the commenters' concerns regarding the negative health impacts of emissions from the SJGS. 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 NOx emissions that cause visibility impairment also contribute to the formation of ground-level ozone, which has been linked with respiratory problems, aggravated asthma, and

[60] 70 FR 39104, 39164.

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. Therefore, although our action concerns visibility impairment, we note the potential for significant improvements in human health and the ecosystem.

Although we appreciate the commenter's concern regarding the negative health impacts of toxic emissions from the SJGS, we note that toxic emissions are not considered to be visibility impairing pollutants. Similarly, Mercury is not a visibility impairing pollutant,. N_2O – a GHG – does not belong to the NOx family, nor is it considered a visibility impairing pollutant.

Comment: One commenter states that power plants are responsible for approximately one-quarter of the NOx emitted in the U.S. each year, and therefore urges us to adopt a plan with stricter standards to regulate the toxic air emissions from the SJGS to protect public health, decrease emergency room visits and asthma. According to the commenter, the SJGS is one of the greatest NOx polluters in the nation, contributing to the formation of harmful particulate matter, ground level ozone smog, and acid rain.

Response: We appreciate the commenters' concerns regarding the NOx emissions from power plants such as the SJGS. We agree that these emissions are detrimental to human health and the environment, with NOx being a precursor to ground-level ozone and also leading to the formation of acid rain. Although we appreciate the commenter's encouragement that we adopt even stricter standards, after considering all the comments we received, as we have stated elsewhere in this notice, we believe that the standards proposed in our proposal establish BART and will prevent visibility impairment from the SJGS.

H. Miscellaneous Comments

Comment: A commenter stated that it is appropriate and necessary for us to promulgate a FIP that addresses interstate transport of air pollutants from New Mexico, pointing out that the SJGS is located a short distance from several state boundaries. They also state we should have presented a clearer explanation of the events that have taken place related to New Mexico's work on the SIP in the 2003-2010 timeframe. The commenter believes including more detail in the background section of the proposal about the intermediate actions taken by us and NMED in the given timeframe in regards to New Mexico's SIP would have added clarity for the public.

Response: We believe the level of detail we included in the "*Background*" section of our proposal is appropriate and sufficient to give the public a clear picture of the events leading up to our proposal. In particular, the subsection titled *Statutory and Regulatory Framework Addressing Interstate Transport and Visibility* provides detailed information to give the public a clear picture of what we received from New Mexico in terms of the RH SIP and the Interstate Transport SIP.

Comment: A commenter is concerned with degradation of visibility in Mesa Verde National Park over the last decade. The commenter believes that in the Interstate Transport SIP we received on September 17, 2007, New Mexico's statement that no sources in New Mexico

impact the protection of visibility in neighboring states seems to be unsupported by the evidence presented by NMED.

Response: We note that it appears that the commenter may have a misconception of what NMED submitted in terms of the Interstate Transport SIP. As explained in our proposal, we received a SIP from New Mexico to address the interstate transport provisions of CAA section 110(a)(2)(D)(i) for the 1997 8-hour ozone and $PM_{2.5}$ NAAQS on September 17, 2007. New Mexico did not state in this Interstate Transport SIP that no sources in New Mexico impact the protection of visibility in neighboring states. Instead, New Mexico's Interstate Transport SIP stated that the requirement under section 110(a)(2)(D)(i)(II) that the state not interfere with the visibility programs of other states would be addressed by the submittal of a RH SIP by December 2007. As we state elsewhere in our response to comments and in our proposal, because New Mexico had not submitted a RH SIP or an alternative means of demonstrating that emissions from its sources would not interfere with the visibility programs of other States at the time of our proposal, we proposed disapproval of the September 17, 2007 SIP, and proposed a FIP to fill that gap. We are now finalizing our proposed FIP to ensure that emissions from New Mexico do not interfere with the visibility programs of other States. We received New Mexico's RH SIP under section 51.309 on July 5, 2011, long after statutory and regulatory deadlines. We will review that submission, and address it in a future action.

Comment: A commenter generally agrees with our proposed determination that all the air pollution sources in New Mexico are achieving the emission levels assumed by the WRAP modeling except for the SJGS, but would like to know what data and modeling supports it.

Response: We based our conclusion that all sources in New Mexico are achieving the emission levels assumed by the WRAP in its modeling except for the SJGS by reviewing the WRAP photochemical modeling emission projections used in the demonstration of reasonable progress towards natural visibility conditions and comparing these emission projections to current emission levels from sources in New Mexico.

Comment: A commenter stated that there must be balance in the proposals and regulations that are presented by the federal and state governments. The commenter indicated that although this is an issue of visibility, he is sure we have somehow taken health impacts into consideration in formulating our proposal The commenter also expressed his belief that our proposal is counter-productive and has a better than average potential to harm the local and state economies. The commenter stated that the technology we are proposing is costly and seems unnecessary, as PNM recently completed a project that put it in compliance with all current health requirements, and only considers visibility in the surrounding national parks and wilderness areas while ignoring the economic impact to the local community. The commenter expressed his belief that cost estimates from the private sector tend to be more accurate than government estimates. The commenter stated that our proposal calls into question the continued viability of the SJGS as an asset to the Public Service Company of New Mexico. The commenter stated that this is not an issue that requires emergency action, and suggests allowing tomorrow's technology provide a solution to today's problems.

Response: We understand the commenter's concern regarding the need for balance in the regulations promulgated by state and federal governments. This decision is based on the RH requirements of the CAA. We have not relied on any potential health impacts in reaching our decision, although we note the potential for significant improvements in public health. The SJGS is one of the largest sources of NOx in the western U.S. and is within 300 kilometers of 16 Class I areas. Finalizing our proposal is necessary to satisfy CAA requirements, including section 110(a)(2)(D)(i)(II) with respect to preventing emissions from New Mexico sources from interfering with other states' measures to protect visibility. As previously stated, we have an obligation to promulgate a FIP to address the requirements of section 110(a)(2)(D)(i) with respect to visibility and a FIP to address the requirements of RH. The purposes and requirements of these programs are intertwined. As such, we consider it appropriate to promulgate one FIP that addresses the requirements of section 110(a)(2)(D)(i) with respect to visibility and the BART requirements for NOx for SJGS.

We disagree with the commenter's belief that our proposal is counter-productive. As presented in our proposal, our modeling analysis demonstrates significant visibility improvement at numerous Class I areas from installation of SCR at the SJGS. As we discuss elsewhere in our response to comments, our estimate of the cost of installing SCR is approximately 1/3 what PNM estimated. Regarding the commenter's belief that the technology we proposed seems unnecessary since PNM recently completed a project that "put it in compliance with all current health requirements," we note that as part of our visibility impairment and BART evaluation, we did consider the controls previously installed by PNM as a result of its consent decree with the Grand Canyon Trust, Sierra Club, and NMED on March 10, 2005. These controls included the installation of low-NOx burners with overfire air ports, a neural network system, and a pulse jet fabric filter.

However, as we discuss elsewhere in our response to comments, these controls were not sufficient to prevent New Mexico sources from interfering with measures required in the SIP of any other state to protect visibility, pursuant to section 110(a)(2)(D)(i)(II) of the CAA. The reduction in NOx from our NOx BART determination and the SO_2 emission limits will serve to ensure there are enforceable mechanisms in place to prohibit New Mexico NOx and SO_2 emissions from interfering with efforts to protect visibility in other states. In addition, the RHR requires us to examine additional retrofit technologies. We have determined that SCR is cost effective and results in significant visibility improvements at a number of Class I areas, over and above the existing pollution controls currently installed. With regard to the commenter's belief that cost estimates from the private sector tend to be more accurate than government estimates, we note that we take our duty to estimate the cost of controls very seriously and make every attempt to make a thoughtful and well-informed determination. With regard to the commenter's belief that this is not an issue that requires emergency action and that we should allow tomorrow's technology provide a solution to today's problems, we note that Congress added the BART requirements to the CAA in 1977 to focus attention on the visibility impacts from sources such as SJGS. We therefore believe it is appropriate to take action now, and our FIP is necessary to satisfy the requirements of CAA section 110(a)(2)(D)(i)(II) with respect to visibility for the 1997 8-hour ozone standard and the 1997 PM2.5 standard, and to satisfy certain related RH requirements. We also note that as described elsewhere in this preamble, New Mexico has only recently submitted a RH plan that addresses the interstate provisions of the CAA with respect to

visibility, and as also explained we cannot review it as part of this action. The FIP clocks of both statutory requirements have expired and we therefore have an obligation to act now under the CAA.

Comment: An owner participant of Units 1 and 2 at the SJGS indicates that our proposal presents significant challenges and risks to its resource planning by handicapping its ability to cost effectively respond to changing conditions. The commenter states that uncertainties such as the impact of potential future regulations, future fuel prices, and customer load growth/decline, have the potential to change the economic viability of their generating resources. The commenter points out that implementation of our proposal would require it to make a significant capital investment in the plant, the cost of which could only be recovered through long-term operation of that asset. This would likely have the effect of "locking" SJGS into the generation portfolio for a considerable period of time or risk stranding those investments. According to the commenter, this loss of flexibility would hamper its ability to respond to future scenarios such as changes in the economic viability of coal resources, changes in acceptance of coal resources by State utility commissions, and reduced demand for coal resources. The commenter states that this loss of flexibility is completely unnecessary given that the RH program is intended to make gradual reductions in emissions over a decades-long period of time. The commenter asks us to recognize the significant reductions already made at SJGS or to defer to the SIP submitted by NMED to the Environmental Improvement Board. The commenter suggests that further reductions could be made at the plant, including the possible installation of SCR, over subsequent planning periods. Such an approach would reduce the immediate financial burden on the power plant's customers, allow time for greater certainty in terms of potential carbon limits and customer demand, and retain greater flexibility in future resource decisions.

Response: Regarding costs, EPA reevaluated projections based on comments received to increase them to $344,542,604, which is still much less than industry projections and cost effective. Cost is one of the five factors considered in making BART determinations.[61] Regarding the utility's loss of flexibility, the emission limits we select today are the result of a schedule in the 1977 Clean Air Act to make gradual reductions in emissions over a decades-long period of time

With regard to the commenter's request that we recognize the emissions reductions already made at SJGS or to defer to the SIP recently that was submitted by NMED to the Environmental Improvement Board near the time of the comment, we note that as part of our NOx BART evaluation for SJGS, we did consider the controls previously installed by PNM as a result of its consent decree with the Grand Canyon Trust, Sierra Club, and NMED on March 10, 2005. However, in making the NOx BART determination, we were obligated by the RHR to examine additional retrofit technologies. EPA will give priority to the review of New Mexico's recently submitted Haze SIP; however, it was received too late to be taken into consideration in this rule making.

[61] States must consider the following factors in making BART determinations: (1) The costs of compliance; (2) the energy and nonair quality environmental impacts of compliance; (3) any existing pollution control technology in use at the source; (4) the remaining useful life of the source; and (5) the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. 40 CFR 51.308(e)(1)(ii)(A).

Comment: The Navajo Nation submitted comments stating that the Navajo Nation Environmental Protection Agency is concerned that non-air quality impacts have not been adequately considered in the proposed rule. The commenter states that 20% of the plant workers at the SJGS and 41% of the mine workforce at the San Juan Mine are Navajo Nation tribal members. The commenter is concerned that we have provided no information or analyses to explain how the SJGS will fund the SCR installation costs within the limited timeframe without resorting to a reduction-in-force that would potentially impact Navajo workers, contractors, and subcontractors.

Response: Because SJGS has not proposed to shut down, we do not believe that jobs at the facility will be threatened. EPA's decision to lengthen the compliance deadline from 3 to 5 years should also provide some increases in local employment during that time associated with the installation of pollution controls. The RHR requires that the costs of compliance and the non-air quality environmental impacts of compliance be considered [40 CFR 51.308(e)(1)(ii)(A)]. As described in our proposal, we found that PNM did not identify any significant or unusual environmental impacts associated with the control alternatives that had the potential to affect the selection or elimination of that control alternative. For SCR and SCR/SNCR hybrid technologies, the non-air quality environmental impacts EPA evaluated included the consideration of water usage and waste generated from each control technology.

Comment: A commenter argues that things like wood burning stoves, wood burning fireplaces, and natural occurrences such as dust, wind, fires, and humidity, impair visibility just as much as utilities. The commenter asks us to explain how we propose to control those events that affect air quality.

Response: Natural haze factors are recognized in the current degree of visibility impairment in Class 1 areas. The purpose of this decision is to significantly decrease impairment from the largest man made sources. In addition, the emissions resulting from wood burning stoves and fireplaces are typically included in the emission inventory, which is part of the RH SIP New Mexico recently submitted to us under 40 CFR 51.309. We will review the adequacy of this SIP submission in a separate future proposal.

Comment: The commenter asks us to explain how we intend to analyze the cost benefits to businesses and individuals.

Response: The CAA requires us to consider the cost of installing controls and the visibility benefits as part of the BART analysis, and we have done that. The commenter may wish to consult the Statutory and Executive Orders Review section of this action, which includes our determination that the FIP does not contain a Federal mandate that may result in expenditures that exceed the inflation-adjusted Unfunded Mandates Reform Act of 1995 (UMRA) threshold of $100 million by State, local, or Tribal governments or the private sector in any 1 year.

I. Comments in Favor of our Proposal

Comment: Overall, we received more than 12,000 comment letters in support of our rulemaking from members representing states, tribes, local governments, various organizations and concerned citizens in support of this rulemaking: These comments were received at the Public Hearing in Farmington, New Mexico, by internet, and through the mail. Each of these commenters was generally in favor of our proposed decision for the SJGS. These comments include urging us to require appropriate retrofit technology at the SJGS for emission control, and limiting NOx, SO_2, sulfuric acid and ammonia currently or potentially released by the facility. A number of representative comments from this group are summarized below. The *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP* document includes the full text received by these commenters.

We received many letters which were similar in content and format, and are represented by thirteen types of positive comment letters in the docket for this rulemaking. Each of these comment letters supports our proposed decision for the San Juan Generation Station in New Mexico. More than 7,000 of these letters specifically urge us to keep or lower our proposed numeric limits on nitrogen oxides, ammonia, and sulfuric acid pollution in our final decision and urge us to require compliance with the limits within three years.

We received a letter from the State of Colorado in support of this rulemaking. These comments include support for our careful evaluation of NOx emission control costs for the SJGS, and our proposed promulgation of cost effective emission control for this facility to improve visibility and provide other environmental benefits. The State of Colorado also encouraged us to work closely with the State of New Mexico in selecting the most appropriate NOx control technology.

We received a letter from the Southern Ute Indian Tribe in support of this rulemaking. The Tribe's comments include support for our proposed action to prevent emissions from New Mexico sources from interfering with other state's measures to protect visibility, and to implement NOx and SO_2 emissions limits at the SJGS to prevent interference. In addition, the Tribe supports our proposal to regulate emissions sources in neighboring areas that could undermine the Tribes' efforts to maintain air quality on the Reservation. The Tribe is concerned about the impacts of emissions from SJGS on visibility on the Reservation; therefore the Tribe is in favor of reducing the regional transport of ozone and ozone precursors such as NOx.

We received two resolutions which generally support this rulemaking, one from the City of Durango, Colorado, and another from the Town of Ignacio Colorado. These resolutions include support for requiring the use of BART at the San Juan Generating Station.

Another commenter expressed support of our proposal. The commenter states that for the past 30-40 years, the SJGS has had a largely unrestricted use of the large common air-shed shared by Montezuma County, Colorado and San Juan County, New Mexico. During this timeframe, the residents of Montezuma County and their neighbors have been continually exposed to the air pollution arising from the SJGS, yet the residents of Montezuma County receive no benefit from operation of the plant in terms of electricity (aside from40 MW purchased from SJGS), tax revenues, and community support.

Another commenter supported all aspects of our proposed rule. The commenter volunteers at Mesa Verde National Park and mentions that many park visitors express disappointment over the degraded air quality and limited vistas from the Park. The commenter states that the 2.88 deciview of visibility improvement we predicted at Mesa Verde National Park with SCR installed at SJGS, would be readily noticed by both residents and visitors to the region. The commenter notes that PNM's website claims that SCR is "unnecessary" and would "raise electricity prices for the SJGS's two million customers," yet PNM offers no data or other support for its conclusion. The commenter also notes that no significant improvement in Four Corners RH has been seen since PNM completed installation of emission controls pursuant to the 2009 consent decree. The commenter also states that it is legally, socially, and economically appropriate for PNM's customers to pay the full costs of the power they consume, including the air pollution created while generating it. The commenter also states that although PNM characterizes the SJGS as a "low cost" producer of power, it fails to acknowledge that a substantial cost of its power, in the form of regional air quality degradation, is borne by the people of the Four Corners region, many of whom do not consume SJGS power and derive no economic benefit from the facility. The commenter believes a three-year implementation schedule for SCR at the SJGS is both appropriate and achievable at a reasonable cost.

Response: We note that several of the specific emissions and timeframe limitations supported by these commenters in the proposal have been modified slightly in this final action based on all of the information received during the comment period. Please see the docket associated with this action for additional detail.

J. Comments Arguing our Proposal Would Hurt the Economy and/or Raise Electricity Rates

Comment: A commenter stated that if the FIP is adopted, the owners of the SJGS will have three options: compliance, plant shutdown, or plant modification. The commenter states that compliance would result in a capital expense not justified by the likely results of that investment, and would be a terrible, indefensible waste of resources. Plant shutdown would result in the loss of hundreds of jobs in direct plant employment, coal mining, and other support and service sectors. The commenter also points out that plant shutdown would result in the SJGS customers losing their investment in the plant, which they have paid for through rate payment. SJGS customers would have to pay for the development of new generation facilities and fuel contracts or would have to buy power on the open market, and they would also be responsible for the reclamation of the plant site and any coal mine that might be abandoned as a result of plant closure. The commenter states that plant modification would likely take the form of conversion from coal-fired to natural gas-fired, which would also result in loss of jobs, as there would be no need for coal. The commenter indicates that all three options would result in an increase in the cost of electricity to customers, which should be avoided or eliminated in light of the weakened and unstable economic conditions at the national, state, and local levels.

Another part owner of Unit 4 at the SJGS, submitted comments stating that the impact from imposing its share of the costs of installing SCR at the SJGS, may require it to raise electric rates, cut back on planned clean energy investments, or both, all for what appear to be insignificant benefits.

Response: EPA's evaluation of capital expenses by the implementation of the FIP shows them to be justified by the degree of improvement in visibility in relationship to the cost of implementation. The FIP calls for NOx and SO_2 emission limits at the SJGS to prevent interference with other states' visibility SIPs as well as requiring BART for NOx at this source. BART requires that we evaluate (1) cost of compliance, (2) the energy and non-air quality environmental impacts of compliance, (3) any existing pollution control technology in use at the source, (4) remaining useful life of source, and (5) degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

. After careful cost review EPA has determined that the significant benefits in visibility resulting from the implementation of the FIP outweigh the increase in costs for the facility.

K. Comments Arguing our Proposal Would Help the Economy

Comment: We received several comments stating that the proposed FIP would help local economies by creating new and different jobs in the Region and by increasing tourism. In particular, one commenter stated reducing visibility-causing pollutants have far-reaching impacts on local economies, human health, and ecosystems. The commenter stated that decreasing these pollutants will benefit all of these important areas of concern. This commenter noted that tourism is critical to the economy of New Mexico and the Four Corners region, and made several points: Utah's five Class I areas, all of which are national parks, generate a significant portion of this sustainable tourism economy: in 2008, these areas were responsible for 5.7 million recreation visits, over $400 million in spending, and nearly 9,000 jobs. Parks attract businesses and individuals to the local area, resulting in economic growth in areas near parks that is an average of 1 percent per year greater than statewide rates over the past three decades. National parks also generate more than four dollars in value to the public for every tax dollar invested. Therefore, this commenter concluded, improving visibility at these national parks improves the local economies around them.

This commenter also noted that an additional economic incentive behind protecting air quality is the necessary investment in pollution control technologies as they are a job-creating mechanism in itself. Each installation creates short-term construction jobs as well as permanent operations and management positions.

Response: We agree with the comments. Although we did not consider the potential positive benefits to local economies in making our decision today, we do expect that improved visibility would have a positive impact on tourism-dependent local economies. Also, retrofitting the SJGS with SCR is a large construction project that we expect to take 3 to 5 years to complete. This project will require well-paid, skilled labor which can potentially be drawn from the local area, which would seem to benefit the economy.

L. Comments Requesting an Extension to the Public Comment Period

Comment: We received comments requesting that the comment period be extended, with most requesting an additional 60 days. We also received comments requesting additional public hearings.

Response: Originally the comment period for our proposal was due to close on March 7, 2011. In response to requests we extended the public comment period to April 4, 2011. In doing so, we took into consideration how an extension might affect our ability to consider comments received on the proposed action and still comply with the terms of a consent decree we have with WildEarth Guardians.[62] We do note that our February 17, 2011, public hearing in Farmington, New Mexico was well attended and provided an opportunity for people to comment on our proposal.

M. Comments Requesting we Defer Action in Favor of a New Mexico SIP Submittal

Comment: Various commenters have stated that the NMED should take the lead in implementing the RH requirements of the CAA based on the fundamental principle that the CAA and the RHR emphasize that states, not EPA, are to take the lead in implementing the RH program, and we should wait taking action until NMED submits to the Agency their revised RH SIP and adopt such submittal instead of promulgating a FIP.

Response: Congress crafted the CAA to provide for States to take the lead for implementing plans, but balanced that decision by requiring EPA to approve the plans or prescribe a federal plan should the State plan be inadequate. Our action today is consistent with the statute. As explained in our proposal, we received a SIP from New Mexico to address the interstate transport provisions of CAA section 110(a)(2)(D)(i) for the 1997 8-hour ozone and $PM_{2.5}$ NAAQS on September 17, 2007. New Mexico's September 17, 2007 submittal addressed the requirement that the state not interfere with the visibility programs of other states by stating that it would submit a RH SIP by December 2007.

On January 15, 2009, EPA published a ''Finding of Failure to Submit State Implementation Plans Required by the 1999 Regional Haze Rule.'' 74 FR 2392. We found that New Mexico and other states had failed to submit for our review and approval complete SIPs for improving visibility in the nation's national parks and wilderness areas by the required date of December 17, 2007. We found that New Mexico failed to submit the plan elements required by 40 CFR 51.309(g), the reasonable progress requirements for areas other than the 16 Class I areas covered by the Grand Canyon Visibility Transport Commission Report. New Mexico also failed to submit the plan element required by 40 CFR 51.309(d)(4), which requires BART for stationary source emissions of NOx and PM under either 40 CFR 51.308(e)(1) or 51.308(e)(2). This notice initiated a 2-year deadline, referred to as the "FIP clock," for New Mexico to submit a SIP or for EPA to issue a FIP. The FIP would provide the basic program requirements for each State that has not completed an approved plan of their own by January 15, 2011. The CAA requires EPA to promulgate a FIP if a State fails to make a required SIP submittal or if we find that the State's submittal is incomplete, does not meet the minimum criteria established in the CAA or we disapprove in whole or in part the SIP submission. CAA section 110(c)(1).

[62] *WildEarth Guardians v. Lisa Jackson*, Case No. 4:09-CV-02453-CW.

In addition, WildEarth Guardians sued EPA alleging that we failed to perform the non-discretionary duty to either approve a SIP or promulgate a FIP for New Mexico, among other States, to satisfy the requirements of CAA section 110(a)(2)(D)(i) with regard to the 1997 National Ambient Air Quality Standards for 8-hour ozone and fine particulate matter. We have entered into a consent decree with WildEarth Guardians to resolve this matter.

This consent decree specifically requires us—no later than August 5, 2011—to sign a notice either approving a SIP, promulgating a FIP, or approving a SIP in part with promulgation of a partial FIP, for New Mexico to meet the requirement of 42 U.S.C. § 7410(a)(2)(D)(i)(II) regarding interfering with measures in other states related to protection of visibility. As required by the consent decree, since New Mexico did not submit a complete proposed SIP to address the visibility requirement by May 10, 2010, then by November 10, 2010, EPA was required to propose one of three actions: a FIP; approval of a SIP (if one has been submitted in the interim);or partial promulgation of a FIP and partial approval of a SIP. In the absence of a SIP, EPA proposed a FIP on January 5, 2011. We received the New Mexico submittal on July 5, 2011,after the close of the record for the proposed FIP EPA will give priority to the review of New Mexico's SIP but we cannot consider it and meet the consent decree deadline.

N. Comments Generally Against our Proposal

Comment: Various commenters generally stated they do 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, current air pollution control equipment meet EPA and health standards. Others commented that our decision is arbitrary as no other similar facilities have the same requirements imposed by the FIP and that there will be no benefit to the community. One commenter argues that SJGS already meets the visibility standards required by the CAA.

Response: While we appreciate the effort and time of the commenters, the comments did not include documentation, rationale, or data for EPA to respond beyond our responses provided elsewhere.

O. Comments on Legal Issues

1. EPA's Authority

Comment: Various commenters argued that combining Interstate Transport and RH BART requirements in the proposed action exceeds our authority and does not satisfy the regulatory requirements of each program, and each program has different requirements and purposes.

Response: We do not agree that it exceeds our authority to combine action on RH BART requirements as part of our action on the required State submittal to meet section 110(a)(2)(D) of the CAA. EPA has two separate sources of authority and obligations to take this action, i.e., a

statutory obligation to promulgate a FIP to meet the requirements of section 110(a)(2)(D)(i)(II) and a statutory obligation to promulgate a FIP to meet RH program requirements of the CAA. Nothing in the CAA precludes EPA from addressing both requirements simultaneously, and indeed, to address both in the same action is rational to ensure the most efficient use of resources by both the Agency and the affected source. The SJGS is subject to both provisions of the CAA, and both provisions concern emissions of NOx (among other pollutants). To separate our actions could potentially lead to the same source needing to install two successive levels of control measures, the first in order to meet the requirements of section 110(a)(2)(D)(i), and then the second in order to meet the requirements of the RH program.

The CAA requires each state to develop a SIP that provides for the implementation, maintenance, and enforcement of the NAAQS. CAA section 110(a)(1). The statute explicitly requires that each state's SIP shall include, among other things, adequate provisions prohibiting any source from emitting any air pollutants in amounts which will interfere with measures required to be included in the applicable implementation plan for any other State to protect visibility. CAA section 110(a)(2)(D)(i)(II).

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 notice included a finding that New Mexico and other states had failed to submit SIPs to address any of the four prongs of section 110(a)(2)(D)(i), including the provisions relating to interstate transport of air pollution affecting visibility, and started a 2-year clock for us to promulgate a FIP, unless a State made a submission to meet the requirements of section 110(a)(2)(D)(i) and we approved the submission. CAA section 110(c)(1). That two year period has expired.

The CAA also requires each state to develop a SIP to protect visibility. CAA section 169. On January 15, 2009, we published a "Finding of Failure to Submit State Implementation Plans Required by the 1999 Regional Haze Rule." 74 FR 2392. In that notice we found that New Mexico and other states had failed to submit complete SIPs for improving visibility in the nation's national parks and wilderness areas by the required date of December 17, 2007. Specifically, we found that New Mexico failed to submit the plan elements required by 40 CFR 51.309(g), the reasonable progress requirements for areas other than the 16 Class I areas covered by the Grand Canyon Visibility Transport Commission Report. In addition, we also found that New Mexico had failed to submit the plan element required by 40 CFR 51.309(d)(4), which requires BART for stationary source emissions of NOx and PM under either 40 CFR 51.308(e)(1) or 51.308(e)(2). This finding of failure to submit started a 2-year clock for us to promulgate a FIP, unless the State made a RH SIP submission and we approved it. That two year period has also expired.

On September 17, 2007 we received a SIP from New Mexico to address the interstate transport provisions of CAA 110(a)(2)(D)(i) for the 1997 8-hour ozone and $PM_{2.5}$ NAAQS. In that submission, the state indicated that it intended to meet the requirements of section 110(a)(2)(D)(i) with respect to visibility by submission of a timely RH SIP. Those RH SIPs were due no later than December 17, 2007.

As of the time of our proposal for this action on January 5, 2011, the state had not make the RH SIP submission as represented in its section 110(a)(2)(D) submission, and had not make a RH SIP submission or alternate section 110(a)(2)(D) submission indicating that the state intended to meet visibility prong by any other means.

We received a RH SIP submittal from the state on July 5, 2011. Unfortunately, due to the timing of that submittal, we cannot evaluate it as part of this action. We note that this RH SIP submittal arrived approximately 3-1/2 years past the due date of December 17, 2007, and well past January 15, 2011, the date by which we were obligated either to approve a RH SIP submission or to promulgate a RH FIP, as a result of the 2009 finding of failure to submit the RH SIP. Moreover, the July 5, 2011, submission also occurred more than four years after the date by which we were obligated either to approve a SIP submission or to promulgate a FIP to address the state's failure to submit a submission for section 110(a)(2)(D)(i)(II).

We are under a consent decree deadline with WildEarth Guardians that requires the Agency to take action by August 5, 2011, either to approve the New Mexico section 110(a)(2)(D) SIP, or to promulgate a FIP, to address the 110(a)(2)(D)(i)(II) visibility prong. Because of the lateness of the July 5, 2011 submission, it is not possible to review and potentially fully approve the July 5, 2011, SIP submission by proposing a rulemaking and promulgating a final action by August 5, 2011, as required by the consent decree.

The CAA requires us to promulgate a FIP if a State fails to make a required SIP submittal or if we find that the State's submittal is incomplete, does not meet the minimum criteria established in the CAA or we disapprove in whole or in part the SIP submission. CAA section 110(c)(1). As previously discussed, we have made findings related to the New Mexico SIP submission needed to address interstate transport and the requirement that emissions from New Mexico sources do not interfere with measures required in the SIP of any other state to protect visibility, pursuant to section 110(a)(2)(D)(i)(II) of the CAA.

Therefore, as New Mexico failed to submit an approvable SIP that addresses the interstate provisions of the CAA with respect to visibility, and has made a very late RH SIP submission giving us no time to complete the regulatory process necessary to evaluate that submission in light of the deadlines imposed by the above-mentioned consent decree, we have the statutory authority and the obligation to promulgate a FIP that meets one or both requirements.

In addition, we think that it is appropriate to take action on the visibility requirements of section 110(a)(2)(D)(i)(II) and RH program requirements simultaneously in these circumstances because the purposes and requirements of the interstate transport provisions of the CAA with respect to visibility and the RH program are intertwined. The requirements of CAA section 110(a)(2)(D)(i)(II) explicitly provide that states must have SIPs with adequate provisions to prevent inference with the efforts of other states to protect visibility, which includes the protections contemplated by the RH program. This section of the CAA requires each SIP "to include adequate provisions prohibiting any source from emitting any air pollutants in amounts which will interfere with measures required to be included in the applicable implementation plan for any other State … to protect visibility." These required SIP measures to protect visibility are

set forth in sections 169A & 169B of the CAA and EPA's implementing regulations for the RH program.

Section 110(a)(2)(D)(i)(II) does not explicitly define what is required in SIPs to prevent the prohibited impact on visibility in other states. However, because the RH program requires measures that must be included in SIPs specifically to protect visibility, EPA's 2006 Guidance[63] recommended that RH SIP submissions meeting the requirements of the visibility program could satisfy the requirements of CAA section 110(a)(2)(D)(i)(II) with respect to visibility.

Subsequently, when some states did not make the RH SIP submission, in whole or in part, or did not make an approvable RH SIP submission, we have evaluated whether states could comply with section 110(a)(2)(D)(i)(II) by other means. Thus, we have elsewhere determined that states may also be able to satisfy the requirements of CAA section 110(a)(2)(D)(i)(II) with something less than an approved RH SIP, see *e.g*. Colorado (76 FR 22036 (April 20, 2011)) and Idaho (76 FR 36329 (June 22, 2011)). In other words, an approved RH SIP is not the only possible means to satisfy the requirements of CAA section 110(a)(2)(D)(i)(II) with respect to visibility; however, such a SIP could be sufficient. Given this reasoning, we do not agree with commenters' contentions that the two programs have completely different requirements and purposes and that it is unreasonable for EPA to seek to address these issues in the same action.

Comment: Various commenters have stated that we proposed to act on an interstate transport SIP requirement, while borrowing portions of the RH SIP requirements, and that such partial implementation of programs is inappropriate and conflicts with the structure and purpose of the CAA.

Response: We disagree with the premise of the commenters that we cannot address more than one statutory requirement in the same notice and comment rulemaking. See response to comments, above, regarding our general authority and obligation to act on section 110(a)(2)(D)(i)(II) and RH SIP requirements. We also specifically disagree that acting on portions of the RH SIP requirements in this action is inappropriate and conflicts with the structure and purpose of the CAA. We have authority to act on submissions, or portions of submissions, as appropriate to meet the requirements of the CAA, in accordance with section 110(k)(3). In this instance, we have determined that it is appropriate to take action addressing the NOx BART requirements for an individual source, and thereby to meet a portion of our outstanding statutory FIP obligation for the RH program, at the same time as acting on the section 110(a)(2)(D)(i)(II) SIP submission with respect to the visibility prong to meet that statutory FIP obligation.

We note that we have previously acted on other portions of the section 110(a)(2)(D)(i) SIP submission from the state. In prior actions, we approved the New Mexico SIP submittal for: (1) the "significant contribution to nonattainment" prong of section 110(a)(2)(D)(i) (75 FR 33174, June 11, 2010); and (2) the "interfere with maintenance" and "interfere with measures to

[63] *See*, "Guidance for State Implementation Plan (SIP) Submissions to Meet Current Outstanding Obligations Under Section 110(a)(2)(D)(i)for the 8-Hour Ozone and PM 2.5 National Ambient Air Quality Standards," from William T. Harnett, Director Air Quality Policy Division, OAQPS, to Regional Air Division Director, Regions I-X, dated August 15, 2006 (the "2006 Guidance").

prevent significant deterioration" prongs of section 110(a)(2)(D)(i). (75 FR 72688, November 26, 2010). Were it in fact "inappropriate" to act on portions of SIP submissions, or were it contrary to the structure and purpose of the CAA to do so, as the commenters argue, we would not have taken such prior actions on portions of the state's section 110(a)(2)(D)(i) submission. Moreover, no one objected to those actions on these grounds.

We also contend that promulgating FIPs to address specific CAA requirements is consistent with the purposes of the statute. One of the primary goals of the CAA is to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare. CAA section 101(b)(1). Failing to submit an approvable SIP submission, as required by section 110 of CAA, is contrary to the purposes and goals of the CAA. The CAA requires us to promulgate a FIP if a State has failed to make a required submission or finds that a plan does not satisfy the minimum established criteria, or disapproves a SIP submission in whole or in part. CAA section 110(c)(1).

In this action, we are disapproving a portion of the New Mexico Interstate Transport SIP with respect to the requirement that emissions from New Mexico sources do not interfere with measures required in the SIP of any other state to protect visibility. On September 17, 2007 we received a SIP from New Mexico to address the interstate transport provisions of CAA 110(a)(2)(D)(i) for the 1997 8-hour ozone and $PM_{2.5}$ NAAQS. In this submission, the state indicated that it intended to meet the requirements of section 110(a)(2)(D)(i) with respect to visibility by submission of a timely RH SIP. As previously explained above, we received a RH SIP submission from the state on July 5, 2011. Because of the lateness of the submission, and in light of our obligations under the WildEarth Guardians consent decree to have completed rulemaking on the visibility prong of Section 110(a)(2)(D)(i), it is not possible to review such SIP submission, propose a rulemaking, and promulgate a final action prior to the August 5, 2011 deadline.

Therefore, as previously stated, we have both a statutory obligation to promulgate a FIP to address the requirements of section 110(a)(2)(D)(i) with respect to visibility and a statutory obligation to promulgate a FIP to address the requirements of RH. As also previously stated, the purposes and requirements of these programs are intertwined. As such, we consider it appropriate to promulgate one FIP that addresses both the requirements of section 110(a)(2)(D)(i) with respect to visibility and the BART requirements for NOx from SJGS. Although there are additional RH SIP requirements to be addressed, and we intend to address these requirements in the near future, there is no requirement in the CAA that we take action to address a state's failure to submit an approvable RH SIP in only one action.

Comment: Some commenters argued that the proposed FIP is too all encompassing, exceeds the authority vested in EPA under Section 110 of the CAA because it provides too stringent a control for attaining visibility standards, and will have broader impact than the purpose of the CAA to not interfere with neighboring state implementation plans.

Response: In general, for the reasons we have outlined elsewhere in our responses to comments, we disagree that our FIP is too all encompassing or exceeds our authority under section 110(a)(2)(D)(i) of the CAA. Under that provision, we may not approve the SIP

submission from the state unless the SIP contains provisions adequate to prohibit emissions from sources in that state from interfering with measures required to protect visibility in other states. As explained in this action, we have determined that emissions sources in New Mexico meet this requirement, except for the SJGS. For this source, we have determined that additional and federally enforceable controls are required in order to meet the NOx emissions used in the WRAP photochemical modeling and that federally enforceable emission limits are required in order to meet the SO_2 emissions used in the WRAP photochemical modeling, as part of this action in order to be in compliance with section 110(a)(2)(D)(i). Our action is also based in part on our authority to address the NOx BART requirements for the SJGS. To meet this separate requirement, we have determined that specific NOx controls are required for the SJGS.

Comment: Various commenters argued that EPA failed to present "a coherent or defensible justification" for its interpretation of section 110(a)(2)(D)(i)(II) in the proposal, and that EPA failed to explain adequately its interpretation of CAA section 110(a)(2)(D)(i)(II) and the relationship between that provision, as interpreted by the Agency, and CAA sections 169A and 169B. In addition, the commenter asserted that EPA has no basis to disapprove the state's section 110(a)(2)(D) submission with respect to the visibility prong, because the state's submission was consistent with EPA's 2006 guidance to states for these SIP submission.

Response: We disagree with these assertions. First, in the proposal we explained our views as to the proper interpretation of section 110(a)(2)(D)(i)(II). We explained that section 110(a)(2)(D(i)(II) requires states "to have a SIP, or submit a SIP revision, containing provisions 'prohibiting any source or other type of emissions 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. 76 FR 493 (January 5, 2011). We explicitly stated that "[b]ecause 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 measures to prohibit emissions that would interfere with the reasonable progress goals set to protect Class I areas in other states." *Id*.

In the proposal, we expressed our view that section 110(a)(2)(D)(i)(II) "does not explicitly specify how we should ascertain whether a state's SIP contains adequate provisions to prevent emissions from sources in that state from interfering with measures required in another state to protect visibility" *Id*. at 496. We clearly stated that the statute is thus ambiguous and that the Agency must interpret that provision in this action. *Id*. We are explaining our reading of the ambiguity in the statute in this notice and comment rulemaking.

Thereafter, we articulated in detail the underlying premise for our 2006 guidance, and the recommendations that states address this requirement through submission of the RH SIP. We specifically explained the basis for our belief that the development of those SIPs would provide an appropriate forum in which states would have evaluated the need for emission controls to protect visibility, and in particular would have considered emissions from sources in other states and their degree of control as part of developing their respective programs to protect visibility. The proposal articulated our basis for proposing to interpret the requirement of section 110(a)(2)(D)(i)(II) to mean that the state's SIP must contain at least those emission reductions

that other states would have relied upon from New Mexico sources in the development of their reasonable progress goals in their respective visibility programs. Moreover, our proposal articulated that evaluation of the analysis conducted by the WRAP is one means of gauging whether New Mexico has adequately controlled its sources for this purpose.

We also disagree with the assertion that we have failed to explain adequately our interpretation of the visibility prong of section 110(a)(2)(D)(i) in light of the requirements of section 169A and 169 B of the Act. As explained in our proposed action, the CAA establishes a visibility protection program that sets forth "as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." CAA section 169A(a)(1). In section 169A(a)(1) of the 1977 Amendments to the CAA, Congress created a program for protecting visibility in the nation's national parks and wilderness areas. This section of the CAA establishes as a national goal the "prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas which impairment results from manmade air pollution." In 1980, we promulgated regulations to address visibility impairment in Class I areas that is "reasonably attributable" to a single source or small group of sources, i.e., "reasonably attributable visibility impairment." 45 FR 80084 (December 2, 1980). These regulations represented the first phase in addressing visibility impairment. We deferred action on RH that emanates from a variety of sources until monitoring, modeling and scientific knowledge about the relationships between pollutants and visibility impairment were improved. *Id*.

Congress added section 169B to the CAA in 1990 to address RH issues, and we promulgated regulations addressing RH in 1999. 64 FR 35714 (July 1, 1999), codified at 40 CFR part 51, subpart P (the RHR). The RHR revised the existing visibility regulations to integrate provisions addressing RH impairment and established a comprehensive visibility protection program for Class I areas. The requirements for RH, found at 40 CFR 51.308 and 51.309, are included in our visibility protection regulations at 40 CFR 51.300-309. States were required to submit the first SIP addressing RH visibility impairment no later than December 17, 2007. 40 CFR 51.308(b).

We disagree with the argument that because section 169A and B create a specific program for protection of visibility, that compels the conclusion that section 110(a)(2)(D)(i)(I) could not have any substantive bearing on this issue. Such an argument is at odds with the clear provisions of the statute, and with the structure of the CAA. Section 110(a)(2)(D)(i)(II) of the CAA requires that SIPs shall include adequate provisions "prohibiting . . . any source . . . 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 . . . to **protect visibility**." (Emphasis added). Because sections 169A and 169B establish the national goal for visibility protection, including RH issues, we infer that when Congress included protection of required visibility programs in other states as part of section 110(a)(2)(D)(i), it was a conscious reference to the sections in the CAA that address that matter. Indeed, in section 110(a)(2)(D)(i)(II), Congress directed us to prevent interference with the "measures required to be included in the applicable implementation plan for any other State under part C of this chapter … to protect visibility," and the RH program is unequivocally among those required measures to

protect visibility. Thus, it is reasonable for EPA to evaluate whether the SIP of a given state prohibits emissions, consistent with what other states will have developed their own visibility programs in reliance upon.

It is illogical to conclude that Congress would have explicitly directed us to assure that state SIPs contain provisions to protect visibility programs in other states, but that we not have the authority to require such provisions as part of a section 110(a)(2)(D)(i)(II) SIP submission, or if necessary to supply them as part of a FIP. Such an argument is also clearly inconsistent with the other prongs of section 110(a)(2)(D)(i). The mere existence of other statutory programs to provide for attainment and maintenance of the NAAQS required in part D of the Act, does not negate the requirement that states also meet the requirement of the "significant contribution to nonattainment" and "interference with maintenance" prongs of section 110(a)(2)(D)(i)(I), and the authority of EPA to require substantive provisions in the SIP, or to promulgate a FIP to provide them, as may be necessary. We have exercised such authority and issued SIP calls or promulgated FIPs to assure that state SIPs meet the requirements of section 110(a)(2)(D)(i).[64] Because of the impacts on visibility from the interstate transport of pollutants, we thus interpret the "good neighbor" provisions of section 110 of the Act described above as requiring states to include in their SIPs measures to prohibit emissions that would interfere with the reasonable progress goals of the RH program set to protect Class I areas in other states of the RH program.

Finally, we disagree with the commenter's views concerning the state's September 2007, submission complying with the Agency's 2006 guidance, and even if it had complied with that guidance, the purported legal significance of that fact for purposes of this action. As the commenters themselves conceded, the state's 2007 submission stated that it would make a timely RH SIP submission by December of 2007 as its intended means of meeting the requirements of section 110(a)(2)(D)(i)(II) for visibility, but due to intervening events the state did not in fact do so prior to our proposed action. Contrary to the commenter's views, that submission was not factually consistent with the recommendations of the guidance.[65]

More importantly, however, our 2006 guidance reflected our recommendations for how states could potentially meet the section 110(a)(2)(D)(i)(II) requirement at that point in time. As of August 2006, we stated our belief that it was "currently" premature for states to make a more substantive SIP submission for this element, because of the anticipated imminent RH SIP submissions. We explicitly stated that "at this point in time" in August of 2006, it was not possible to assess whether emissions from sources in the state would interfere with measures in the SIPs of other states. As subsequent events have demonstrated, we were mistaken as to the assumption that all states would submit RH SIPs in December of 2007 and mistaken as to the assumption that all such submissions would meet applicable RH program requirements and therefore be approved shortly thereafter. Thus the premise of the 2006 Guidance that it would be

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[64] *See*, e.g., "Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone; Final Rule," 63 FR 57356, October 27, 1998, (the NOx SIP Call).

[65] Subsequent to the proposal for this action, and subsequent to the commenter's comments, the state did make a RH SIP submission on July 5, 2011, one month before we have to finalize rulemaking either by promulgating a FIP or reviewing, proposing a rulemaking and promulgating a final action fully approving the SIP, as required by the August 5, 2011 consent decree deadline. Nevertheless, the commenter was clearly in error given that there was no submission purporting to meet the requirements of the RH program as of the time of its comments.

appropriate to await submission and approval of such RH SIPs before evaluating SIPs for compliance with section 110(a)(2)(D)(i)(II) was in error. Our 2006 Guidance was clearly intended to make recommendations that were relevant at that point in time, and subsequent events have rendered it inappropriate in this specific action.

In short, we must act upon the state's submission in light of the actual facts, and in light of the statutory requirements of section 110(a)(2)(D)(i). Whereas our prior recommendations were prospectively anticipating the submission of the RH SIP as a means of the state imposing the controls necessary on New Mexico sources necessary to prevent interference with the required visibility programs of other states, those recommendations are inappropriate at this juncture. In order to evaluate whether the state's SIP currently in fact contains provisions sufficient to prevent the prohibited impacts on the required programs of other states, we are obligated to consider the current circumstances and investigate the level of controls at New Mexico sources and whether those controls are or are not sufficient to prevent such impacts.

We similarly disagree with the commenters' argument that it is still "premature" to evaluate the compliance of the state's SIP at this time, and that we "must await the date on which regional haze SIPs have been submitted and approved." First, this approach is illogical, as it fails to address what would happen if a state were never to submit the required RH SIP, or were never to submit a RH SIP that was approvable. On its face, the commenter's argument is simply inconsistent with the objectives of the statute to protect visibility programs in other states if a state never submits an approvable RH SIP. Second, this approach is flatly inconsistent with the timing requirements of section 110(a)(1) which specifies that SIP submissions to address section 110(a)(2)(D)(i), including the visibility prong of that section, must be made within three years after the promulgation of a new or revised NAAQS. We acknowledge that there have been delays with both RH SIP submissions by states and our actions on those RH SIP submissions, but that fact does not support a reading of the statute that overrides the timing requirements of the statute. We believe that there are means available now to evaluate whether a state's section 110(a)(2)(d)(i)(II) SIP submission meets the substantive requirement that it contain provisions to prohibit interference with the visibility programs of other states, and therefore that further delay, until all RH SIPs are submitted and fully approved, is unwarranted and inconsistent with the key objective to protect visibility.

Section 110(a)(2)(d)(i)(II) directs EPA to evaluate the SIP of a state for adequate controls on emissions from the state to prevent interference with measures "required to be included in the applicable state implementation plan" of other states. Thus, this evaluation is supposed to consider what other states should have in their SIPs as of this point in time, and is not limited by the fact that other states may or may not have made the required RH SIP submission, nor by the fact that we may or may not have approved those RH SIP submissions at this point in time. Instead, we must evaluate the state's section 110(a)(2)(D)(i)(II) submission in light of the programs that states are required to have, and that clearly includes the RH program required in other states. As discussed above, we believe that one means to evaluate this issue is to determine whether the level of controls in the SIP are consistent with the expectations for controls at New Mexico sources relied upon by other states in the development of their own respective visibility programs and consistent with the needs for emissions reductions that we ourselves conclude are needed for purposes of the RH program.

Comment: The proposed FIP requires exceedingly stringent and expensive compliance obligations that are not adequately legally supported because the proposed FIP fails to adequately satisfy the interstate transport provisions of Section 110(a)(2)(D)(i) of the CAA or the provisions of the RHR.

Response: We disagree that the FIP is not legally supported. The FIP satisfies provisions in both section 110(a)(2)(D)(i)(II) of the CAA regarding interstate transport of pollutants affecting visibility in other states and for the NOx BART determination for the SJGS, the RHR.

We find that the emissions from the SJGS in New Mexico are interfering with the other states' required measures to protect visibility. Therefore, we are imposing through the FIP, specific emission limits upon the SJGS to prevent such interference. We are imposing an SO_2 limit and a NOx limit. To provide greater certainty to the SJGS that controls needed to prevent interference with other states' visibility programs, as well as the controls needed to meet the RHR's BART requirements, do not conflict with each other and end up imposing unnecessary greater costs upon the SJGS, we are imposing a BART NOx emission limit that meets both requirements at this time, rather than postponing action on this RH SIP requirement. We are only determining that the SJGS is subject to BART and promulgating the NOx BART FIP for the SJGS. We are not addressing whether New Mexico has met the requirements of the RHR for any other sources; we are not addressing whether the SJGS is meeting the RH BART requirements for any other pollutants; and we will address those requirements in later actions.

We have the specific authority to promulgate a FIP imposing a NOx BART emission limitation upon the SJGS because we previously found that New Mexico had failed to submit a complete RH SIP by December 17, 2007. 74 FR 2392 (January 15, 2009). This finding started a two year clock for the promulgation of a RH FIP by EPA or the approval of a complete RH SIP from New Mexico. CAA section 110(c)(1). The FIP obligation imposed upon us became effective on February 15, 2011. Part of that FIP obligation includes making a NOx BART determination for the SJGS. To prevent a possible conflict between a NOx visibility transport emission limitation FIP for the SJGS and the NOx RH BART emission limitation FIP for the SJGS, we chose to promulgate now, rather than later, the NOx RH BART determination for the SJGS. We are combining the requirements of section 110(a)(2)(D)(i)(II) for NOx with a NOx BART evaluation (40 CFR 51.308) to be efficient and provide greater certainty to the source as to the appropriate NOx controls needed to meet those two separate but related requirements.

This FIP also will impose a federally enforceable limit on the emissions of SO_2 from the SJGS based upon the WRAP determination of each member state's contribution to visibility impairment of SO_2 emissions, of which New Mexico is a member. The SJGS's existing SO_2 permit does not provide the necessary emission limits and enforceable mechanisms to ensure the SO_2 emissions used in the WRAP photochemical modeling for the SJGS units will be met. Therefore, we assumed the SO_2 emission limit used in the WRAP modeling and, by this action, make it enforceable. This is necessary to ensure that New Mexico sources do not interfere with efforts to protect visibility in other states pursuant to the requirements of section 110(a)(2)(D)(i)(II) of the CAA.

Comment: One commenter argued that EPA took too narrow an interpretation of the term "interfere" in the visibility protection context of Section 110(a)(2)(D)(i)(II) for New Mexico, and that EPA should account for a broader range of causes of visibility impairment when considering regulating interference with other states' visibility. According to the commenter, EPA's action should consider future growth in emissions from area sources such as oil and gas development as part of evaluating interference with the visibility programs required in other states' SIPs because the proposed New Mexico RH SIP already reduces NOx emissions sufficiently. The commenter also argued that pollutants other than NOx cause interference with other states' visibility programs and should be considered instead of reducing NOx emissions under BART because the commenter believes NOx emissions contribute a minor portion to overall visibility impairment.

Response: We disagree with the assertion that we took too narrow a view of the term "interfere" in Section 110(a)(2)(D)(i)(II). In the FIP proposed and finalized in this action, we are concluding that the New Mexico SIP contains adequate provisions to prevent such impacts on the visibility programs of other states, except for the emissions from the SJGS. By promulgating a FIP to impose NOx and SO_2 emission limits necessary at the SJGS to prevent such interference, as well as to meet the requirement for BART for NOx for this same source, EPA is addressing the requirements of the statute. In reaching this conclusion, we considered the term "interfere" based upon the facts, information, and data available to the Agency at this time.

As we discuss in our proposal, we relied on WRAP modeling to determine the appropriate emission limits for sources in New Mexico in order to determine if New Mexico's emissions were interfering with other state visibility SIPs. The states in the West, including New Mexico, worked together through the WRAP to determine their contribution to visibility impairment at the relevant federal Class I areas in the region and the emissions reductions from each State needed to attain the reasonable progress goals for each area. Western states are relying on the WRAP assumed reduction in emissions levels modeled for sources in New Mexico including the SJGS in order to meet their RH reasonable progress goals. All of the sources except for SJGS met the WRAP assumed reduction in emissions levels modeled for New Mexico's assigned contribution to the region's visibility impairment of federal class I areas. Thus, we proposed a FIP to prevent emissions from New Mexico sources from interfering with other states' measures to protect visibility, and to implement NOx and SO_2 emission limits necessary at one source, the SJGS, to prevent such interference, as well as BART for NOx for this source.

We determined that enacting a NOx BART determination for SJGS was necessary because the WRAP analyses showed that NOx emissions in general and SJGS NOx emissions, specifically, contribute significantly to haze in the West. SJGS is by far the largest source of NOx emissions in NM. Our FIP requires substantial reductions in NOx emissions from this source. We agree that oil and gas development can result in emissions that could have an impact on visibility due to increases in NOx emissions. However, we are basing our evaluation of the potential impacts of emissions from New Mexico sources on the WRAP analysis, and consideration of the sources that other states would have assumed that New Mexico intended to control as part of that modeling. The state's initial submission for section 110(a)(2)(D)(i) indicated that the state intended to meet its obligations with respect to the visibility prong by

means of the RH SIP. Therefore, we have examined the issue in light of what other states would have assumed such a SIP would achieve. Moreover, even if the impacts from the oil and gas sector were significant, this fact would not justify a decision to not act on the BART requirements for NOx for the SJGS, because NOx emissions from SJGS are a significant source of NOx emissions that interfere with other state's required visibility programs. In addition, based on the facts and information currently available, we believe the most effective means of ensuring that emissions from New Mexico do not interfere with other states' visibility programs is to require further and federally enforceable NOx reductions and federally enforceable SO_2 limits at SJGS.

We also specifically disagree with the commenter's statement that NOx emissions contribute only a minor portion to overall visibility impairment. As we noted in our proposal, our modeling indicates that the visibility impairment due to the SJGS's emissions is primarily dominated by nitrate particulates. As our NOx BART modeling demonstrates, reducing NOx emissions from the SJGS will result in a 21.69 dv, cumulative improvement, across 16 Class I areas. As the RHR states, "States should consider a 1.0 deciview change or more from an individual source to ''cause'' visibility impairment, and a change of 0.5 deciviews to ''contribute'' to impairment."[66] Therefore, we do not view a cumulative visibility impairment of 21.69 dv as an insignificant contribution. The commenter suggests we consider future growth in emissions from area sources such as oil and gas development as part of our control strategy. We agree with the commenter that oil and gas activity in New Mexico produces NOx and other emissions. We understand the WRAP is currently reviewing and refining the emissions inventory for this sector. We will address this matter further in our review of New Mexico's RH SIP.

2. BART Requirements

Comment: One commenter states "EPA's BART determination for the San Juan Generating Station contravenes EPA's rules and conflicts with the structure and purpose of CAA Section 169A." Following this comment, there appears a parenthetical "see" reference to comments that had been submitted from two other commenters.

Response: The comment does not give any underlying rationale or facts for its assertion that our action contravenes our rules and conflicts with CAA Section 169A. We disagree with the statement, because the NOx BART determination for the SJGS was made in accordance with our rules and CAA requirements. The references to subsections of other submitted comments do not appear to match with the comments we had received. We cannot further evaluate or respond to this comment. In any event, the other comments are separately addressed in this document.

Comment: One commenter states that our proposed rule must be withdrawn because it fails to justify implementation of a SCR BART limit. This commenter cites to a portion of *American Corn Growers v. EPA*, 291 F.3d 1, 19 (D.C. Cir. 2002), where the D.C. Circuit wrote of state's having "broad authority over BART determinations." The commenter also points to that court's discussion of legislative history, where it stated that "…Congress intended the states to decide which sources impair visibility and what BART controls should apply to those

[66] 70 FR 39104, 39120.

sources." *Id.* at 8. From this, the commenter states that the authority of states to establish BART cannot be constrained by us.

Response: While a State has broad authority over a BART determination when it is the decision maker, we similarly have broad authority when promulgating a FIP. Because, as discussed earlier in this notice, New Mexico did not timely formulate and submit its BART determinations, we have the authority and responsibility to make a NOx BART determination for SJGS.

Comment: One commenter argues that an evaluation of the amount of reasonable progress expected to be achieved in the Class I areas by other control measures is required before the amount of reasonable progress needed from BART at the SJGS should be determined. Under the CAA, BART is not expected to be the maximum degree of emissions reduction technologically feasible. In fact, it may be lower if reasonable progress from other CAA programs is sufficient.

Response: We believe BART to be a severable piece of the RHR that can be evaluated on its own. BART can be a part of a reasonable progress strategy, and controls imposed under other CAA requirements can be considered to be BART, In fact, as we discuss elsewhere in our response to comments, we did evaluate the existing controls at the SJGS, but found them inadequate to satisfy NOx BART. However, there is not any requirement in the RHR that would require we first make an evaluation of reasonable progress prior to conducting a BART evaluation, nor is there any consideration of lessening the degree of a potential BART control in light of other CAA programs.

Comment: One commenter alleges our proposed rule improperly requires BART for the San Juan Generating Station under Section 110 of the CAA and not Section 169A. While we propose to act under the "good neighbor" provision in Section 110 of the CAA, the commenter alleges, EPA "appears to selectively borrow" the BART requirement from the RH program established under Section 169A to do what "neither section could do alone." One commenter states Congress intended BART to be one part of a "comprehensive, long-term strategy for addressing RH in Class I areas. The commenter asserts that BART is more stringent than 169A requires, because it is being used "out of context" in a limited Section 110 program designed to ensure one state does not interfere with another state's air quality plans. The commenter feels the approach we use is a partial or piecemeal implementation of the RH program, which is contrary to the integrated, comprehensive decision-making that 169A envisions. Because requirements of Section 110 and the Section 169A were not kept separate from each other, the commenter feels our proposal is substantively and procedurally flawed and fails to properly implement the programs under both sections.

Response: We are not requiring NOx BART for the SJGS under section 110 of the CAA. We are requiring NOx BART for the SJGS under section 169A and the RHR. Further, we disagree with the statement that BART requirements were selectively borrowed from the RH program or that any provisions were selectively borrowed or considered out of context. In making the BART determination, we first looked to RHR requirements and determined SJGS is BART eligible for NOx at each affected emissions unit. We then established BART for those

units under the RH Rule and the Guidelines for BART Determinations found in Appendix Y of 40 CFR Part 51. Because our BART determination is in accordance with the guidelines, it is not any more stringent due to the additional action under Section 110. Moreover, as discussed elsewhere, we do not agree our determination is procedurally or substantively flawed because it is not comprehensive enough. While other commenters have suggested that we should proceed to determine BART for other pollutants, we are finalizing a NOx BART determination for the SJGS and will address other RH requirements in a separate future action. Therefore, we do not agree that the action under Section 110 and the determination under Section 169A have created any conflict or flaw in the implementation of either program.

Comment: A commenter states that although a similar analytical approach is appropriate, the outcome of the BART analysis for the SJGS should differ from the proposed BART determination for the Four Corners Power Plant. Commenter agrees that a consistent method of analysis should apply. However, it disagrees that the outcomes of the analyses must be the same, given the meaningful differences between the two facilities. For example, the site congestion is a much greater concern at the SJGS than at Four Corners. EPA should reconsider the emission limit it assumed for San Juan in the site-specific, plant-wide manner employed by Region 9.

Another commenter states the proposal fails to consider other BART-eligible sources or other emission control strategies. In addition, the commenter is concerned that our proposed FIP for the SJGS may have been inappropriately influenced by the FIP proposed for Four Corners Power Plant by Region 9. Although the overall analytical approach must be consistent, the commenter argues, the final determinations should be different to reflect the differences between those two facilities.

Response: We agree with the commenters that a consistent method of analysis should apply for all BART evaluations, and we believe the use of the BART Guidelines ensures that occurs. However, we see no reason to conclude the outcomes of these analyses should be prejudged to necessarily have any relationship to each other. We note that the differences the first commenter mentions, such as existing pollution control equipment and site congestion, were factored into our SJGS NOx BART visibility modeling (baseline emissions) and cost evaluation, respectively. Also, concerning the amount of review time (e.g., comment period), our consent decree deadline prevents us from extending the comment period more than we already have, which was almost a month over our initial 60 day period. We disagree with the first commenter that we failed to properly consider the NOx emission limit the units of the SJGS can reliably attain. Elsewhere in our response to comments, we present detailed information that documents these units can reliably meet a NOx BART emission limit of 0.05 lbs/MMBtu. In our analysis, we see no information in the record that causes us to conclude there are any site specific issues that would prevent the units of the SJGS from attaining this emission limit. Lastly, as we discuss elsewhere in our response to comments, we have modified the compliance schedule. We find that compliance with the emission limits for the SJGS should be within 5 years of the effective date of our final rule. We note that the compliance schedule for the Four Corners Power Plant is now being analyzed under a "better than BART" scenario according to section 51.308(e)(2)-(3), which provides for a possibly longer time period for the installation of controls.[67]

[67] Supplemental Proposed Rule of Source Specific Federal Implementation Plan for Implementing Best Available Retrofit Technology for Four Corners Power Plant: Navajo Nation, 76 FR 10530

Comment: The proposed FIP for SJGS is entirely inconsistent with the FIP proposed for six units in Oklahoma by EPA. Given the similarity of the BART determinations made by the state of Oklahoma and the BART determination prepared for San Juan by PNM's consultant, and the significant difference between those determinations and EPA's proposed FIP, commenter asks EPA to reconsider its BART analysis for SJGS using the method of analysis applied in Oklahoma.

Response: We disagree that the results (e.g., emission limits and controls) of our proposed NOx BART determinations for Oklahoma[68] and the NOx BART determination we proposed for the SJGS should be similar. The cost of controls must be compared to the expected visibility benefits, and those benefits from the potential installation of SCR on sources in Oklahoma were predicted to be much less than what we expect to result from the installation of SCR at the SJGS. In fact, the visibility benefit (or lack thereof) from the installation of SCRs on the Oklahoma BART sources is so small that we did not see the need to refine the cost estimate by investigating the feasibility of a lower NOx emission limit. Our conclusion in no way implies we accepted the SCR cost estimate at face value— only that we did not see the need to refine it. With regard to the different BART compliance schedules between our proposals, we believed in SJGS's case that the expected visibility benefits were so significant that the controls should be installed "as expeditiously as practicable." 40 CFR 51.308(e)(1)(iv). As we discuss elsewhere in our response to comments, we have modified the compliance schedule. We are finalizing a schedule which requires compliance with the emission limits within 5 years – rather than 3 years – from the effective date of our final rule.

Comment: Some commenters have stated that the proposed FIP does not satisfy other requirements of the RH Program.

Response: We are acting on a portion of the State's SIP revision addressing Interstate Transport requirements, specifically visibility. We are not acting upon a state RH SIP submittal. The only RH requirement on which we are acting is to make a NOx BART determination for the SJGS and promulgate a NOx BART FIP for the SJGS under the RHR. We have made clear in our proposal that we will later act on the rest of the RH requirements.

Comment: One commenter states that the requirement to install SCR at the SJGS is a fatally flawed and unnecessary approach to RH reduction, and that the FIP is not consistent with the law, science, economics, or prudent engineering practice.

Response: While we appreciate Commenter's general concern about the control equipment for RH reduction, the Commenter did not provide any specific examples in the record to be able to adequately respond to this generalized statement. It should be noted that EPA's action establishes emission limits that may be met with SCR but it does not mandate specific control equipment.

Comment: A commenter states that our BART analysis should be only about visibility and not public health concerns, which can be misleading.

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[68] *Id.*

Response: We agree with the commenter that our action should be, and in fact is, about protecting visibility. We derive our authority for this action both under section 110(a)(2)(D)(i)(II) of the CAA and the RHR. In so doing, although we do note the ancillary public health benefits resulting from controlling the same pollutants that cause visibility, we have not considered those benefits in arriving at our decision.

3. Executive Orders Comments

Comment: The MSR Public Power Agency (MSR) disagrees with our findings under the Unfunded Mandates Reform Act of 1995 that the proposed FIP does not contain a federal mandate that may result in expenditures by state, local, or tribal governments that exceed the inflation-adjusted threshold of $100 million ($100 million in 1995 dollars) or more in any one year thus triggering a written assessment of the costs and benefits of the proposed FIP. MSR believes that the cost of retrofitting the four units at the SJGS is closer to PNM's estimated cost of $908 million.

Response: The Unfunded Mandates Reform Act (UMRA) requires that Federal agencies assess the effects of Federal regulations on State, local, and tribal governments and the private sector. In particular, UMRA requires that agencies prepare a written statement to accompany any rulemaking that "includes any Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more (annually adjusted for inflation) in any one year" (Section 202(a)). Our revised cost estimate indicates that the Total Annual Cost is $39,265,670.[69] Therefore, we have determined that we are below this threshold, even without adjusting it for inflation. In other words, even if the entire Total Annual Cost of the installation of SCRs on the units of the SJGS were ascribed to one entity, we do not believe the UMRA threshold would be triggered.

Comment: Once commenter states that we should not ignore Executive Order 12866.

Response: This action is not a "significant regulatory action" under the terms of Executive Order 12866, (58 FR 51735, October 4, 1993) as it only applies to one facility and is not a rule of general applicability. Therefore, this action is not subject to review under the Executive Order.

Comment: One commenter states that the proposed rulemaking is contrary to Executive Order 13563 (Improving Regulation and Regulatory Review) of January 18, 2011 and as such we should consider the cost of promulgating the rule and take the least burdensome path among different options.

Response: Executive Order 13563 is supplemental to and reaffirms the principles, structures, and definitions governing contemporary regulatory review that were established in Executive Order 12866 of September 30, 1993. The President issued the referenced Order on January 18, 2011, after we issued our proposed rulemaking. In general, the Order seeks to ensure the regulatory process is based on the best available science; allows for public

[69] See Exhibit 1 RTC Revised Cost Analysis, lines 91, Cost Analysis Fox.

participation and an open exchange of ideas; promotes predictability and reduces uncertainty; identifies and uses the best, most innovative, and least burdensome tools for achieving regulatory ends; and takes into account benefits and costs, both quantitative and qualitative. However, nothing in the Order shall be construed to impair or otherwise affect the authority granted by law to the Agency. Although this Order was issued after our proposed rulemaking, in our review process the cost of compliance was one of the elements addressed to ensure that the requirements to achieve the goals stated in the CAA were beneficial and not burdensome to the regulated entity. Please refer elsewhere in our response to comments for a detailed analysis of the elements required by our regulations for BART determinations.

Comment: The Navajo Nation EPA commented that the FIP proposal has tribal implications as specified in Executive Order 13175, and that consultation is required because of the impacts to Navajo workers, contractors, and subcontractors at San Juan Generating Station and the San Juan Mine.

Response: Executive Order 13175, entitled ‘‘Consultation and Coordination with Indian Tribal Governments’’ (65 FR 67249, Nov. 9, 2000), relates to consultations with tribal governments by federal agencies. As directed by the Executive Order, EPA has recently issued a new policy entitled EPA Policy for Consultation and Coordination with Indian Tribes (May 4, 2011), which re-establishes and clarifies EPA's process for consulting with tribes. We have concluded that this final rule does not have tribal implications, as specified in Executive Order 13175, because this action does not impose federally enforceable emissions limitations on any source located on tribal lands, and neither imposes substantial direct compliance costs on tribal governments, nor preempts tribal law. However, in response to this comment, we engaged in government-to-government consultation at the request of the Navajo Nation regarding this rule and the Nation's previously submitted comments.

4. Other General Legal Comments

Comment: A number of commenters have requested that we should approve the New Mexico Interstate Transport SIP previously submitted in 2007 as it satisfies both our policy and our Consent Decree with WildEarth Guardians. Another commenter states that we have no sound basis in any event for disapproving New Mexico's SIP revision under the visibility clause of section110(a)(2)(D)(i)(II), as that SIP revision simply carries out our own guidance to the states.

Another commenter stated that our proposal to adopt a FIP before NM completes its ongoing rulemaking process to adopt a RH SIP is premature and deprives the state of its significant discretion to establish and administer its own RH program.

Response: We disagree that we should approve the SIP submitted in 2007 because it satisfies both our policy and the WEG Consent Decree. Our consent decree with WEG requires that by August 5, 2011, we must approve a SIP, promulgate a FIP, or approve a SIP in part with promulgation of a partial FIP for New Mexico to meet the requirement of section 110(a)(2)(D)(i)(II) regarding interfering with measures in other states related to protection of visibility. As stated elsewhere in this notice, New Mexico’s 2007 submittal fails to meet this

requirement. That SIP anticipated the timely submission of a substantive RH SIP, which was due by December 17, 2007, as the means of meeting this requirement. Because until recently that RH SIP was not submitted, we had no choice but to seek other means of satisfying our WEG consent decree deadline of August 5, 2011.

Because states were late in their RH SIP submissions, on January 15, 2009, we published a ‘‘Finding of Failure to Submit State Implementation Plans Required by the 1999 regional haze rule.’’ 74 FR 2392. In New Mexico’s case, this finding included sections 40 CFR 51.309(g) and 40 CFR 51.309(d)(4). Section 51.309(d)(4)(vii) states:

> The implementation plan must contain any necessary long term strategies and BART requirements for stationary source PM and NOx emissions. Any such BART provisions may be submitted pursuant to either §51.308(e)(1) or §51.308(e)(2).

This finding started a 2-year clock, which expired on January 15, 2011, for the promulgation of a RH FIP by us, unless those states, including New Mexico, made a RH SIP submission and we approved it. Therefore, we had full authority to promulgate a FIP for the State of New Mexico that included a NOx BART determination for the SJGS. In response to the second commenter, we do not view it as premature to take action on one element of the RH requirements at this time. We chose to exercise this authority to conduct a NOx BART review of the SJGS, as a partial route forward in satisfying our consent decree with WEG.

Although we subsequently received the New Mexico submittal on July 5, 2011, we simply have arrived at a point where we do not have the time to stop our action, review that SIP, propose a rulemaking, take and address public comment, and promulgate a final action as defined in the consent decree.

Comment: One commenter alleges that our statement that the SJGS is more than 30 years old and needs to update its control equipment is inaccurate.

Response: As explained elsewhere in this notice and our proposal, our data supports the need for the SJGS to retrofit their sources of emissions to meet the requirements of the CAA.

Comment: One commenter argues that the Administrative Procedures Act is not adequate regarding impacts on small governmental entities.

Response: This final rulemaking only addresses the disapproval of a portion of the SIP revision submitted by the State of New Mexico for the purpose of addressing the visibility prong of the Interstate Transport rule. See elsewhere in our response to comments for a detailed description of what is addressed in this Final Action. Therefore, comments related to the Administrative Procedures Act and how is not adequate regarding the impacts to small businesses are outside the scope of our proposed action.

Comment: One commenter alleges that “Federal forces” create air regulations to solve a problem that doesn’t exist and threatens our county's livelihood.

Response: This rulemaking is the result of CAA requirements that a SIP must have adequate provisions to prohibit emissions from adversely affecting another state's air quality through interstate transport and that certain facilities install BART to protect visibility in national parks and wilderness areas. The visibility problem in these areas of great scenic importance has been recognized as a significant issue by policymakers from Federal, State and local agencies, industry and environmental organizations.[70] Technical data, that are part of the record, evidence that emissions of SO_2 and NOx from the SJGS are interfering with efforts to protect visibility in other states, as well as impacting Class I areas within NM.

P. Modeling Comments

Comment: The San Juan Coal Company (SJCC) commented that EPA compared the emission levels of both New Mexico's 2018 projected emissions and New Mexico's current emissions that were developed for the WRAP photochemical modeling. EPA relied upon that comparison to determine that all of the sources in New Mexico are achieving the emission levels assumed by WRAP in its modeling except for the SJGS. SJCC alleged that EPA's summary of that analysis presents no relevant data to support the Agency's conclusion. Because the WRAP inventories are so extensive and difficult to research and review, EPA at a minimum should have provided copies of the State's emissions inventories that were reviewed and the specific emissions data for SJGS that supports EPA's conclusion. SJCC stated that EPA should not have put the burden of interpreting the WRAP technical support documents on the reader. Furthermore, in light of the substantial number and different types of emission sources throughout New Mexico, our conclusion is suspect. EPA must produce the specific emissions information for SJGS and for all other emission sources in the State, which isolates SJGS as the only reason for New Mexico's interstate interference with visibility protection.

Response: While we did point in the proposed rule to the WRAP website as a reference for the emission data that we reviewed and compared, we also developed a complete TSD, and included some of the spreadsheets for 2002, i.e., the "current" emissions and for the projected 2018 emissions, in the docket for the proposed rule. Specifically, in Chapters 2 (BART Eligible Determination), 3 (Subject-to-BART Determination) and 4 (BART Guidelines and Modeling Protocols) of the TSD we discussed the WRAP's CALPUFF screening modeling and why we identified SJGS as the only source in New Mexico that was not sufficiently controlled to eliminate interference with the visibility programs of other states.

Our review and the State's first focused on BART eligible sources because these are sources first considered for control in State Regional Haze Plans. In May 2006, NMED conducted an internal review of sources that met the regulatory definition "BART-eligible" source set forth in 40 CFR 51.301.[71] The State identified 11 facilities that were BART- eligible. The WRAP performed the initial BART CALPUFF screening modeling for the state of New Mexico. The modeling was performed for each of the 11 sources and their combined SO2, NOx,

[70] *See* RHR, 64 FR 35714 (July 1, 1999).
[71] BART-eligible sources are those sources, which have the potential to emit 250 tons or more of a visibility-impairing air pollutant, that were put in place between August 7, 1962 and August 7, 1977, and whose operations fall within one or more of 26 specifically listed source categories.

and PM emissions. The purpose of this BART CALPUFF screening modeling was to determine whether any of these 11 sources "emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility" in any Federal Class I area. Consistent with the BART Guidelines, this WRAP initial BART CALPUFF screening modeling evaluated the 98th percentile visibility impacts at any Class I area from each of these 11 sources. Using 0.5 dv as the significance threshold, of the 11 sources, only one source's visibility impacts at any Class I area due to its combined SO2, NOx, and PM emissions was above the 0.5 dv significance threshold (i.e., PNM's SJGS Boilers #1-4). Of the 10 other sources, none were above a 0.33 dv impact. Consequently, only the PNM's SJGS Boilers #1-4 were determined by NMED to be emitting pollutants contributing to impairment of visibility in any Federal Class I area and therefore were subject to BART. We note in the BART Guidelines that states (and by extension EPA when promulgating a FIP) have flexibility in determining an appropriate threshold for determining whether a source contributes to any visibility impairment for the purposes of BART. However, this threshold should not be higher than 0.5 dv. As discussed in the TSD, based on modeling sensitivities, even if we re-ran the BART CALPUFF screening modeling for the other 10 sources, the conclusion reached by both New Mexico and EPA would be unlikely to change. Therefore, these facilities are not subject to BART. As such, New Mexico did not propose additional controls for these facilities nor did the WRAP modeling include additional reductions for these 10 sources. These 10 sources are sufficiently controlled to eliminate interference with other states' visibility programs.

Our review and the States' particularly focused on sources potentially subject to BART because in developing RH plans, sources subject to BART were a particular focus for States in projecting emission reductions. After the running of the WRAP initial BART CALPUFF screening modeling that identified the one source subject to BART, the WRAP ran photochemical modeling for all the sources in the entire region for the base year (2002) and the future year (2018). The WRAP participating states based their RH reasonable progress goals and long-term strategies upon this photochemical modeling and its inputs, particularly the future year projections for all of the sources in the region. All the participating WRAP states agreed to the emissions input for the base and future years. These states are relying upon the WRAP photochemical modeling's future year projected emissions from all the sources in the region to establish their Reasonable Progress Goals. In consultation with New Mexico, the WRAP photochemical modeling included anticipated reductions in emissions at the SJGS. Through the WRAP consultation process, New Mexico provided the anticipated future year projected emissions from SJGS a to be 0.27 lb/MMBtu for units 1 and 3 and 0.28 lb/MMBtu for units 2 and 4. Other WRAP states are relying on the levels modeled for the SJGS units, developed in consultation, in their demonstration of reasonable progress plans towards natural visibility conditions. New Mexico, however, did not adopt limits to insure that the levels assumed for SJGS in the WRAP modeling would be achieved. This discrepancy from what other States assumed is a particular concern because, as discussed previously, SJGS, was found in the BART modeling to, by itself, contribute significantly to visibility impairment.

Our review of the WRAP BART CALPUFF screening modeling and analysis for sources potentially subject to BART in New Mexico is well documented in the TSD as described above. In addition, as part of our review, we evaluated the methodologies used by WRAP in developing their future year emissions projections for the WRAP photochemical modeling. The

spreadsheets on the WRAP website document the future year projections used by the WRAP in their photochemical modeling. Except for SJGS, the WRAP projections in the photochemical modeling were supported by accepted and agreed upon emissions inventory projection methodologies in combination with regulations or other limitations and were based on the data available at the time. This information was publicly available for review on the WRAP website.

Therefore, we adequately explained why our action is limited to the SJGS. In addition, the information we relied on to reach our conclusions is available to the public and was validated by a voluntary group of state, federal and local air agencies dealing with regional air quality issues. Relying on WRAP data provides consistency of analyses throughout the Western states, and assures that our decisions are not arbitrary. Thus, EPA's decision is based on data to support that the SJGS is the only source that requires the enforceable measures in this action to ensure reductions needed to meet the anticipated level of emissions relied upon in the WRAP modeling.

Comment: SJCC contests EPA's conclusion that SJGS is the only source in New Mexico continuing to contribute to visibility impairment in other states because EPA reached this conclusion without comparing all the New Mexico sources' current emissions in the WRAP modeling with their projected 2018 emissions. In addition, EPA did not use the annual emissions value in the "core emission inventories" presented in the WRAP modeling for the SJGS reported in tons per year (tpy). The commenter states that EPA performed its comparison by using emission rates in terms of units of pounds per British thermal unit (lbs/MMBtu) for the SJGS. The commenter continues to allege that in addition to using lbs/MMBtu rather than the annual emissions, EPA apparently, further adjusted SJGS's current emissions that were in the WRAP modeling to account for a shorter averaging time because the WRAP averaging periods were unenforceable. This methodology was not applied to any other source. SJCC claims that if EPA had applied this methodology to the other New Mexico sources, it is extremely likely that EPA would have needed to adjust their current levels as well. Therefore, EPA's comparison analysis is flawed, and EPA cannot assume that the SJGS is the only source in the State (or within the WRAP region for that matter) whose current emissions have not been specified on a basis that is consistent with how projected 2018 emissions were expressed for the WRAP modeling.

Response: As discussed in our proposal and elsewhere in this notice, the analysis conducted by the WRAP provides an appropriate means for evaluating whether emissions from sources in a state are interfering with the visibility programs of other states, as contemplated in section 110(a)(2)(D)(i) of the Act. In developing their visibility projections using photochemical grid modeling, the WRAP states assumed a certain level of emissions from sources within New Mexico. The visibility projection modeling was in turn used by the states to establish their own respective reasonable progress goals. We evaluated the planned emission reductions from point sources in New Mexico assumed in the WRAP 2018 modeling. But for SJGS, the WRAP projections were supported by accepted and agreed upon emissions inventory projection methodologies and/or regulations or other limitations and were based on the data available at the time. As a result of the initial BART analysis performed by the WRAP, identifying SJGS as subject-to-BART, and consultation with New Mexico, the WRAP photochemical modeling included anticipated reductions in emissions at the SJGS. The

reductions at SJGS were the only additional reductions that other states relied upon occurring that NMED would require in their RH/BART SIP. The WRAP's photochemical modeling that was performed to yield daily (24-hour) visibility impairment impacts adjusted the future year NOx emissions from SJGS after input from NMED and PNM to 0.27 lb/MMBtu for units 1 and 3 and 0.28 lb/MMBtu for units 2 and 4.

PNM has subsequently indicated that they cannot meet these relied-upon emission rates without installing additional control equipment and the actual achievable emission rate is approximately 0.30 lb of NOx/MMBtu on a longer-term basis (30 day rolling average) as currently reflected in their permit and 0.33 lb of NOx/MMBtu on a shorter-term basis. Clearly, the difference between what was assumed by the WRAP and what is actually being achieved and is enforceable should not be ignored.

We disagree that our use of lbs/MMBtu versus the annual emissions rate compromised our evaluation. There is no compromise in integrity using the lbs/MMBtu versus using an annual emission rate, since the annual NOx emission rate for each EGU in the WRAP photochemical modeling is calculated using the short term emission rate of lbs/MMBtu multiplied with the heat input and hours of operation. In the future case photochemical modeling for most sources, the actual base emissions from 2002 were projected to the future using differing techniques to project the amount of growth and yield an estimate of the future emissions, taking into account the source type, any applicable regulations and limitations, and data available at the time.. As discussed in another response to comment, the WRAP modeling was conducted in a collaborative effort, and the participating states agreed with these methodologies for generating the future year emission inventories. To apply the same exact procedures in calculating future emissions that were applied to the SJGS to all other sources in New Mexico would be inconsistent with the methodology that the WRAP used. We used the same methodology to calculate emissions for EGU's that were installing controls as the WRAP did for other EGUs installing controls. We used the short-term 0.33 lb/MMBtu emission rate as it directly relates to the averaging period for evaluating the visibility impairment, which is daily. For EGUs, the WRAP utilized a forecasting technique to yield 2018 emission estimates by applying a growth factor to the 2002 firing rate up to a capacity threshold of 0.85[72] For NOx and SOx emissions from EGUs, the WRAP also used data from 2004 to be representative of emission rates for 2018. However, for EGU sources where the installation of controls was anticipated, such as the SJGS, they utilized the short-term emission factor that would result from the addition of controls (lb of pollutant per MMBtu) and then multiplied by the heat input to yield an annual tpy value that was reported in the WRAP's emission spreadsheets. While the commenter is correct that the WRAP's spreadsheets for photochemical modeling report data is in tpy, the WRAP calculation method uses the same basis for calculation that we used in our analysis, a lb of pollutant per MMBtu. We did our emission calculations for the SJGS using the same methodologies as the WRAP for other EGUs installing controls and, therefore, disagree with the commenter's allegation that the SJGS were calculated unfairly.

[72] Document that was included in our proposal docket, "Developing the WRAP Point and Area Source Emissions Projections for the 2018 Reasonable Progress Milestone for Regional Haze Planning", Paula G. Fields, Martinus E. Wolf, Tom Moore, Lee Gribovicz.

We disagree with the characterization that we adjusted the SJGS current emissions in the WRAP. From the comment it is unclear if the commenter's concerns were just about emission rate/calculations for the photochemical modeling or the CALPUFF modeling. Because the comment is unclear, we have addressed their comment for both types of modeling. At issue is the emission rate that needs to be calculated from the SJGS in order to determine visibility impacts from the facility. For the CALPUFF modeling, the July 2005 BART rules recommend using the actual 24-hour maximum emission rate over the last several years as the basis for the baseline emissions, and when a source is controlled in the future the emission rate that would represent a maximum 24-hour potential emission rate after install of controls is used for the future control scenario. Therefore, the values used in the CALPUFF modeling pursuant to EPA regulation and guidance are a short-term (24-hour) emission rate to reflect visibility impairment impacts. For the baseline, we took the existing enforceable permit level, which is a 30-day average and converted it to a 24-hour maximum emission rate to use in CALPUFF to determine the visibility impacts from the SJGS. PNM and NMED's CALPUFF modeling, conducted to estimate daily visibility impairment at Class I areas for the baseline conditions, utilized an emission factor rate of 0.33 lb/MMBtu as the level that they could show compliance on a short-term basis.[73] We utilized the same emission rate in our CALPUFF modeling of the base case visibility impacts.

In the photochemical modeling, the emission rate used in the baseline inventory was based on a NOx emission rate of 0.27 or 0.28 (depending on the boiler Unit) and a 0.33 lb/MMBtu based rate as the maximum 24-hour emission rate in the CALPUFF modeling. We also note that these baseline emission rates were used by the state in consultation. In summary on this issue, EPA believes the commenter did not fully understand how emission rates were modeled for the two modeling platforms in comparison to how the WRAP calculated future year emission rates for EGUs, and we believe we have followed our regulations and guidance in accurately assessing the impacts with appropriate emission rates.

As part of our action for 110(a)(2)(D)(i) of the CAA, we are also setting a SO_2 limit in our action to be protective of the 0.15 lb/MMBtu limit for SJGS units that was included in the WRAP photochemical modeling and relied upon by WRAP states. SJGS has installed control equipment that is achieving below this level currently, but does not have an enforceable limit that limits the SJGS units to 0.15 lb of SO_2/MMBtu.

Comment: The SJCC found the wording of EPA's conclusion comparing New Mexico's current emissions and projected 2018 emissions to be confusing. If all sources in New Mexico, other than SJGS are currently achieving projected 2018 emissions, as EPA asserts, then that means the only emissions reductions that will occur during the first RH planning period from all emission sources in New Mexico will be from SJGS, which SJCC asserts is incorrect. To support this interpretation, the SJCC turned to the New Mexico emissions inventories used in the WRAP modeling and noted that the WRAP modeling projects a reduction in NOx emissions of about 10,500 tpy from the SJGS by 2018. The SJCC notes that in comparison, the State's (then) proposed RH SIP estimated that statewide NOx emissions will decrease by 64,814 tpy by 2018.

[73] NMED Proposed Regional Haze SIP, *available* at AppxA_NM_SJGS_NOxBARTDetermination_06212010.pdf and modeling files provided by NMED to EPA for Review June/July 2009

Based upon these numbers and comparing them, the SJCC concludes that the statement that all sources in New Mexico, except SJGS, are achieving the emission levels assumed by the WRAP modeling is incorrect. Rather, the SJCC asserts, information shows that other New Mexico sources besides the SJGS could be "interfering" with other states' measures to protect visibility. The SJCC concludes that although EPA's interpretation of "interference" may be reasonable on its face, the application of its explanation of its meaning indicates otherwise. EPA's explanation provides no credible justification for singling out the SJGS as the only New Mexico source of emissions that is interfering with other states' visibility-protection measures.

Response: The statement that other sources were achieving the necessary reductions may have been unclear. In developing its emissions inventory, WRAP states estimated the emissions growth and all reductions that were expected to occur from point, area, and other sources, from all regulatory requirements. For New Mexico point sources other than the SJGS, the current federally enforceable emission limits for these sources are consistent with those relied upon in the WRAP modeling. For the SJGS, the WRAP states considered the impact of the RH BART requirements. As discussed in our proposal and elsewhere in this notice, we evaluated the planned emission reductions from point sources in New Mexico assumed in the WRAP modeling and concluded that the SJGS was the only source in New Mexico that was expected to get reductions beyond the current, i.e., baseline levels, because that source was determined to be subject to BART. The 10,500 tpy NOx reduction mentioned by the commenter refers to the reduction in NOx emissions at the SJGS anticipated by the WRAP and included in the future case photochemical modeling.

For other sources, such as the ones the SJCC points to as accounting for the remainder of their 64,814 total reduction of NOx emissions in New Mexico, the WRAP states considered other rules on the books, projected reductions from other federal rules (including those addressing mobile sources), national consent decrees, and mobile source fleet turnover, among other things. These projections were reviewed and agreed to by the WRAP states as a part of their joint development of a complete WRAP emission inventory in support of their RH SIPs, and were relied upon by the WRAP states as a part of the reasonable progress goals. The commenter is correct that other sources in New Mexico are projected to reduce their emissions as well. Those projections are based on the states' best estimate of the growth of emissions from some sources and the future impact of all combined regulatory programs. We conclude, for the purpose of satisfying section 110(a)(2)(D)(i)(II), those projections were reasonable and adequately incorporated into the WRAP modeling.

As to the comment on how we defined "interference" in the context of CAA §110(a)(2)(D)(i)(II), please refer to our response to comments to legal issues (Section O.1 of this notice), where we have a full response as to how we view the term "interfere" in the context of the interstate transport requirements of the CAA. In that response we state that by promulgating a FIP to impose NOx and SO2 emission limits necessary at the SJGS to prevent such interference, as well as to meet the requirement for BART for NOx for this same source, EPA is addressing the requirements of the CAA. In reaching this conclusion, we considered the term "interfere" based upon the facts, information, and data available to EPA at this time.

Comment: PNM commented that our choice of an SO_2 baseline and future emission rate of 0.15 lbs/MMBtu was incorrect, and that an SO_2 emission rate of 0.18 lbs/MMBtu is more appropriate. PNM alleges that this is based on the current, federally enforceable emission limit. PNM asserts that our justification for using the lower SO_2 rate is that the lower rate is expected in the future. The commenter argues that utilizing the current SO_2 limit is the more appropriate modeling method even though the use of the current limit would actually result in higher expected visibility improvements.

Response: We conducted CALPUFF visibility modeling to analyze the impacts on visibility impairment from the NOx BART proposed controls. Due to the nonlinear nature and complexity of atmospheric chemistry and chemical transformation among pollutants, all relevant pollutants should be modeled together to predict the total visibility impact at each Class I area receptor.[74] In order to estimate the benefits from the NOx BART proposed controls, we included the SO2 emissions as relied upon in the WRAP modeling in our CALPUFF modeling. The SO_2 emission limit of 0.15 lb/MMBtu that we input into the NOx BART visibility modeling is based upon what was relied upon in the WRAP modeling. Our FIP makes this WRAP-relied upon SO_2 limit of 0.15 lb/MMBtu federally enforceable. PNM's requested baseline emission rate of 0.18 lb/MMBtu of SO_2 is not what was relied upon in the WRAP modeling.

Per EPA's BART Guidelines, maximum actual emissions should be utilized in the visibility modeling of the base case, and all installed control technology should be considered. Future case modeling should include post control maximum emission rates.[75] We note that the SJGS currently has SO_2 control technology installed and has current actual SO_2 emissions below our proposed FIP limit. As a result, the facility will not have to install additional controls to meet our SO_2 FIP limit. As we are setting the 0.15 lb/MMBtu SO_2 emission limit in the FIP for SJGS, we modeled an emission rate of 0.15 lb/MMBtu for SO_2 for both the baseline (current) and control (future) cases in estimating the anticipated visibility improvement due to installation of the NOx BART proposed controls. By holding the SO_2 emissions constant in the revised baseline (current) and future (control) cases, the modeled predicted improvements in visibility due to the NOx BART proposed controls are kept separate from any potential changes in visibility due to changes in SO_2 emissions. This means the final CALPUFF analysis reflects only the benefits due to the additional NOx reductions beyond the baseline. This also reflects the SJGS's flexibility to increase its SO_2 emissions up to the SO_2 FIP limit of 0.15 lb/MMBtu. It provides a more representative estimate of anticipated visibility improvements from installation of NOx controls.

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[74] Memo from Joseph Paisie (Geographic Strategies Group, OAQPS) to Kay Prince (Branch Chief EPA Region 4) on Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations, July 19, 2006

[75] Page 39129 of BART Rule, "We believe the maximum 24hour modeled impact can be an appropriate measure in determining the degree of visibility improvement expected from BART reductions (or for BART applicability)", Pages 39107-3918 of BART Rule For assessing the fifth factor, the degree of improvement in visibility from various BART control options, the States may run CALPUFF or another appropriate dispersion model to predict visibility impacts. Scenarios would be run for the pre-controlled and post-controlled emission rates for each of the BART control options under review. The maximum 24-hour emission rates would be modeled for a period of three or five years of meteorological data.

Comment: A commenter disagrees with the general modeling approach and assumptions relied upon in EPA's modeling analysis. The commenter contends that we performed numerous different visibility models and chose the one with the highest visibility improvements, even though the chosen model results are the least consistent and the least realistic of the modeling runs prepared. The commenter claims that EPA's chosen value suggests that visibility improvements associated with installing SCRs at SJGS will be three times higher than the model that would assume more realistic, site-specific background ammonia concentrations and the Method 6 post-processing that has been relied upon by PNM, NMED, and WRAP and by EPA itself with regard to SO_2 (by relying on the WRAP modeling). The commenter argues that EPA's rejection of PNM's modeling is unjustified and unnecessarily inflates the expected visibility improvements associated with SCRs. The commenter states that EPA did not raise any of its concerns to PNM or NMED until the issuance of the proposed FIP despite discussions with NMED over several years regarding proper modeling techniques.

Response: This comment is incorrect. In January 2010, NMED proposed as NOx BART, the installation of SCR on the four units at SJGS and relied upon modeling much of which was completed in the 2006-2007 timeframe. SCR is generally considered the most stringent control technology available for NOx. The Guidelines for BART Determinations under the Regional Haze Rule's modeling guidelines in 40 CFR Part 51 App. Y, IV. D. 5 indicate that selection of the most stringent controls available may allow a source or the state agency to skip conducting visibility impairment modeling. Therefore, because NMED selected SCR, the most stringent control generally available, consistent with our RHR requirements (Step 1, Number 9 in the Guidelines), we did not perform a close review of the modeling in the State's proposal during the State's public process. Unfortunately, NMED decided not to finalize their proposal and then withdrew it from further state rulemaking in May 2010.

When we developed the proposed FIP for NOx BART, we conducted our own visibility impact analysis (the degree of visibility improvement reasonably anticipated due to NOx BART at SJGS). In conducting modeling for our proposed NOx BART FIP, we utilized current practices and model versions that were acceptable to us at the time they were conducted in the latter half of 2010. In order to minimize technical concerns with the CALPUFF modeling system version, modeling options selected in CALMET, calculation of emissions (including sulfuric acid mist), and background ammonia levels employed by PNM, we remodeled visibility impacts using the CALPUFF version that we have determined to be appropriate for regulatory purposes. Please see our *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP* document for more details. We remodeled the visibility impacts of SJGS to address these issues with PNM and NMED's modeling, utilizing an acceptable version of CALPUFF. In doing so, we maintain consistency with the most current modeling guidance EPA and the FLM representatives have provided to the states.

We performed numerous modeling runs in order to evaluate the sensitivity of model results to the chosen model inputs and post processing methods to generally inform the process. The justification for selecting the revised IMPROVE equation ("Method 8") over the original IMPROVE equation ("Method 6") is discussed in a separate response to comment. Background ammonia concentrations are also discussed further in a separate response to comments. We disagree with the commenter's assertion we simply picked the modeling results that best

supported our position, without regard to consistency and/or realism. Every parameter and model input was evaluated and selected separately, based on accepted methodology of EPA and the FLM representatives, guidance and available data. During selection of model versions and inputs, EPA R6 staff conferred with other EPA modeling experts and FLM representatives on these modeling issues to ensure that our modeling would be done in accordance with current day CALPUFF modeling practices for visibility impairment analyses. A discussion of model selection and inputs was presented in our proposal and in the TSD and further discussed in the *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP* document.

Results for all modeling scenarios are provided in the Appendix 3 to the TSD, entitled "EPA's CALPUFF Visibility Modeling Results." These results demonstrate the sensitivity of the model to underestimation of background ammonia and the sensitivity to the use of the original IMPROVE equation. Utilizing the different methods and different ammonia levels does result in different predicted impact levels, but the overall change in visibility impairment, i.e., the net visibility improvement, due to the proposed NOx BART FIP emission limit is a significant value in all cases. In other words, while the ammonia levels affect visibility improvement, throughout the range of ammonia background being modeled, the NOx BART controls adopted here result in significant and important visibility improvement. For example, our sensitivity modeling predicted significant visibility improvement at Mesa Verde due to the proposed NOx BART emission limit, ranging from 38 to 56% improvement, depending on the background ammonia and post-processing method selected.

Comment: We received comments that alleged that our CALPUFF modeling analysis failed to fully and appropriately account for the visibility improvement already achieved by recent SO_2 and NOx emission reductions from SJGS. PNM contracted with B&V to perform a BART analysis for the SJGS. The commenters claim that this analysis used EPA's BART guidelines and showed that the low NOx burners installed on all four units at SJGS during the environmental upgrade project between 2007 and 2009 meet the requirements for NOx BART.

Response: Our technical modeling analysis accounted for the visibility improvements achieved by existing controls at the SJGS by incorporating the SO_2 and NOx enforceable permit limits established under the March 10, 2005 consent decree between PNM and the Grand Canyon Trust, Sierra Club, and NMED (2005 Consent Decree) into the baseline emissions modeling scenario. Our analysis of the visibility improvements due to the installation of NOx controls as part of our proposal reflected the visibility improvement due to installation of additional NOx controls beyond those installed as required by the 2005 Consent Decree (completed in 2009). Furthermore, we note that neither NMED nor EPA reviewed or approved a NOx BART analysis including a CALPUFF modeling analysis performed by B&V prior to the installation of controls under the 2005 consent decree. Low-NOx burners do not satisfy the requirements for NOx BART for the SJGS; they are not supported by the NOx BART five-factor analysis.

Comment: We received comments suggesting that modeling should be performed using an emission rate of 0.07lbs NOx/MMBtu, for operation of SCR, rather than the 0.05 lbs/MMBtu emission rate.

Response: Our modeling of the visibility impacts and benefits of the installation of SCR as being NOx BART are based on the determination of the emission limit technically feasible and achievable at the SJGS. This determination is discussed in response to additional comments received on the emission limit achievable by SCR at SJGS.

Comment: We received comments that claim that the installation of SCR at the SJGS would result in imperceptible visibility improvements.

Response: We performed visibility modeling as part of the NOx BART determination analysis. A change of 1 deciview is generally regarded as a perceptible change in visibility (70 FR 39118; July 6, 2005). Our modeling indicates that significant improvements in visibility are anticipated from the installation of SCR to satisfy NOx BART requirements. As discussed in the TSD, our visibility modeling shows that improvement due to installation of SCR is significant and at a level that is certainly perceptible, including a 3.11 dv improvement at Canyonlands and 2.88 dv at Mesa Verde and an improvement of 1 deciview or greater at 7 other Class I areas. Installation of SCR will result in significant and perceptible visibility improvements at a number of Class I areas.

Furthermore, in a situation where the installation of BART may not result in a perceptible improvement in visibility, the visibility benefit may still be significant. "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 128; RH Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations, July 6, 2005). Installation of SCR will result in significant and perceptible visibility improvements at a number of Class I areas. However, a perceptible visibility improvement is not a requirement of the BART determination as a visibility improvement that is not perceptible may still be determined to be significant

Comment: A commenter asserted that EPA's proposed reductions of NOx emissions from the SJGS, to satisfy the requirements of section 110(a)(2)(d)(i)(II) of the CAA, are excessive and not supported by the record. The commenter claimed that EPA failed to provide quantitative details on how those emissions reductions were calculated. Furthermore, the emission reductions achievable by EPA's proposed NOx BART appear to be substantially more than the amount of reductions required for New Mexico to comply with its visibility-related obligation under section 110(a)(2)(D)(i)(II). The commenter alleges that EPA did not provide information on the extent that SJGS's emissions must be adjusted and did not provide a straightforward, side-by-side comparison of SJGS's "current" emissions with and without those emissions being adjusted by the Agency; thus, the actual amounts of the emissions "discrepancies" that EPA stresses in its preamble are unidentified.

The commenter challenges EPA's statement that those discrepancies are "significant" based on "changes in visibility projections" and states that EPA failed to provide modeling results quantifying the visibility impact associated with those emission "discrepancies." The commenter states our "discrepancies" are not differences between SJGS's projected emissions used in the WRAP modeling and an EPA-adjusted level of "current" emissions. Rather, those emissions "discrepancies" are the differences between SJGS's current levels of NOx and SO_2

emissions used in the WRAP modeling and their EPA-adjusted counterparts, i.e., current levels of those emissions adjusted to values that EPA believes should have been used in the modeling. The commenter questioned how, if New Mexico's 2002 NOx emissions were 312,193 tpy (Plan02d) and SJGS corresponding emissions were 30,353 tpy of NOx, only the amount of EPA's adjustment could significantly impact out-of-state visibility impairment when the State's total NOx emissions will likely be at least 10-100 times greater than the "adjustment" amount. The commenter then indicated that it is impossible to independently evaluate the strength of our conclusion regarding the extent to which emissions from SJGS must be "adjusted," because the specific numbers, which purportedly support that Agency conclusion, have not been provided. The commenter then indicated that a judgment of whether EPA's "discrepancies" are significant cannot be evaluated until EPA identifies (1) the magnitudes of those discrepancies and (2) the resultant modeled difference in visibility impairment due to those discrepancies.

The commenter alleges that at no time have we specified the amount of emissions reductions that may be necessary to satisfy New Mexico's obligation under section 110(a)(2)(D)(i)(II) of the CAA. The commenter estimated the amount of NOx reductions in the WRAP modeling for the SJGS as 10,590 tpy and then approximated the amount of NOx emission reductions from SJGS under EPA's scheme to prevent New Mexico's "interference" as approximately 2,200 tpy of NOx after considering the consent decree reductions of 8,411 tpy since 2002. They then commented that if SJGS's current (Plan02d) 2002 NOx emissions are "adjusted" in accordance with EPA's approach, those required emission reductions to reach SJGS's projected level used in the WRAP modeling would increase by an unknown quantity, but they then assumed that the discrepancy is 100% greater than 2,200 tpy, yielding an additional 4,400 tpy NOx reduction needed by 2018 to prevent interference. Commenter indicated that EPA's proposal under § 110(a)(2)(D)(i)(II) to retrofit SJGS's generating units with SCR could achieve roughly 4 times the amount of NOx emission reductions actually required and EPA's proposed NOx emission reductions from the SJGS are excessive.

Response: We disagree with the assertion that EPA must separate the required NOx emission reductions required by SJGS to meet section 110(a)(2)(D)(i)(II) requirements from the NOx emission reductions required to meet the NOx BART determination for SJGS. EPA also disagrees that we are required to conduct a modeling analysis to determine if the NOx reductions necessary for SJGS to meet the 110(a)(2)(D)(i)(II) visibility requirement would result in significant visibility improvement. As we discuss elsewhere in this notice, there is no necessity that we must evaluate these requirements separately and no requirement that we perform a 110(a)(2)(D)(i)(II) visibility analysis. See Legal response to comments, above, regarding our general authority and obligation to act on section 110(a)(2)(D)(i)(II) and RH SIP requirements.

The commenter takes issue with the fact that we did not specifically quantify the difference in emissions between the WRAP modeling and what is being achieved by SJGS, and explain why the discrepancy was believed to be significant. We disagree. We provided in the proposal and TSD a full discussion of how the NOx emissions in the WRAP modeling were not being achieved by SJGS, and how NOx emissions relied upon in the WRAP modeling for the SJGS, and agreed upon during consultation, are not federally enforceable. Therefore, we are establishing federally enforceable NOx emission limits that will eliminate interstate interference and at the same time address the RH BART requirement for NOx for SJGS. The commenter

then asserts that a side by side comparison should have been provided in tons/year. We disagree that is necessary to quantify this comparison in tons/years. The modeling for electric generating units (EGUs) may have been reported out as tons/year (tpy) in the WRAP emission modeling summary tables, but the WRAP actual modeling itself used a short-term emission rate (i.e., lb/MMBtu). See our other response to comment that addresses tpy versus lb/MMBtu modeled emissions in more detail.

In the case of SJGS, the WRAP's photochemical modeling that was performed to yield daily (24-hour) visibility impairment impacts included future emission estimates based on emission rates of 0.27 and 0.28 lb of NOx/MMBtu and 0.15 lb of SO_2/MMBtu. After NMED's consultation with other states, PNM indicated to the State that SJGS could not meet the two future WRAP emission rates for NOx without installing additional NOx controls. PNM claims that the actual emission rate was approximately 0.30 lb of NOx/MMBtu on a longer-term basis as reflected in the permit and 0.33 lb of NOx/MMBtu on a short-term basis as reflected in PNM's visibility impact modeling for SJGS. PNM and NMED's CALPUFF modeling, conducted to estimate daily visibility impairment at Class I areas, utilized an emission factor rate of 0.33 lb/MMBtu for estimation of daily impact as the level that they could show compliance on a short-term basis.[76]

We did not model the difference between the current enforceable emission limits and those emission limits relied upon in the WRAP modeling for SJGS. We find that New Mexico sources, other than the SJGS, are sufficiently controlled to eliminate interference with the visibility programs of other states because the federally enforceable emission limits for these sources are consistent with those relied upon in the WRAP modeling. The SO_2 and NOx emissions relied upon in the WRAP modeling for the SJGS, however, are not federally enforceable. Therefore, we are establishing federally enforceable emission limits for SO2 and NOx for the SJGS to eliminate interference with the visibility programs of other states. There is no requirement to perform a 110(a)(2)(D)(i)(II) visibility analysis.

We note that the 98% largest deciview impact we modeled using 0.33 lb/MMBtu NOx and 0.15 lb/MMBtu SO_2 was 5.15dv at Mesa Verde Class I area. We also modeled visibility impacts using 0.33 lb/MMBtu NOx and 0.18 lb/MMBtu SO_2 in our initial modeling to compare model results with those presented by PNM and NMED. We note that reducing SO_2 emissions from 0.18 to 0.15 lb/MMBtu resulted in a minimal change in visibility impacts at all Class I areas (0.03 dv at Mesa Verde), demonstrating a limited sensitivity to changes in SO2 emissions compared to the large changes in visibility due to decreasing NOx emissions at SJGS, as shown in our modeling of the 0.05 lb of NOx/MMBtu emission rate (SCR case). The use of 0.15 lb/MMBtu SO_2 emission rate is discussed in a separate response to comment. Considering that the 0.33 lb/MMBtu NOx value is approximately 20% greater than the 0.27/0.28 rate, the significant visibility impacts, and the NOx sensitivity demonstrated by the modeling, it is clear this difference in emission rates can have a significant impact on visibility. Even on a long-term basis, the difference between relying upon 0.30 lb/MMBtu compared to the 0.27/0.28 lb/MMBtu would have a significant impact. Although the atmospheric chemistry is not strictly linear in this case, if modeled, the combined difference in NOx and SOx emission rates would likely result in an impact between several tenths of a deciview and 1 deciview. Clearly, the difference

[76] *Id.*

between what was assumed by the WRAP and what is actually being achieved by the SJGS should not be ignored. Since we determined a much lower emission rate for BART, we did not need to directly evaluate the impacts of just achieving the emission rate levels included in the WRAP modeling.

The commenter claims that the SJGS total emissions in 2002 were approximately 10% of the statewide New Mexico NOx emission total. The commenter implies that the reductions found to be needed at SJGS are exceedingly small in comparison to the total State emissions and therefore should not be singled out for control. The commenter fails to consider the proximity of SJGS to Class I areas and the fact that its emissions are concentrated relative to the more diffuse emissions of many sources in the State, such as area and mobile sources. We conduct modeling to quantify visibility impairment impacts because sources that are close to a Class I area and have elevated stacks result in greater plume impact on the Class I area, and will have a greater impact on visibility impairment per ton of NOx, compared to a much greater tonnage of NOx emissions from a variety of sources that are 100s of kilometers away. Much of the New Mexico NOx emissions are spread throughout the state and nearer to the metropolitan areas of Albuquerque and Santa Fe and over 200 kms from Class I areas in other states, in comparison to the SJGS which is just 42 km from the Mesa Verde Class I area. Our modeling indicated that the SJGS had a very large impact in our baseline emissions modeling (5.15 deciviews at Mesa Verde) which highlights why we conduct modeling instead of analyzing emission ratios, which is apparently what the commenter erroneously implies we should do.

The commenter did not provide specific details or cite any guidance as to how EPA erred in estimating emissions for modeling. We disagree with the comments that we have unfairly adjusted the emission calculations to overstate the benefit of our proposal. We have conducted our calculations consistent with EPA methods and guidance, and the WRAP EGU modeling projections.[77] As documented in our TSD, we used the most recent materials, including EPRI's spreadsheets, and current EPA guidance to estimate emissions for our analyses and disagree with the commenter's vague comment that we unfairly adjusted the emissions to what we thought they should be.

Comment: We received comments from the NPS and USFS supporting the reporting of the cumulative visibility impact of SJGS and the cumulative benefits of SCR. NPS and USFS believe 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 BART guidelines do not consider the geographic extent of visibility impairment. NPS and USFS believe the most practical approach to this problem is to consider the cumulative impacts of a source on all Class I areas affected, as well as the cumulative benefits from reducing emissions. They state that cumulative benefits have been a factor in the BART determinations by Oregon and Wyoming, as well as EPA in its proposals for the Navajo Generating Station and the Four Corners Power Plant. They also note that the improvements in visibility impairment due to reductions in NOx emissions in other analyses have been largest at Class I areas other

[77] Document that was included in our proposal docket, "Developing the WRAP Point and Area Source Emissions Projections for the 2018 Reasonable Progress Milestone for Regional Haze Planning", Paula G. Fields, Martinus E. Wolf, Tom Moore, Lee Gribovicz

than the closest Class I area, therefore evaluation of all Class I areas within the modeling domain is appropriate.

Several commenters were opposed to the use of a “cumulative deciviews” or “total” visibility improvement metric. These commenters claim that the ”cumulative deciviews” metric is misleading and that the modeling impact improvements would take place at different locations within a Class I area, within different Class I areas, and probably on different dates so a "cumulative deciviews" result would not be observed by one viewer. They continued that one viewer would not perceive visibility impacts in more than one Class I area simultaneously, or even within relatively short periods of time, in nearly every case. Furthermore, the visibility impacts to a region should not depend on the number of Class I areas present. The commenters state it is improper to consider a "cumulative" deciview improvement over more than one Class I area.

The commenters also suggest that the use of a “total dv” metric is inconsistent with BART guidelines (40 CFR Part 51 Appendix Y, IV.D.5). The guidelines state that it is appropriate to model impacts at the nearest Class I area as well as other nearby Class I areas to determine where the impacts are greatest. Modeling at other Class I areas may be unwarranted if the highest modeled effects are observed at the nearest Class I area. The commenters claim the analysis should be focused on the visibility impacts at the most impacted area, not all areas. The commenters add that states have already successfully dealt with this practice. To illustrate, they point to the Colorado Air Quality Control Commission declining to take a “cumulative” approach to deciviews, even though commenters had argued the concept should influence decision making about BART.

Response: We agree with the NPS and the USDA Forest Service on the utility of a cumulative visibility metric in addition to the other visibility metrics we utilized and we do not agree that our approach is inconsistent with BART guidelines. Our visibility modeling shows that a number of Class I areas are individually and significantly impacted by emissions from the SJGS. The number of days per year significantly impacted by the facility’s NOx emissions is expected to decrease drastically at each Class I area (Table 6-8 of the TSD) as the result of installation of NOx BART emission controls at the SJGS. Clearly, the visibility benefits from NOx BART emission reductions will be spread among all affected Class I areas, not only the most affected area, and should be considered in evaluation of benefits from proposed reductions.

The portion of the BART Guidelines (40 CFR 51 Appendix Y, IV.D.5) that the commenter referenced states: “If the highest modeled effects are observed at the nearest Class I area, you may choose not to analyze the other Class I areas any further as additional analyses might be unwarranted.”[78] This section of the BART Guidelines addresses how to determine visibility impacts as part of the BART determination. Several paragraphs later in the BART Guidelines it states: “You have flexibility to assess visibility improvements due to BART controls by one or more methods. You may consider the frequency, magnitude, and duration components of impairment,” emphasizing the flexibility in method and metrics that exists in assessing the net visibility improvement.

[78] 70 FR 39170.

As discussed in a separate response to comment, for any CALPUFF visibility modeling in a SIP, a protocol addressing procedures and analyses should be determined with the appropriate reviewing authority and affected FLMs. As identified in the BART Guidelines, an important element of the modeling protocol is the choice of receptors used in the model, and the decision of when additional analyses including modeling the effects at Class I areas beyond the nearest area are warranted and necessary. As indicated in the TSD and RTC for this notice, we conferred with EPA OAQPS and FLM representatives on the details of conducting the CALPUFF modeling in this action, and concluded, like PNM and NMED previously concluded in their 2009 modeling, that because of the size of the source and the number of Class I area potentially affected, we should evaluate modeling receptors at all Class I areas within 300 km of the source. We also received comments from FLM representatives supporting the way we conducted our modeling including our evaluation of multiple Class I areas.

Our baseline modeling indicated that visibility impacts from the SGJS were above 0.5 deciviews at all 16 Class I areas within 300km of the SJGS and above 1 deciview at 14 of the 16 Class I areas.[79] These significant visibility impacts support the conclusion that further analyses were warranted. In this specific case, our analysis indicated the largest baseline impact was at the closest Class I area (Mesa Verde) but also indicated very large impacts at other Class I areas. In fact, we found that the largest overall decrease in visibility impact resulting from the proposed NOx emission reductions occurred at a much more distant Class I area (Canyonlands). Therefore, had we stopped our analysis after modeling the visibility improvement at Mesa Verde, we would not have discovered that the largest visibility improvement is predicted to occur elsewhere.

In fully considering the visibility benefits anticipated from the use of an available control technology as one of the factors in selection of NOx BART, it is appropriate to account for visibility benefits across all affected Class I areas and the BART guidelines provide the flexibility to do so. One approach as noted above is to qualitatively consider, for example, the frequency, magnitude, and duration of impairment at each and all affected Class I areas. Where a source such as the SJGS significantly impacts so many Class I areas on so many days, the cumulative 'total dv' metric is one way to take magnitude of the impacts of the source into account.

Therefore, under the BART Guidelines, and based upon these facts, we decided additional analyses were not only warranted but necessary. The BART Guidelines only indicate that additional analyses may be unwarranted at other Class I areas, and in no way exclude such analyses, as the commenter suggests. We concluded that a quantitative analysis of visibility impacts and benefits at only the Mesa Verde area would not be sufficient to fully assess the impacts of controlling NOx emissions from the SJGS.

Again, nothing in the RHR suggests that a state (or EPA in issuing a FIP) should ignore the full extent of the visibility impacts and improvements from BART controls at multiple Class I areas. Given that the national goal of the program is to improve visibility at all Class I areas, it would be short-sighted to limit the evaluation of the visibility benefits of a control to only the most impacted Class I area. As noted previously, NMED and PNM's BART analyses also

[79] 70 FR 39118.Impacts of 1 deciview or greater are considered to cause a visibility impairment

presented visibility impact and improvement projections at all 16 Class I areas. We believe such information is useful in quantifying the overall benefit of BART controls.

Comment: A commenter disagreed with our use of the revised IMPROVE equation (Method 8) post-processing methodology for the CALPUFF model results to calculate visibility impairment for the SJGS NOx BART determination from predicted pollutant concentrations. To be consistent with the WRAP modeling, the commenter claims we instead should have used the original IMPROVE equation (Method 6). The commenter further alleges that our use of Method 8 resulted in much higher visibility impacts and improvements than would have been predicted using Method 6. The commenter also claims that our NOx BART modeling analysis is internally inconsistent because we rely on Method 6 for SO_2 (using the WRAP modeling) and on Method 8 modeling for NOx. Furthermore, the commenters assert that the use of Method 8 is generally justified by EPA by referring to the "regulatory version," however, Method 8 processing is not supported by the "regulatory version" EPA used in its analysis.

Response: Method 6 and Method 8 refer to two different versions of algorithms used to estimate visibility impairment from pollutant concentrations. Method 8 is a more recently available, more refined version of the original equation and is now considered by us and FLM representatives to be the better approach to estimating visibility impairment. Compared to the original IMPROVE equation, this revised IMPROVE equation has less bias, accounts for more pollutants, incorporates more recent data, and is based on considerations of relevance for the calculations needed for assessing progress under the RHR.[80] We are aware that Method 8 tends to show more improvement in visibility than Method 6 when reductions in very small particles are achieved, such as those that are formed by emissions of NOx. We believe that this, however, more accurately reflects real visibility conditions.

We are also aware that at the time the States were working together in the WRAP to develop their RH SIPs, Method 6 was widely employed to develop RPGs and for initial BART analyses. By the time Method 8 was widely available, some States were far enough along in their SIP development that a switch to the newer method would have been disruptive. Because of this, we did not object to the use of Method 6 in the WRAP photochemical modeling or subject-to-BART screening modeling. In the case of New Mexico, Method 6 was used in WRAP modeling to determine which sources are subject to BART. Using Method 6, New Mexico determined that the SJGS was subject to BART because of its significant impact on Class I areas. We reached the same conclusion using either Method 6 or Method 8 in our modeling. New Mexico and the other WRAP States also used Method 6 to develop reasonable progress goals for the Class I areas in the region.

For the purposes of ensuring that New Mexico's emissions do not interfere with other States' plans for visibility improvement, the choice of IMPROVE Method is not relevant. The commenter seems to imply that because the WRAP modeling largely used Method 6, we should use Method 6 for all our analyses, including our source specific analyses for NOx BART.

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[80] Revised IMPROVE algorithm for Estimating Light Extinction from Particle Speciation Data, IMPROVE, January 2006 (http://vista.cira.colostate.edu/improve/Publications/GrayLit/gray_literature.htm) ; Hand, J.L., Douglas, S.G., 2006, Review of the IMPROVE Equation for Estimating Ambient Light Extinction Coefficients – Final Report (http://vista.cira.colostate.edu/improve/Publications/GrayLit/016_IMPROVEEeqReview/IMPROVEeqReview.htm)

However, regardless of which IMPROVE equation is used, New Mexico did not provide federally enforceable limitations on SJGS' SO_2 and NOx emissions to achieve the reductions expected by other States. Without these reductions, other States will not achieve the progress at their Class I areas which they expected under the collaborative WRAP process.

As discussed previously, we have concluded that it is appropriate to address the requirements for NOx BART for SJGS at the same time we address New Mexico's obligations under the visibility prong of 110(a)(2)(D)(i). As part of the BART analysis, we performed CALPUFF modeling to assess the impacts of the NOx BART proposed controls on the single source at issue on visibility impairment. Because Method 8 is the preferred method for analyses being conducted at this time,[81] we estimated the CALPUFF visibility impacts using this peer reviewed algorithm. We also evaluated modeling results using Method 6 to quantify the sensitivity of our results to the choice in visibility impairment algorithm. We note that using either Method 8 or Method 6, substantial visibility benefits were projected for the installation of SCR and support the conclusion that SCR is the appropriate BART control.

We disagree with the comment concerning Method 8 and the "regulatory version" of the model. CALPOST is the post-processing tool used to apply an algorithm to estimate visibility impairment from pollutant concentrations from CALPUFF. We determined CALPOST version 6.221, which includes the option to apply either the Method 6 or the Method 8 algorithm, was the appropriate CALPOST version for our analysis. Since we determined Method 8 was the better method for estimating impairment, we chose to use the version of CALPOST that allowed the calculation using either Method 6 or Method 8. We note that this CALPOST version was approved and supported by the FLMs to allow for application of the revised IMPROVE equation ("Method 8")[82]. As discussed in more detail in a separate response to comment in this Section N and our *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP* document, the ultimate decision on the acceptable model version, formulation, and set-up of CALPUFF and CALPOST for visibility modeling is our responsibility in a FIP situation.

Comment: We received a number of comments concerning the version of the CALPUFF modeling system EPA has used. We utilized CALPUFF Version 5.8 suite for visibility modeling. The commenter indicated revised CALPUFF model Versions 6.112 and 6.4 are available and submitted modeling analyses using these versions of CALPUFF with the suggestion that their modeling should be used instead of ours. A number of commenters stated that Version 5.8 is outdated and overestimates visibility impacts. The commenters argue that the latest version, CALPUFF Version 6.4, which includes updated chemistry and technical

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[81] U.S. EPA. Additional Regional Haze Questions. U.S. Environmental Protections Agency. August 3, 2006, *available* at http://www.wrapair.org/forums/iwg/documents/Q_and_A_for_Regional_Haze_8-03-06.pdf#search=%22%22New%20IMPROVE%20equation%22%22; WRAP presentation, "Update on IMPROVE Light Extinction Equation and Natural Conditions Estimates" Tom Moore, May 23, 2006; 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.

[82] 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, *available* at http://www.nature.nps.gov/air/Pubs/pdf/flag/FLAG_2010.pdf.

enhancements to improve the model's performance and accuracy, should be used to evaluate visibility impacts. They alleged that this version includes updated chemistry that is more robust and performs better and technical enhancements to improve the model's performance and accuracy.

Additionally, commenters included information on a February 16, 2011meeting held with the EPA in Research Triangle Park (RTP), North Carolina along with representatives of the western states utility organization WEST Associates, the American Petroleum Institute (API), and TRC (the developer of CALPUFF). The FLMs participated in this meeting by teleconference. It was agreed at the meeting that the FLMs will take the lead on a review and testing of the CALPUFF model code changes including the new chemistry modules, and Model Change Bulletins (MCBs) and coordinate with EPA.

Response: The commenter indicated that a revised version of the model is available and submitted modeling analyses using CALPUFF model Versions 6.112 and 6.4. Comments received justifying the use of these versions of CALPUFF alleged that they were more scientifically robust and included updated chemistry and technical enhancements to improve the model's performance and accuracy. We disagree that the newer versions of CALPUFF should be used in this action to determine potential visibility impacts. The newer version(s) of CALPUFF have 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 the models 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. There are known technical problems with CALPUFF 6.112 and furthermore, the development of new model versions requires technical and policy evaluations to ensure the models meet regulatory requirements.

The commenter's modeling using different model versions with as yet unapproved mechanisms and the non-guideline techniques indicated different results than past modeling submitted by PNM and the results of our modeling of SJGS.[83] The visibility impacts of their modeling results are much lower compared to results of past PNM, NMED and EPA modeling. These discrepancies are large enough to lend further credence to the need for a full review of the revised modeling systems before considering the modeling results for any decision making.[84,85] EPA was fully justified in following its modeling approach, which was consistent with current EPA and FLM guidelines, as well as similar to modeling recently performed by NMED and PNM. EPA used the approved version of the model in accordance with the appropriate

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[83] Comparison of model results presented by commenter with values in our TSD Chapter 6.

[84] 70 FR 39123, 39124. "We understand the concerns of commenters that the chemistry modules of the CALPUFF model are less advanced than some of the more recent atmospheric chemistry simulations. To date, no other modeling applications with updated chemistry have been approved by EPA to estimate single source pollutant concentrations from long range transport." and in discussion of using other models with more advanced chemistry it continues, "A discussion of the use of alternative models is given in the Guideline on Air Quality in appendix W, section 3.2."

[85] EPA report, "Assessment of the VISTAS Version of the CALPUFF Modeling System", EPA-454/R-08-007, August 2008 available at (http://www.epa.gov/ttn/scram/reports/calpuff_vistas_assessment_report_final.pdf);

procedures, as discussed further in other response to comments and is confident in using our results as one of the five factors in making a BART determination.

In considering the comment that we should use the latest version of CALPUFF (6.4) or an earlier version 6.112, we considered the regulatory status of CALPUFF for visibility analyses and what analyses are needed to utilize an updated CALPUFF modeling system. The requirements of 40 CFR 51.112 and 40 CFR Part 51, Appendix W, Guideline on Air Quality Models (GAQM) and the BART Guidelines which refers to GAQM as the authority for using CALPUFF, provide the framework for determining the appropriate model platforms and versions and inputs to be used. Because of concern with CALPUFF's treatment of chemical transformations, which affect AQRVs, EPA has not approved the chemistry of CALPUFF's model as a 'preferred' model. The use of the regulatory version is approved for increment and NAAQS analysis of primary pollutants only. Currently CALPUFF Version 5.8, is subject to the requirements of GAQM 3.0(b) and as a screening model, GAQM 4. CALPUFF Versions 6.112 and 6.4 have not been approved by EPA for even this limited purpose.

Under the BART guidelines, CALPUFF should be used as screening tool and appropriate consultation with the reviewing authority is required to use CALPUFF in a BART determination as part of a SIP or FIP. The BART Guideline cited and referred to EPA's GAQM which includes provisions to obtain approval through consultation with the reviewing authority. Moreover, we also note that in EPA's document entitled *Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze* (EPA-454/B-07-002), that Appendix W does not identify a particular modeling system as 'preferred' for modeling conducted in support of state implementation plans under 40 CFR 51.308(b). A model should meet several general criteria for it to be a candidate for consideration. These general criteria are consistent with the requirements of 40 CFR 51.112 and 40 CFR 51, Appendix W. Therefore, it is correct to interpret that no model system is considered 'preferred' under 40 CFR 51, Appendix W, Section 3.1.1 (b) for either secondary particulate matter or for visibility assessments. Under this general framework, we followed the general recommendation in Appendix Y to use CALPUFF as a screening technique since the modeling system has not been specifically approved for chemistry. The use of CALPUFF is subject to GAQM requirements in section 3.0(b), 4, and 6.2.1(e) which includes an approved protocol to use the current 5.8 version.

As noted previously, the summary of results provided by the commenter indicate much lower results compared to the current regulatory approved version of the modeling system. The significant difference in results is an indicator that there are important changes in the science between these new versions and the current EPA version. We must have a full understanding of these changes before 'approving' their use. The information provided indicates the new science includes chemistry for which this model was never approved so these changes would necessitate a notice and comment rulemaking and not a simply update as previously done for this model to address bug-fixes and the like. We believe that with such modifications to the modeling system, CALPUFF (Version 6.4) used in this manner could no longer be considered a screening technique under Section 4 of GAQM. The CALPUFF Version 6.112 would be considered an alternative model and would be subject to the requirements of Section 3.2 of GAQM. As

covered in more thorough detail below and in our RTC, these alternate versions of CALPUFF (6.112 and 6.4) are subject to the provisions of GAQM.

Based on the technical information that has been provided, these model versions could not be approved because the information provided is not sufficient and does not comport with the requirements of Section 3.2, including 3.2.2(b)(3) and (e), of GAQM. The model developer has relied upon several articles (Escoffier-Czaja and Scire, 2007; and Scire, et al., 2003) which describe the general reliability of the CALPUFF modeling system and post-processing techniques for use in visibility assessments. Based on our review of this information, we do not believe it provides sufficient information for EPA to assess the suitability of the newer versions of the modeling system as would be done in reviewing models in accordance with GAQM Section 3.2.2(e) requirements.

First, it is important to understand that each of the papers were presented as part of general proceedings at conferences, and therefore do not reflect the thoroughness of a formal peer review process that would be associated with submission to mainline scientific journals. Therefore, we do not consider these references suitable for establishing the validity of the model or post-processing techniques or demonstrating that these models have undergone independent scientific peer review as necessary for reviewing models in accordance with Section 3.2.2(e)(i) of GAQM.

Second, the evaluation techniques utilized by the developer are not appropriate for evaluation of the chemical mechanisms of the CALPUFF system. Appendix A.3 of GAQM describes CALPUFF as generally considered suitable for treatment of dispersion of non-reactive pollutants from a single source or small group of sources for distances beyond 50-km to 200- to 300-km. CALPUFF usage, in the context of the Southwestern Wyoming Air Quality Task Force (SWWYTAF) modeling dataset presented in both Escoffier-Czaja and Scire (2007) and Scire et al. (2003), is treated as a full photochemical modeling system such as the Comprehensive Air Quality Model with Extensions (CAMx) or the Community Multiscale Air Quality Model (CMAQ). However, the evaluation techniques presented in the aforementioned references evaluate the model as a near-field dispersion model, presenting information on sulfate and nitrate performance in quantile-quantile plots (Q-Q plots) only for the Bridger-Teton IMPROVE monitoring site. This technique is not satisfactory for purposes of model performance evaluations for full science chemistry models. Recommended methods and metrics for evaluation of photochemical models are discussed at length in EPA's Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze (EPA-454/B-07-002). Therefore, we do not consider the analysis techniques presented by the model developer sufficient to demonstrate that the model is not biased, as would be done to justify use of a model in accordance with Section 3.2.2(e)(iv) of GAQM.

Finally, no modeling files were provided for review, no protocol or other complete documentation was provided outlining the methods and procedures of operating the alternative model in agreement with the appropriate reviewing authority (EPA Region 6) prior to submission of comments, contrary to requirements of Section 3.2.2(e)(v) of GAQM.

Therefore, on the basis of available information submitted to the public record, we could not approve the use of the alternative model versions in accordance with Section 3.2.2(e) requirements of GAQM. We believe our modeling accurately describes the visibility impacts of the SJGS, the benefits of BART controls, and was based on established and well-recognized methods.

It would be problematic for us to allow the use of any unapproved model variants with potentially significant changes to chemistry treatment without additional information regarding the model's formulation, performance, and acceptability. In promulgating the BART guidelines we made the decision in the final BART Guideline to recommend that the model be used to estimate the 98th percentile visibility impairment rather than the highest daily impact value as proposed. We made the decision to consider the less conservative 98th percentile primarily because the chemistry modules in the CALPUFF model are simplified and likely to provide conservative (higher) results for peak impacts. Since CALPUFF's simplified chemistry could lead to model over predictions and thus be conservative, EPA decided to use the less conservative 98th percentile.[86] The modeling that PNM's contractor performed for PNM was based on CALPUFF versions that have been updated with an allegedly more robust chemistry and purportedly performs better according to the commenter than the current version of the model approved for regulatory actions (CALPUFF version 5.8). If these versions of CALPUFF can be shown to be reliable and acceptable to EPA, it would likely be appropriate to the use Highest Daily impact (1st High instead of the 8th High) based on the presumption that the updated chemistry of CALPUFF model would result in less conservative results than Version 5.8. In past agreements in using the CAMx photochemical model, which has a robust chemistry module, the Region has recommended the use of the 1st High value when sources were being screened out of a full BART analysis based on the CAMx results.[87]

The current version of CALPUFF approved for regulatory action was last updated by EPA on June 29, 2007. The CALPUFF modeling system approved at that time included CALPUFF version 5.8, level 070623, CALMET version 5.8 level 070623, and CALPOST version 5.6394, level 070622. CALPUFF is still considered a screening model for visibility assessments. Therefore, we followed the requirements of Appendix W for screening models in our modeling.[88] We conducted our modeling with the version 5.8 suite with a few exceptions that were discussed among modeling experts from EPA Region 6, EPA/ OAQPS and FLM representatives. Our modeling procedures were discussed more fully in our TSD.

We note that the CALPUFF Versions 6.4 and 6.112 have not been reviewed by EPA for potential regulatory use. PNM's contractor has indicated that a meeting was held with

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[86] "Most important, the simplified chemistry in the model tends to magnify the actual visibility effects of that source. Because of these features and the uncertainties associated with the model, we believe it is appropriate to use the 98th percentile—a more robust approach that does not give undue weight to the extreme tail of the distribution." 70 FR 39104, 39121.

[87] . Comment Letter from EPA Region 6 to TCEQ dated February 13, 2007 regarding TCEQ Final Report "Screening Analysis of Potential BART- Eligible Sources in Texas", December 2006. . ,

[88] GAQM (2005 update) Part 3.0(b), and 4.2.1.1 and 4.2.1.2. Section 4 dealing with screening versions of modeling analyses was updated in the 2005 GAQM notice.

EPA/OAQPS representatives on Feb. 16, 2011 and FLM representatives participated via conference call. The commenter indicates that EPA was going to let the FLM representatives take the lead on review and testing of the new version of CALPUFF (6.4) and coordinate with EPA regarding this issue. Mr. Tyler Fox, Group Leader of the Air Quality Modeling Group at EPA/OAQPS has indicated that EPA will take the lead on the review of the new version (CALPUFF Version 6.4) and that the new addition of a more sophisticated chemistry mechanism is a paradigm shift in treatment of chemistry in CALPUFF and requires additional rule making and public review since CALPUFF was never approved for chemistry in the GAQM and EPA is currently evaluating several models to address current modeling needs for models that can be used for analyses of secondary formation pollutants for ozone, $PM_{2.5}$ secondary, and regional haze/visibility impairment.[89] At this time, EPA and the FLM representatives are in the process of planning to move forward on reviewing all available models to determine their suitability for these analyses. We note that we have reviewed the materials shared at the meeting and discussed the planned steps forward from the meeting, but that CALPUFF Versions 6.4 and 6.112 have still not been evaluated to determine their suitability for use in various contexts.

Based on the applicable GAQM and BART Guidelines regulations, the combination GAQM (2005) citations (6.2.1(e) and 3.0(b)), and the BART Guidelines outline that for any visibility modeling performed with the CALPUFF model in a SIP, a protocol addressing procedures and analyses should be developed with the appropriate reviewing authority and affected FLMs. Approval of an alternate model usually includes consultation with the modeling group at EPA/OAQPS even though ultimate authority in most cases is the Regional Office. In the case of a SIP or a FIP, the EPA Regional Office has the final approval decision on what constitutes appropriate/acceptable modeling. Development of an acceptable protocol with a Regional Office for review and approval of an alternative model (i.e. updated model version, etc.) can be a very significant task and could take 6 months to a year or longer to complete a protocol that detailed submission of information for review including model sensitivity runs, evaluation of model performance, etc., so this can be a sizable hurdle in order for EPA to ensure that we are basing decisions on sound science and the best tools for actions. Approval of updated CALPUFF versions has been such a large task that EPA/OAQPS has typically taken the lead in approval of CALPUFF updates for regulatory use. In this case, PNM did not work out a protocol to address any of these needed elements for EPA Region 6 to conduct a review of PNM's proposed use of an alternate model and the modeling results. The new versions of CALPUFF, version 6.112 or 6.4, that the commenter used to provide modeling analyses have not gone through a full regulatory review in accordance with 40 CFR Part 51 Appendix W Section 3.2.2. Furthermore, the currently available information does not support the approval of these versions of the CALPUFF model for use in making BART determinations. In addition, if these versions of the model were used, EPA would have to reconsider whether using the 98th percentile impact for determining impairment was appropriate. Therefore, EPA does not believe the use of CALPUFF version 6.112 or 6.4 is appropriate for this rule making. We believe we have made the appropriate choice in using CALPUFF version 5.8.

Comment: The USDA Forest Service (USFS) provided comments supporting our assumptions regarding the value of the background ammonia (a constant 1.0 ppb concentration)

[89] Personal communications with Mr. Tyler Fox to verify guidance given at meeting pertaining to alternate CALPUFF versions. July 29, 2011.

used for the visibility analysis. In contrast, PNM claims that the use of variable monthly ammonia values ranging from 0.2 ppb in the winter months to 1.0 ppb during the summer would better reflect the seasonal variations in ammonia concentrations than would a constant, assumed ammonia concentration. PNM further argued that the use of variable monthly ammonia concentrations would still be conservative. Therefore, PNM alleges, since a variable monthly ammonia scheme is more representative and conservative, it should be used instead of EPA's constant ammonia levels. PNM also claims that the use of the Ammonia Limiting Method (ALM) is appropriate given the "conservatism (averaging about a factor of two) of the assumed ammonia relative to observations." PNM further comments that our supporting documentation also states that "alternative levels may be used if supported by data" and therefore we have no basis for criticizing the variable, monthly ammonia levels used in the modeling prepared by PNM. PNM further comments that EPA's decision to rely on constant high background ammonia concentrations unjustifiably results in higher visibility improvements than expected by PNM's more realistic modeling results.

Response: We agree and concur with the use of the 1 ppb ammonia levels from USFS representatives. We disagree with the comments supporting the use of variable, monthly ammonia concentrations. There are several factors to consider with selecting the appropriate ammonia background for estimating visibility impacts, including the length and temporal resolution of the ammonia data collected, whether the ammonia data varies depending on location of collection in comparison to proximity of SJGS plumes, the fluctuation of levels throughout the year, and the importance of plume chemistry from the point of NOx and SO_2 emissions that react with emitted and background ammonia as the plumes transport to downwind receptors. We have examined the available ammonia data collected, including the data cited to in the comments.[90] Our selection of the *IWAQM Phase 2* default ammonia background constant value of 1 ppb (rather than the variable monthly ammonia concentrations suggested by the commenter) better represents ammonia concentrations directly around the SJGS emission sources. The ammonia near the source that is available to interact with the plume as it is emitted is of greater concern for determining visibility impacts from the source due to the atmospheric chemical reactions that occur as the pollutants and ammonia are transported together to a Class I area. Therefore, it is more appropriate to use a background level for ammonia that is representative of the area around the source rather than the ammonia levels at the isolated downwind Class I areas.

The pollutants emitted by the source, such as sulfate and nitrate, will react with available ammonia present near the release point and this ammonia and ammonia reaction products will be transported along with the emitted pollutants to the downwind receptors. The available monitoring data indicates that ammonia levels are higher around the SJGS emission sources and decrease at Mesa Verde, thus supporting that conclusion that when SJGS plumes are transported to Mesa Verde (and other Class I areas), as expected, the SJGS emissions react with ammonia levels near the SJGS resulting in decreasing ambient ammonia levels downwind from the SJGS.

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[90] Sather, et. al. "Baseline ambient gaseous ammonia concentrations in the Four Corners area and eastern Oklahoma, USA," Journal of Environmental Monitoring (September 2008) ("The Sather 2008 report")

The annual average ammonia values at the Substation and Farmington sites, which are the passive monitor readings that are closest to the SJGS, are above the 1 ppb levels that we have chosen to model. This supports our decision to use a constant 1.0 ppb ammonia value as being representative of the area around the source rather than the ammonia levels at the isolated downwind Class I areas. Therefore, the level we modeled is more appropriate. As discussed originally in the TSD and also in our *Complete Response to Comments for NM Regional Haze/Visibility Transport FIP* document, we have taken into consideration the issues raised by the commenter and conferred with the author of the 2008 Sather report, and concluded that the ammonia levels we used in the model are appropriate.

We disagree with the use of the ALM. There is a lack of documentation, adequate technical justification, and validation for the development and use of the ALM. This is discussed further in a separate response to comments.

Comment: PNM contracted with Mr. Joe Scire to review and prepare a report on PNM's BART modeling submitted to NMED during its 2010 state proposed rulemaking process. PNM included this Report as part of its comments to EPA. PNM asserts that the Report confirms that PNM's modeling was consistent with the methodology developed for CALPUFF and it was prepared consistent with the WRAP protocol for BART modeling and the WRAP BART modeling. The commenter argues that since EPA has accepted the WRAP modeling and used it to support its own positions with regard to SO2 in the proposed FIP, and given the fact that PNM's modeling was prepared in a manner consistent with the WRAP modeling, EPA should not need to alter PNM's modeling Moreover, the modeling results achieved by us are merely a function of our modeling methods, not true differences in visibility impacts.

In addition to the commenter's position that the PNM modeling was conducted appropriately, PNM claims that the Report shows more recent developments in modeling science and chemistry could be used to make a more accurate and realistic prediction of the visibility improvements that might result from installing SCRs at SJGS. The recommendations included modeling results from the use of (1) two updated CALPUFF models, Ver. 6.112 and a version with updated chemistry (Ver. 6.4); (2) a refined modeling grid (1km versus 4 km), and (3) Ammonia Limiting Method (ALM). PNM claims use of the ALM would take into account the spatial variations of background ammonia concentrations and account for the consumption of background ammonia by background sources of sulfate and nitrate; and that modeling at a higher resolution of 1 km (compared to 4km) is better, to "better represent the wind flow in a complex terrain regime." Using these modeling techniques, PNM argues that these alternate modeling results show that the greatest visibility improvement that could be achieved at any Class I area by installing SCRs at SJGS would be less than 0.5 dv per unit, and thus less than what a human could perceive.

Response: The commenter indicates that we used the WRAP photochemical modeling to support our action on SO2 controls and from this, somehow concludes we should accept PNM's BART CALPUFF visibility modeling, allegedly consistent with WRAP protocols for assessing the visibility impacts of SJGS. In this instance, the commenter appears to confuse two types of modeling. As we discuss elsewhere in this notice, we did rely on the WRAP's photochemical modeling in considering whether New Mexico sources, specifically SJGS, interfered with other

States' visibility plans. The WRAP's CALPUFF screening modeling was used to determine which BART-eligible sources were subject to BART. As a result of the WRAP CALPUFF screening modeling, New Mexico identified one source subject to BART and, as discussed elsewhere, projected emission reductions that were relied upon by the WRAP in their photochemical modeling. The photochemical modeling was used to consider the emissions from all sources in the regions and was used to establish the reasonable progress goals for the WRAP States. The source-specific CALPUFF visibility modeling, on the other hand, requires a site specific modeling approach designed to evaluate visibility impacts to inform decisions in a BART determination for a specific source. Our CALPUFF visibility modeling, performed using an accepted CALPUFF model version and following applicable guidance and EPA/FLM recommendations, showed significant visibility benefits due to the use of SCR as NOx BART at SJGS.

As discussed elsewhere, since NMED was previously proposing to install the most stringent controls, we did not raise some of our concerns with past modeling, since the BART guidelines allow some flexibility in the need to conduct modeling when the most stringent controls are being required. In our review of PNM's earlier BART CALPUFF visibility modeling, we did note some inconsistencies between PNM's CALPUFF modeling protocol and the EPA approved modeling techniques for source-specific modeling to support a BART determination. As stated in the TSD that accompanied our proposal, however, we agree with commenter that the PNM CALPUFF modeling generally followed the BART protocol for BART screening analyses developed by the WRAP.[91] After the WRAP CALPUFF screening modeling had been generated, some problems with the changes from the previous CALPUFF modeling system that were included in CALPUFF Version 6.211 and another version referred to as the "VISTAS version" had been identified.[92] Version 6.211 has been found to set up situations where the boundary layer could artificially collapse creating unrealistic meteorological conditions and significantly impacting the modeled dispersion (refer to the TSD for additional details). This assessment leads to EPA's approval of CALPUFF 5.8 as the approved version, announced on June 29, 2007. Furthermore, PNM did not consult with Region 6 to establish a protocol for additional CALPUFF modeling as part of the BART visibility analyses, and while they chose to generally follow the protocol developed by the WRAP specifically for BART screening analyses], PNM deviated in some ways. In addition, a site specific protocol for SJGS should have included additional refinements in model settings and incorporation of data. we specifically noted several deviations from appropriate practice in PNM's implementation of the meteorological processing model for CALPUFF, named CALMET, in addition to model

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[91] *CALMET/CALPUFF Protocol for BART Exemption Screening Analysis for Class I Areas in the Western United States (August 15,2006; available at:* http://pah.cert.ucr.edu/aqm/308/bart/WRAP_RMC_BART_Protocol_Aug15_2006.pdf …*)*

[92] "CALPUFF: Status and Update" , Dennis Atkinson, Presentation at Regional/State/Local Modelers Workshop, May 16, 2007. (http://www.cleanairinfo.com/regionalstatelocalmodelingworkshop/archive/2007/presentations/Wednesday%20-%20May%2016%202007/CALPUFF_status_update.pdf); EPA report, "Assessment of the "VISTAS" Version of the CALPUFF Modeling System", EPA-454/R-08-007, August 2008 available at (http://www.epa.gov/ttn/scram/reports/calpuff_vistas_assessment_report_final.pdf); "CALPUFF Regulatory Update", Roger W. Brode, Presentation at Regional/State/Local Modelers Workshop, June 10-12, 2008, available at (http://www.cleanairinfo.com/regionalstatelocalmodelingworkshop/archive/2008/presentations/BRODE_CA.pdf).

versions issues. PNM's CALMET modeling utilized radii of influence values inconsistent with EPA/FLM guidance, and did not follow the EPA/FLM guidance about including upper air observational data. Finally, the CALPUFF modeling system (including CALMET) versions used by PNM did not follow EPA and FLM recommendations and guidance. NMED received comment on not being consistent with established BART modeling procedures from the FLM's during the proposed 308 SIP in August 2010. PNM has also alleged that variable ammonia concentrations should be used, which is inconsistent with the WRAP's BART screening protocol and modeling. Furthermore, NMED specifically requested that PNM perform modeling using the default constant 1 ppb background ammonia concentration on multiple occasions in 2008 as they were developing the proposed RH SIP. These numerous deviations from our guidance methods and procedures and use of an alternate model version were not considered by the commenter. These deviations are discussed further in the Technical Support Document that accompanied our proposal.

As discussed in section 4.3.1 and table 4-6 of the TSD, our sensitivity modeling results support the conclusion that the differences between the WRAP BART screening protocol and our current regulatory approach would not likely change the original determination by the WRAP and NMED of which sources screen out of BART and which are subject to a full BART analysis. We disagree, however, that PNM's modeling was acceptable modeling for evaluating the visibility impacts to inform a BART determination. It would have been inappropriate for us to use a CALPUFF model version with known problems/errors to support our proposed BART determination instead of using the CALPUFF version we approved for regulatory review. Therefore, our BART CALPUFF visibility modeling sought to correct the deficiencies in the PNM BART CALPUFF visibility modeling. In addition, given that the emission rates that we proposed as NOx BART differed from those used in PNM and NMED's BART visibility modeling, it was necessary to perform our CALPUFF visibility modeling, following EPA/FLM guidance and practices, to assess the anticipated visibility improvements from the use of SCR with our proposed BART lower emission rate of 0.05 lb of NOx/MMBtu (NMED/PNM modeling used an emission rate of 0.07 lb of NOx/MMBtu for SCR). As discussed in the TSD, we also had updated emission estimates for sulfuric acid emissions based on the latest information that was included in our modeling. We therefore disagree with the commenter and have explained why we needed to do our own BART CALPUFF visibility analysis. We used the approved version of the model in accordance with the appropriate procedures, as discussed further in other response to comments and we are confident in using our results as one of the five factors in making a BART determination. . The commenter did not provide any direct comments indicating that our BART visibility modeling differed in any way from EPA and FLM modeling guidance and standard practices that EPA and the FLM representatives have approved in other protocols.

With regard to the commenter's suggestion that more recent versions of CALPUFF be used, as discussed in more detail in another response, the two suggested model versions have not gone through the appropriate review to assess if they are founded in appropriate science and perform adequately and reliably and are an improvement to the current version that is acceptable for regulatory actions. PNM did not submit the modeling files as part of its comments. Instead, the PNM submitted report only includes a summary of the modeling results. Therefore, sufficient evidence has not been presented to support PNM's claims had we wished to review

this modeling done with non-approved models. Because the model results provided by the commenter cannot be evaluated and because we have no basis to conclude that these versions provide reliable results, we did not conduct a full review of the submitted summary of the model output results. In looking over the summary of the modeling results in the submitted report, however, we continue to have significant concerns with the model version and options/inputs used given that the results are indicating drastically lower values than our modeling that was conducted with CALPUFF Version 5.8.

We disagree with the use of a higher grid-resolution (1-km) for modeling of visibility impacts using the CALPUFF modeling system. Current EPA guidance from the May 15, 2009 EPA Model Clearinghouse memorandum defaults to a horizontal grid resolution of 4-km. While this guidance does not automatically preclude the use of higher resolution meteorological fields, the memorandum discusses five issues that should be addressed in considering use of a 1-km meteorological grid. None of these five elements were addressed by the commenter. Among the elements that should have been considered were a discussion of the nature of SJGS's source-receptor relationship to Class I areas in the modeling domain and meteorological characteristics which govern these source-receptor relationships, a statistical performance analysis showing the inadequacy of the 4-km CALMET fields, demonstration of the technical adequacy of CALMET diagnostic algorithms in a complex terrain situation, statistical evaluation demonstrating that 1-km CALMET fields perform better than 4-km fields in this specific situation, and discussion of how the enhanced resolution impacts the air quality model. When CALMET is using much higher grid resolutions, such as 1-km grid, on the original Numerical Weather Prediction files, the CALMET meteorological model performance must be examined through appropriate statistical analysis to understand if the CALMET diagnostic adjustments perform appropriately. The Report presented no evidence to support the claim that a 1-km resolution increases the accuracy of the final wind field in specifically modeling the SJGS. The commenter has not provided any statistical or other analyses to justify such a deviation for modeling of the SJGS. Consistent with EPA-FLM recommendations for CALMET and the WRAP BART screening modeling protocol, we determined that a 4-km grid resolution should be used.

We also disagree with the use of the Ammonia Limit Method which is also called ALM and note that it is inconsistent with the nitrate repartitioning approach that has been previously accepted by the FLMs and EPA. There is a lack of documentation, adequate technical justification, and validation for the development and use of the ALM. We and the FLMs have previously reviewed protocols proposing using ALM and we and/or the FLMs have not approved the use of the proposed ALM procedure. In general terms, one of the key issues is ALM is a method to have emissions from other sources consume ammonia, so there is less ammonia to react with the source of interest being modeled. Since ammonia levels from the local area around the plant were used by EPA, to do calculations in the modeling to consume ammonia from surrounding sources would unnaturally consume ammonia that was actually monitored in the vicinity of the SJGS. The ALM has not been approved by EPA and the FLMs through interagency workgroups (IWAQM or FLAG) as an approved part of CALPUFF based visibility analyses. The commenter has not provided any adequate justification, documentation, or other analyses to justify the proposed use of ALM.

Furthermore, the use of ALM requires the input of background ammonia concentrations as well as background concentrations of sulfate, nitrate, and nitric acid. The commenter used background concentrations derived from modeling simulations of the EPA Community Multiscale Air Quality Modeling System (CMAQ) for 2002. The Report's summary shows that monthly averages of predicted concentrations for ammonia, sulfate, nitrate, and nitric acid at a grid resolution of 36 km were used as model inputs to apply the ALM. As discussed in a separate response to comments, available ammonia monitor data indicates that ammonia concentrations are higher in the vicinity of the SJGS and city of Farmington than at the Mesa Verde Class I area (approximately 42 km from SJGS). The use of 36 km resolution model predictions results in an average ammonia level for the entire 36km by 36 km grid cell and does not reflect the higher ammonia concentrations measured near the SJGS which are of greater concern for determining visibility impacts from the source. In addition, the CMAQ model predictions that the commenter used are not an appropriate estimation of background ammonia available for reaction with the SJGS emissions since this CMAQ simulation of "background" concentrations already includes SJGS emissions and reactions they have in the atmosphere. The background ammonia concentration that the commenter input into the non-approved CALPUFF model has already been decreased by reaction with SJGS emissions in the CMAQ model predictions.

The commenter also provided a summary of the modeling results based on variable ammonia levels using CALPUFF version 6.112 and 6.4. We disagree with the use of variable ammonia as we have responded to comments about using variable ammonia levels in another response to comment. We note that variable ammonia levels were not approved in the WRAP's BART screening modeling protocol, nor in protocols by NMED in their 2010 proposal, nor by EPA Region 6 as the commenter seemed to indicate in their comment.

We note that the summary of the report's BART visibility modeling results shows that an SCR emission rate of 0.07 lb/MMBtu was used, rather than the 0.05 lb/MMBtu that we included in our proposal. Using this higher level of 0.07 lb/MMBtu would bias the reduction in impacts from the installation of SCR lower than what we proposed. If their modeling was conducted using our proposed emission rate, it may have shown a value greater than 0.5 dv for each individual unit. This is not relevant though given the numerous issues associated with their modeling analysis as discussed above. Moreover, as noted in the BART Guidelines, the CALPUFF model results are useful for considering the comparative impacts of single sources on visibility impairment in a relative sense and relative to other sources, SJGS's impacts are significant. We note that the SJGS is one of the single largest sources of NOx in the United States and located close to 16 Class I areas. As such, even without modeling results, one could conclude that the source is likely to contribute to significant visibility impacts at multiple Class I areas and that the installation of SCR would lead to meaningful visibility benefits. We also note that our modeling looked at the dv improvements at 16 Class I areas and indicates even greater visibility benefits at other Class I areas than Mesa Verde. The summary of the modeling results provided by the commenter do not evaluate improvements at other Class I areas or any cumulative visibility improvement benefits of SCR, yet they asserted that their analysis showed the maximum impacts from SCR at any Class I area. As we note elsewhere, we actually projected the largest visibility improvement due to SCR control level at the Canyonlands Class I area. As a result, there is no evidence to support the commenter's claim that the largest improvement was less than 0.5 dv at any Class I area. Given the relative size of SJGS and its

location as compared to other BART sources, such results would be surprising. We conclude that our modeling which was performed using an accepted CALPUFF model version and following applicable guidance and EPA/FLM recommendations is an appropriate approach for assessing the visibility benefits due to the use of SCR. This modeling confirmed that our NOx BART determination will result in significant visibility benefits.

Comment: A commenter alleged that EPA lacks the requisite statutory authorization in this proceeding to implement its proposed emission limits for H_2SO_4 and NH_3 emissions from the SJGS. The commenter indicated that if EPA has not shown that limits on emissions of H_2SO_4 and NH_3 from the SJGS will result in reduced visibility impairment or make reasonable progress in a class I area's Reasonable Progress Goal, the Agency has no authority under CAA §169A to require the proposed emission limits on those pollutants from SJGS. The commenter also alleged that if EPA has not shown interference from H_2SO_4 or NH_3 emissions, EPA has no authority to regulate these pollutants under CAA section 110(a)(2)(D)(i)(II). EPA has not shown that its conclusory statement that the proposed limits will "minimize the contribution of these compounds to visibility impairment" falls short of demonstrating a visibility-impairment contribution that is necessary to authorize regulation of those compounds under Section 169A.

The commenter indicated that if EPA has no other policy reason other than appropriate considerations of comity, EPA should defer to New Mexico's determination of which pollutants to regulate with BART requirements. The commenter noted that New Mexico's proposed regional haze SIP under section 309 of 40 C.F.R. part 51 and the withdrawn regional haze SIP proposal under section 308 both demonstrates the State's intent to regulate regional haze during the first planning period with controls only on emissions of SO_2, NOx and PM. The commenter concluded that any proposal by EPA to limit emissions of either H_2SO_4 or NH_3 from New Mexico sources goes beyond the planned scope of the State's regional haze SIP and should be abandoned. The commenter also indicated it is unclear from EPA's proposal if its action is being proposed under CAA section 110(a)(2)(D)(i)(II) as an Interstate Transport provision related to visibility, id., or instead under CAA section 169a as part of a BART determination for the SJGS.

Response: For the reasons discussed elsewhere in our response to comments, we have determined that neither an ammonia limit nor ammonia monitoring requirements are appropriate. The design plans for the SCRs that will be submitted will address design and operation of SCRs based on a maximum ammonia slip level of 2 ppm. Proper design and operation of the SCR should be protective of visibility impairment modeling projections. We disagree with the commenter concerning the need to regulate H_2SO_4. If a power plant is installing SCR at an existing facility in an area where a state has a concern about PM2.5 and regional haze impacts, it would be normal for a state to consider the imposition of limits on H_2SO_4 to minimize/limit the amount of degradation in visibility due to any increases in these pollutants.

As we discussed in our proposal, we have concluded that the low sulfur coal burned at the SJGS generates very little sulfur trioxide (SO_3), and hence H_2SO_4, which is formed when SO3 combines with water in the flue gas to form H_2SO_4. In addition, SCR catalysts are available with a low SO_2 to SO_3 conversion of 0.5%, further limiting the production of H_2SO_4. Nevertheless, we conducted several modeling runs with different H_2SO_4 emission levels and that modeling indicated that increases in H_2SO_4 did result in some visibility degradation at Class I

areas in New Mexico and surrounding states. The H_2SO_4 runs can be found in the TSD and its appendices or in the RTC for this action. Some of the H_2SO_4 runs were not used in the final decision modeling analysis, but provided a basis for being concerned about potential H_2SO_4 impacts and thus limiting the amount of growth in H_2SO_4 from our action.

In summary, we conclude that emissions of H_2SO_4 will not be a significant concern at the SJGS. However, modeling conducted by us and some modeling results provided by PNM's contractors indicate that visibility impairment could worsen if emissions of H_2SO_4 are not limited in an enforceable manner. We do not wish to allow a growth in emissions to occur that would undermine the NOx reductions that we are requiring to ensure that NM emission sources do not interfere with visibility in other states as required by the 110(a)(2)(D)(i)(II). Therefore, we believe we have struck the right balance in limiting emissions of H_2SO_4 to a reasonable level verified by annual stack testing. We are controlling H_2SO_4 under the BART provisions of the RHR and CAA Section 110. Our regulatory authority includes CAA section 169A(b)(2), 40 C.F.R. 51.308(e)(1)(ii) and CAA §110(a)(2)(D)(i)(II).

IV. 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). This action finalizes a source-specific FIP for the San Juan Power Generating Station (SJGS) in New Mexico.

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 a single facility, (SJGS), 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 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 proposed 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 proposed 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 for SJGS being finalized today does not impose any new requirements on small entities. See *Mid-Tex Electric Cooperative, Inc. v. FERC*, 773 F.2d 327 (D.C. Cir. 1985).

D. Unfunded Mandates Reform Act (UMRA)

This rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. Our cost estimate indicates that the total annual cost of compliance with this rule is below this threshold. Thus, this rule is not subject to the requirements of sections 202 or 205 of UMRA.

This rule is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments. This rule contains regulatory requirements that apply only to the San Juan Power Generating Station (SJGS) in New Mexico**.**

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This action merely prescribes EPA's action to address the State not fully meeting its obligation to prohibit emissions from interfering with other states measures to protect visibility. Thus, Executive Order 13132 does not apply to this action. In the

spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicited comment on the proposed rule from State and local officials.

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

This rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), because the rule neither imposes substantial direct compliance costs on tribal governments, nor preempts tribal law. Therefore, the requirements of section 5(b) and 5(c) of the Executive Order do not apply to this rule. However, consistent with EPA policy, EPA consulted with one Tribe on this action.

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

EPA interprets EO 13045 (62 FR 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5-501 of the 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.

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(d) of the National Technology Transfer and Advancement Act of 1995 (‘‘NTTAA’’), Public Law 104–113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This rule would require the affected units at SJGS to meet the applicable monitoring requirements of 40 CFR part 75. Part 75 already incorporates a number of voluntary consensus standards. Consistent with the Agency’s Performance Based Measurement System (PBMS), Part 75 sets forth performance criteria that allow the use of alternative methods to the ones set forth in Part 75. The PBMS approach is intended to be more flexible and cost effective for the regulated community; it is also intended to encourage innovation in analytical technology and improved data quality. At this time, EPA is not recommending any revisions to Part 75; however, EPA periodically revises the test procedures set forth in Part 75. When EPA revises the test procedures set forth in Part 75 in the future, EPA will address the use of any new voluntary consensus standards that are equivalent. Currently,

even if a test procedure is not set forth in Part 75, EPA is not precluding the use of any method, whether it constitutes a voluntary consensus standard or not, as long as it meets the performance criteria specified; however, any alternative methods must be approved through the petition process under 40 CFR 75.66 before they are used.

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.

EPA has 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 pollutants from a single stationary source, the SJGS.

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 **[Insert date 30 days from date of publication in the Federal Register]**.

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 [Insert date 60 days from date of publication in the Federal Register]. 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).

List of Subjects:

40 CFR Part 52

Environmental protection, Air pollution control, Intergovernmental relations, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur dioxide, Visibility, Interstate transport of pollution, Regional haze, Best available control technology.

AUG 4 2011

DATED

Lisa P. Jackson,
Administrator.

Title 40, chapter I, of the Code of Federal Regulations 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*.
2. Part 52 is amended by adding Sections 52.1628 and 52.1629 to read as follows:

§ 52.1628 Interstate pollutant transport and regional haze provisions; What are the FIP requirements for San Juan Generating Station emissions affecting visibility?

(a) *Applicability*. The provisions of this section shall apply to each owner or operator of the coal burning equipment designated as Units 1, 2, 3, or 4 at the San Juan Generating Station in San Juan County, New Mexico (the plant).

(b) *Compliance Dates*. Compliance with the requirements of this section is required by:

- SO_2: No later than 5 years after the effective date of this rule.
- NOx: No later than 5 years after the effective date of this rule.
- H_2SO_4: No later than 5 years after the effective date of this rule.

On and after the compliance date of this rule, no owner or operator shall discharge or cause the discharge of NOx, SO_2, or H_2SO_4 into the atmosphere from Units 1, 2, 3 and 4 in excess of the limits for these pollutants.

(c) *Definitions*. All terms used in this part but not defined herein shall have the meaning given them in the CAA and in parts 51 and 60 of this chapter. For the purposes of this section:

24-hour period means the period of time between 12:01 a.m. and 12 midnight.
Air pollution control equipment includes baghouses, particulate or gaseous scrubbers, and any other apparatus utilized to control emissions of regulated air contaminants which would be emitted to the atmosphere.
Boiler-operating-day means any 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time at the steam generating unit.
Heat input means heat derived from combustion of fuel in a unit and does not include the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources. Heat input shall be calculated in accordance with part 75 of this chapter, using data from certified O_2 and stack gas flow rate monitors.
Owner or Operator means any person who owns, leases, operates, controls, or supervises the plant or any of the coal burning equipment designated as Units 1, 2, 3, or 4 at the plant.
Oxides of nitrogen (NOx) means all oxides of nitrogen except nitrous oxide, as measured by test methods set forth in 40 CFR part 60.
Regional Administrator means the Regional Administrator of EPA Region 6 or his/her authorized representative.

(d) *Emissions Limitations and Control Measures.*

(1) Within 180 days of the effective date of this rule, the owner or operator shall submit a plan to the Regional Administrator that identifies the air pollution control equipment and schedule for complying with paragraph (d) of this section. The NOx control device included in this plan shall be designed to meet the NOx emission rate limit identified in paragraph (d) of this section with an ammonia slip of no greater than 2.0 ppm. The owner or operator shall submit amendments to the plan to the Regional Administrator as changes occur.

(2) *NOx emission rate limit*. The NOx emission rate limit for each unit in the plant, expressed as nitrogen dioxide (NO_2), shall be 0.05 pounds per million British thermal units (lbs/MMBtu), as averaged over a rolling 30 boiler-operating-day period. The hourly NOx and O_2 data used to determine the NOx emission rates shall be in compliance with the requirements in part 75 of this chapter. For each unit on each boiler-operating-day, the hourly NOx emissions measured in lbs/MMBtu, shall be averaged over the hours the unit was in operation to obtain a daily boiler-operating-day average. Each day, the 30-day-rolling average NOx emission rate for each unit (in lbs/MMBtu) shall be determined by averaging the daily boiler-operating-day average emission rate from that day and those from the preceding 29 days.

(3) *SO_2 emission rate limit*. The SO_2 emission rate limit for each unit in the plant shall be 0.15 pounds per million British thermal units (lbs/MMBtu), as averaged over a rolling 30 boiler-operating-day period. The hourly NOx and O_2 data used to determine the NOx emission rates shall be in compliance with the requirements in part 75 of this chapter. For each unit on each boiler-operating-day, the hourly SO_2 emissions measured in lbs/MMBtu, shall be averaged over the hours the unit was in operation to obtain a daily boiler-operating-day average. Each day, the 30-day-rolling average SO_2 emission rate for each unit (in lbs/MMBtu) shall be determined by averaging the daily boiler-operating-day average emission rate from that day and those from the preceding 29 days.

(4) *Sulfuric Acid (H_2SO_4) emission rate limit:* Emissions of H_2SO_4 from each unit shall be limited to 2.6×10^{-4} lb/MMBtu on an hourly basis.

(e) *Testing and monitoring*. Notwithstanding any language to the contrary, the paragraphs in this section apply at all times to Units 1, 2, 3, and 4 at the plant.

(1) By the applicable compliance date in paragraph (b) of this section, the owner or operator shall install, calibrate, maintain and operate Continuous Emissions Monitoring Systems (CEMS) for NOx, SO_2, stack gas flow rate, and O_2 on Units 1, 2, 3, and 4 in accordance with part 75 of this chapter. The owner or operator shall also comply with the applicable quality assurance procedures in part 75 of this chapter for these CEMS. Continuous monitoring systems for NO_x, SO_2, stack gas flow rate, and O_2 that have been certified for use under the Acid Rain Program, and that are continuing to meet the on-going quality-assurance requirements of that program, satisfy the requirements of this paragraph (e)(1). Compliance with the emission limits for NOx and SO_2 shall be determined by using data from these CEMS.

(2) The CEMS required by this rule shall be in continuous operation during all periods of operation of the coal burning equipment, including periods of startup, shutdown, and malfunction, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments. Continuous monitoring systems for measuring SO_2, NOx, and O_2 shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. Hourly averages shall be computed using at least one data point in

each fifteen minute quadrant of an hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant in an hour) if data are unavailable as a result of performance of calibration, quality assurance, preventive maintenance activities, or backups of data from data acquisition and handling system, and recertification events. Each required CEMS must obtain valid data for at least 90.0 percent of the unit operating hours, on an annual basis.

(3) Emissions of H_2SO_4 shall be measured within 180 days of start up of the NOx control device and annually thereafter using EPA Test Method 8A (CTM-013).

(f) *Reporting and Recordkeeping Requirements*. Unless otherwise stated all requests, reports, submittals, notifications, and other communications to the Regional Administrator required by this section shall be submitted, unless instructed otherwise, to the Director, Multimedia Planning and Permitting Division, U.S. Environmental Protection Agency, Region 6, to the attention of Mail Code: 6PD, at 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202-2733.

(1) The owner or operator shall keep records of all CEMS data, stack test data, and CEMS quality-assurance tests required under this section for a period of at least 3 years.

(2) For each unit subject to the emission limitations for SO_2, and NOx, in this section, the owner or operator shall comply with the excess emission reporting requirements in §§60.7(c) and (d) of this chapter, on a semiannual basis, unless more frequent (e.g., quarterly) reporting is requested by the Regional Administrator. For SO_2 and NO_x, any day on which the 30-day rolling average emission limit in paragraph (d) of this section is not met shall be counted as an excess emissions day. The duration of the excess emissions period shall be the number of unit operating hours on that day. Any hour in which a CEMS is out-of-service (excluding hours in which required calibrations and QA tests are performed) shall be counted as an hour of monitor downtime.

(g) *Equipment Operations*. At all times, including periods of startup, shutdown, and malfunction, the owner or operator shall, to the extent practicable, maintain and operate the unit including associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Regional Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the unit.

(h) *Enforcement*.

(1) Notwithstanding any other provision in this implementation plan, any credible evidence or information relevant as to whether the unit would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed, can be used to establish whether or not the owner or operator has violated or is in violation of any standard or applicable emission limit in the plan.

(2) Emissions in excess of the level of the applicable emission limit or requirement that occur due to a malfunction shall constitute a violation of the applicable emission limit.

§ 52.1629 Visibility protection

(a) The portion of the State Implementation Plan revision received on September 17, 2007, from the State of New Mexico for the purpose of addressing the visibility requirements of Clean Air Act §110(a)(2)(D)(i)(II) for the 1997 8-hour ozone and the 1997 fine particulate matter National Ambient Air Quality Standards is disapproved.