FEDERAL REGISTER

Part III

Environmental Protection Agency

40 CFR Part 52
Approval and Promulgation of Implementation Plans; State of Montana; State Implementation Plan and Regional Haze Federal Implementation Plan; Final Rules

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R08–OAR–2011–0851, FRL 9719–9]

Approval and Promulgation of Implementation Plans; State of Montana; State Implementation Plan and Regional Haze Federal Implementation Plan

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is promulgating a Federal Implementation Plan (FIP) to address regional haze in the State of Montana. EPA developed this FIP in response to the State's decision in 2006 to not submit a regional haze State Implementation Plan (SIP) revision. The FIP satisfies requirements of the Clean Air Act (CAA or ''the Act'') that require states, or EPA in promulgating a FIP, to assure reasonable progress towards the national goal of preventing any future and remedying any existing man-made impairment of visibility in mandatory Class I areas. In addition, EPA is approving one of the revisions to the Montana SIP submitted by the State of Montana through the Montana Department of Environmental Quality on February 17, 2012, specifically, the revision to the Montana Visibility Plan that includes amendments to the ''Smoke Management'' section, which adds a reference to Best Available Control Technology (BACT) as the visibility control measure for open burning as currently administered through the State's air quality permit program. This change was made to meet the requirements of the Regional Haze Rule. EPA will act on the remaining February 17, 2012 revisions in the State's submittal in a future action.

DATES: This final rule is effective October 18, 2012.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA–R08–OAR–2011–0851. All documents in the docket are listed on the *www.regulations.gov* Web site. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through

www.regulations.gov, or in hard copy at the Air Program, Environmental Protection Agency (EPA), Region 8, 1595 Wynkoop Street, Denver, Colorado 80202–1129. EPA requests that if at all possible, you contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section to view the hard copy of the docket. You may view the hard copy of the docket Monday through Friday, 8 a.m. to 4 p.m., excluding Federal holidays.

FOR FURTHER INFORMATION CONTACT: Scott Jackson, Air Program, Mailcode 8P–AR, Environmental Protection Agency, Region 8, 1595 Wynkoop Street, Denver, Colorado 80202–1129, (303) 312–6107, or *Jackson.Scott@epa.gov.*

SUPPLEMENTARY INFORMATION:

Definitions

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

• The words or initials *Act* or *CAA* mean or refer to the Clean Air Act, unless the context indicates otherwise.

• The initials *A/F* mean or refer to air-to-fuel.

• The initials *ALM* mean or refer to Ammonia Limiting Method

• The initials *ARM* mean or refer to Administrative Rule of Montana.

• The initials *ARP* mean or refer to the acid rain program.

• The initials *ARS* mean or refer to Air Resources Specialists.

• The initials *ASOFA* mean or refer to advanced separated overfire air.

• The initials *BACT* mean or refer to Best Available Control Technology.

• The initials *BART* mean or refer to Best Available Retrofit Technology.

• The initials *CAA* mean or refer to the Clean Air Act.

• The initials *CAM* mean or refer to compliance assurance monitoring.

• The initials *CAMD* mean or refer to EPA Clean Air Markets Division.

• The initials *CAMx* mean or refer to Comprehensive Air Quality Model.

• The initials *CBI* mean or refer to confidential business information.

• The initials *CCM* mean or refer to EPA Control Cost Manual.

• The initials *CCOFA* mean or refer to close-coupled overfire air system.

• The initials *CDS* mean or refer to circulating dry scrubber.

• The initials *CGA* mean or refer to gas cylinder audit.

• The initials *CELP* mean or refer to Colstrip Energy Limited Partnership.

• The initials *CEMS* mean or refer to continuous emissions monitoring systems.

• The initials *CEPCI* mean or refer to Chemical Engineering Plant Cost Index.

• The initials *CFAC* mean or refer to Columbia Falls Aluminum Company.

• The initials *CFB* mean or refer to circulating fluidized bed.

• The initials *CKD* mean or refer to cement kiln dust.

• The initials *CMAQ* mean or refer to Community Multi-Scale Air Quality modeling system.

• The initials *CPMS* mean or refer to continuous parametric monitoring system.

• The initials *CO* mean or refer to carbon monoxide.

• The initials *CPI* mean or refer to Consumer Price Index.

• The initials *CRF* mean or refer to Capital Recovery Factor.

• The initials *CSAPR* mean or refer to Cross-State Air Pollution Rule.

• The initials *DAA* mean or refer to Dry Absorbent Addition.

• The initials *DPCS* mean or refer to digital process control system.

• The initials *D-R* mean or refer to Dresser-Rand.

• The initials *DSI* mean or refer to dry sorbent injection.

• The initials *EC* mean or refer to elemental carbon.

• The initials *EGU* mean or refer to Electric Generating Units.

• The words *EPA, we, us* or *our* mean or refer to the United States Environmental Protection Agency.

• The initials *ESP* mean or refer to electrostatic precipitator.

• The initials *FCCU* mean or refer to fluid catalytic cracking unit.

• The initials *FGD* mean or refer to flue gas desulfurization.

• The initials *FGR* mean or refer to flue gas recirculation.

• The initials *FIP* mean or refer to Federal Implementation Plan.

• The initials *FLMs* mean or refer to Federal Land Managers.

• The initials *HAR* mean or refer to hydrated ash reinjection.

• The initials *HDSCR* mean or refer to high-dust selective catalytic reduction.

• The initials *HC* mean or refer to hydrocarbons.

• The initials *gr/scf* mean or refer to grains per standard cubic foot.

• The initials *IMPROVE* mean or refer to Interagency Monitoring of Protected Visual Environments monitoring network.

• The initials *IPM* mean or refer to Integrated Planning Model.

• The initials *IWAQM* refer to Interagency Workgroup on Air Quality Modeling.

• The initials *LDSCR* mean or refer to low-dust selective catalytic reduction.

• The initials *LEA* mean or refer to low excess air.

• The initials *LNBs* mean or refer to low NO_X burners.

- The initials *LSD* mean or refer to lime spray drying.
- The initials *LSFO* mean or refer to limestone forced oxidation.
- The initials *LTS* mean or refer to Long-Term Strategy.
- The initials *MACT* mean or refer to maximum achievable control technology.
- The initials *MATB* mean or refer to Montanan's Against Toxic Burning.
- The initials *MDEQ* mean or refer to Montana's Department of Environmental Quality.
- The initials *MDF* mean or refer to medium density fiberboard.
- The initials *MISO* mean or refer to Midwest Independent Transmission System Operator.
- The initials *MDU* mean or refer to Montana-Dakota Utilities Company.
- The initials *MEL* mean magnesium-enhanced lime.
- The initials *MKF* mean or refer to mid-kiln firing of solid fuel.
- The words *Montana* and *State* mean the State of Montana.
- The initials *MSCC* mean or refer to Montana Sulphur and Chemical Company.
- The initials *NAAQS* mean or refer to National Ambient Air Quality Standards.
- The initials *NC* mean or refer to North Carolina.
- The initials *ND* mean or refer to North Dakota.
- The initials *NEI* mean or refer to National Emission Inventory.
- The initials *NESHAP* mean or refer to National Emission Standards for Hazardous Air Pollutants.
- The initials NH_3 mean or refer to ammonia.
- The initials NO_X mean or refer to nitrogen oxides.
- The initials *NP* mean or refer to National Park.
- The initials *NPS* mean or refer to National Parks Service.
- The initials *NSCR* mean or refer to non-selective catalytic reduction.
- The initials *NSPS* mean or refer to New Source Performance Standards.
- The initials *NWR* mean or refer to National Wildlife Reserve.
- The initials *OMB* mean or refer to the Office of Management and Budget.
- The initials *OC* mean or refer to organic carbon.
- The initials *OFA* mean or refer to overfire air.
- The initials *PC* mean or refer to pulverized coal.
- The initials *PH/PC* mean or refer to preheater/precalciner.
- The initials *PM* mean or refer to particulate matter.
- The initials $PM_{2.5}$ mean or refer to particulate matter with an aerodynamic diameter of less than 2.5 micrometers (fine particulate matter).
- The initials PM_{10} mean or refer to particulate matter with an aerodynamic diameter of less than 10 micrometers (coarse particulate matter).
- The initials *PMCD* mean or refer to particulate matter control device.
- The initials *ppb* mean or refer to parts per billion.
- The initials *ppm* mean or refer to parts per million.
- The initials *PRB* mean or refer to Powder River Basin.
- The initials *PSAT* mean or refer to Particulate Matter Source Apportionment Technology.
- The initials *PSD* mean or refer to Prevention of Significant Deterioration.
- The fraction *Q/D* means quantity of emissions over distance.
- The initials *RAA* mean or refer to relative accuracy audit.
- The initials *RATA* mean or refer to relative accuracy test audit.
- The initials *RAVI* mean or refer to Reasonably Attributable Visibility Impairment.
- The initials *RICE* mean or refer to Reciprocating Internal Combustion Engines.
- The initials *RMC* mean or refer to Regional Modeling Center.
- The initials *ROFA* mean or refer to rotating opposed fire air.
- The initials *RP* mean or refer to Reasonable Progress.
- The initials *RPG* or *RPGs* mean or refer to Reasonable Progress Goal(s).
- The initials *RPOs* mean or refer to regional planning organizations.
- The initials *RRI* mean or refer to rich reagent injection.
- The initials *RSCR* mean or refer to regenerative selective catalytic reduction.
- The initials *SCOT* mean or refer to Shell Claus Off-Gas Treatment.
- The initials *SCR* mean or refer to selective catalytic reduction.
- The initials *SDA* mean or refer to spray dryer absorbers.
- The initials *SIP* mean or refer to State Implementation Plan.
- The initials *SMOKE* mean or refer to Sparse Matrix Operator Kernel Emissions.
- The initials *SNCR* mean or refer to selective non-catalytic reduction.
- The initials SO_2 mean or refer to sulfur dioxide.
- The initials *SOFA* mean or refer to separated overfire air.
- The initials *SRU* mean or refer to sulfur recovery unit.
- The initials *TAC* mean or refer to Texas Administrative Code.
- The initials *TESCR* mean or refer to tail-end selective catalytic reduction.

- The initials *TCEQ* mean or refer to Texas Commission on Environmental Quality.
- The initials *tpy* mean tons per year.
- The initials *TSD* mean or refer to Technical Support Document.
- The initials *URP* mean or refer to Uniform Rate of Progress.
- The initials *USFWS* mean or refer to U.S. Fish and Wildlife Service.
- The initials *VOC* mean or refer to volatile organic compounds.
- The initials *WA* mean or refer to Wilderness Area.
- The initials *WEG* mean or refer to WildEarth Guardians.
- The initials *WEP* mean or refer to Weighted Emissions Potential.
- The initials *WETA* mean or refer to Western Environmental Trade Association.
- The initials *WRAP* mean or refer to the Western Regional Air Partnership.
- The initials *YELP* mean or refer to Yellowstone Energy Limited Partnership.

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VI. Statutory and Executive Order Reviews

I. Background

We signed our notice of proposed rulemaking on March 20, 2012, and it was published in the **Federal Register** on April 20, 2012. In that notice, we proposed a FIP to address regional haze in the State of Montana for the first implementation period (through 2018) including determinations of Best Available Retrofit Technology (BART) for specific sources subject to that requirement. 77 FR 23988. Montana did not submit a SIP, knowing that as a consequence EPA would be required to propose and finalize a FIP. A detailed explanation of the CAA's visibility requirements and the Regional Haze Rule as it applies to Montana was provided in the notice of proposed rulemaking and will not be restated here. In that notice, we also proposed to approve a revision to the Montana SIP submitted by the State of Montana through the Montana Department of Environmental Quality on February 17, 2012. The State's submittal contained revisions to the Montana Visibility Plan that included amendments to the "Smoke Management" section, which adds a reference to Best Available Control Technology (BACT) as the visibility control measure for open burning as currently administered through the State's air quality permit program. EPA's rationale for proposing approval of the revisions to the Montana Visibility Plan that included amendments to the "Smoke Management" section was described in detail in the proposal and will not be restated here. We note that in the future, Montana retains the option of submitting a SIP meeting the requirements of the Regional Haze Rule, to replace the FIP.

II. Basis for Our Final Action

We have fully considered all significant comments on our proposal, and, except as noted in section V, below, have concluded that no other changes from our proposal are warranted. Our action is based on an evaluation of Montana's Visibility SIP submittal and our FIP against the regional haze requirements at 40 CFR 51.300—51.309 and CAA sections 169A and 169B. All general SIP requirements contained in CAA section 110, other provisions of the CAA, and our regulations applicable to this action were also evaluated. The purpose of this action is to ensure compliance with these requirements. Our authority for action on Montana's Visibility SIP submittal is based on CAA section 110(k). Our authority to promulgate our FIP is based on CAA section 110(c).

III. Final Action

With this final action we are approving Montana's submittal containing revisions to the "Smoke Management" section of Montana's Visibility Plan that was submitted by the State through the Montana DEQ on February 17, 2012. The SIP includes amendments to the "Smoke Management" section, which adds a reference to BACT as the visibility control measure for open burning as currently administered through the State's air quality permit program as meeting the requirement of 40 CFR 308(d)(3)(v) to consider smoke management techniques for agricultural and forestry management purposes including plans as they currently exist within the state for these purposes. We are promulgating a FIP for the remaining parts of the regional haze requirements. Table 1 shows the control technologies, associated cost, and emission reductions for each source that is subject to the FIP.

TABLE 1—CONTROL TECHNOLOGIES, COST, EMISSIONS REDUCTIONS AND COST-EFFECTIVENESS

Source	Technology [1]	Total capital cost ($)	Total annualized cost ($)	Annual NO_X/SO_2 emissions reductions (tpy)	Cost effectiveness ($/ton)
Ash Grove Cement	LNB + SNCR	1,191,632	2,238,893	1,088 NO_X	2,058
Holcim, Inc	SNCR	1,312,800	650,399	556 NO_X	1,170
Colstrip Unit 1	SOFA + SNCR	13,380,673	3,278,964	2,097 NO_X	1,564
Colstrip Unit 2	Lime Injection + Additional Scrubber Vessel.	28,000,000	4,093,200	4,486 SO_2	912
Colstrip Unit 2	SOFA + SNCR	13,380,673	3,256,127	2,072 NO_X	1,571
Colstrip Unit 2	Lime Injection + Additional Scrubber Vessel.	28,000,000	4,093,200	4,129 SO_2	991
Devon Energy, Blaine County #1 Compressor Station, Engine #1.	NSCR	—	105,000	335 NO_X	282
Devon Energy, Blaine County #1 Compressor Station, Engine #2.	NSCR	—	105,000	335 NO_X	282
Cumulative Total Annual Cost.			13,727,583		

—Total Capital Cost was not calculated.

[1] The technology listed is the technology evaluated as BART, but sources can choose to use another technology or combination of technologies to meet established emission limits. Also where additional control technologies are not required, existing controls may still be necessary to meet established emission limits.

IV. Issues Raised by Commenters and EPA's Responses

This action addresses comments on the Montana Regional Haze FIP. The publication of EPA's proposed rule on April 20, 2012 resulted in a 60-day public comment period that ended on June 19, 2012. We held four public hearings for this proposal. Two hearings were held in Helena, Montana on Tuesday, May 1, 2012 and two hearings were held in Billings, Montana on

Wednesday, May 2, 2012. During the public comment period we received numerous written comments from individual citizens, members of various organizations, and also from Ash Grove Cement (Ash Grove), Columbia Falls Aluminum Corporation (CFAC), EarthJustice, the U.S. Fish and Wildlife Service (USFWS), Holcim Inc. (Holcim), Montana Dakota Utilities (MDU), Montana Sulphur and Chemical Company, the National Parks Service (NPS), the owners of Colstrip Units 1–4, the State of Montana, and WildEarth Guardians (WEG). We have reviewed the comments and provided our responses below. Transcripts from the public hearings and full copies of the comment letters are available in the docket for review.

A. Comments on Modeling

Comment: PPL and others stated that the proposed BART at Colstrip 1 and 2 for both NO_X and SO_2 would result in no reasonably anticipated visibility benefit, even assuming that EPA's emissions reduction estimates and modeling are correct. In one specific comment, the commenter stated:

A projected 0.066 dv is not a visibility improvement that 'may reasonably be anticipated to result from the use' of additional scrubber vessels at Colstrip Units 1 and 2. 42 U.S.C. 7491(g)(2). Such an insignificant projected visibility change is beyond the modeling capability of the CALPUFF model version EPA used and is far below the threshold for human perceptibility.

Response: We disagree that any controls required by our action must demonstrate a perceptible visibility improvement. In a situation where the installation of BART may not result in a perceptible improvement in visibility, the visibility benefit may still be significant. The Regional Haze Rule states:

even though the visibility improvement from an individual source may not be perceptible, it should still be considered in setting BART because the contribution to haze may be significant relative to other source contributions in the Class I area. Failing to consider less-than-perceptible contributions to visibility impairment would ignore the CAA's intent to have BART requirements apply to sources that contribute to, as well as cause, such impairment.

70 FR 39129.

Visibility impacts below the thresholds of perceptibility cannot be ignored because regional haze is produced by a multitude of sources and activities which are located across a broad geographic area. As stated in our proposal, with respect to Colstrip 1 and 2, we weighed the relatively low costs for lime injection with the additional

scrubber vessel against the anticipated visibility impacts and determined that the cost was justified by the visibility improvement. Similarly, we weighed the relatively low cost of separated overfire air (SOFA) + selective noncatalytic reduction (SNCR) against the anticipated visibility benefit and determined that the cost was justified by the visibility benefit.

We respond to the modeling capabilities of CALPUFF in a response to a later comment.

Comment: A commenter asserted that EPA's modeling assumes constant levels of ammonia and failed to consider monitoring data showing that ammonia levels are lower during the winter months.

Response: EPA recognizes that there can be seasonal variability in ambient ammonia concentrations and that it is preferable to use ambient ammonia measurements when such data are available rather than using default background ammonia concentrations. Ammonia monitoring data is not available in Montana, however, ammonia monitoring data is available in western North Dakota at the Beulah monitoring site. Theodore Roosevelt NP, located in western North Dakota, is impacted by Montana BART sources and EPA determined that it would be more appropriate to use the North Dakota ammonia monitoring data instead of using CALPUFF default ammonia concentrations. Therefore EPA used monthly average measured ammonia concentrations shown in Table 2 that were measured by North Dakota at their Beulah monitoring site.[1] The monthly average ammonia concentrations values were derived from data collected during years 2001–2002 and the ambient data were filtered to eliminate data from wind directions associated with sources causing a local bias. North Dakota concluded in its regional haze modeling analysis that these monthly average ammonia values are generally representative of background ammonia concentrations in western North Dakota. As a result, we did not assume a constant level of ammonia as asserted by the commenter, and we did represent seasonal variability in ammonia concentrations.

Additionally, EPA used the POSTUTIL[2] program with the

Ammonia Limiting Method (ALM) to post-process the CALPUFF output to correct the assumption of constant ammonia availability in the model. The CALPUFF model represents multiple plumes that can overlap. The default model approach assumes that background ammonia is fully available to form nitrate in each plume. The ALM method corrects this assumption by partitioning the ammonia between overlapping plumes. Therefore, EPA has fully accounted for non-constant ammonia levels by using monthly measured background ammonia and by using the ALM in the analysis of CALPUFF model results.

TABLE 2—MONTHLY AMMONIA BACKGROUND CONCENTRATIONS

Month	Value (ppb)
Jan	1.22
Feb	1.23
Mar	1.60
Apr	1.94
May	2.29
Jun	1.63
Jul	1.65
Aug	1.69
Sep	0.98
Oct	1.04
Nov	1.37
Dec	1.06

Comment: A commenter stated that EPA failed to acknowledge uncertainty in the CALPUFF model at short distances, and the commenter further argues that model uncertainty increases at distances greater than 200 km and has a tendency to over predict impacts at greater distances.

Response: The Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 2 report (EPA, 1998)[3] reviewed model performance evaluations of CALPUFF as a function of distance from the source and concluded that:

Based on the tracer comparison results presented in Section 4.6, it appears that CALPUFF provides reasonable correspondence with observations for transport distances of over 100 km. Most of these comparisons involved concentration values averaged over 5 to 12 hours. The CAPTEX comparisons, which involved comparisons at receptors that were 300 km to 1000 km from the release, suggest that CALPUFF can overestimate surface concentrations by a factor of 3 to 4. Use of

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[1] Protocol for BART-Related Visibility Impairment Modeling Analyses in North Dakota (Final), North Dakota Department of Health, Division of Air Quality, 1200 Missouri Avenue Bismarck, ND (Nov 2005), p 32–33.

[2] POSTUTIL is a part of the suite of programs associated with the CALPUFF modeling system and is used to repartition ammonia in overlapping puffs. The model is available at: *http://www.src.com/calpuff/calpuff1.htm.*

[3] Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 2 Report and Recommendations for Long-Range Transport Impacts. EPA–454/R–98–019. U.S. Environmental Protection Agency. Research Triangle Park, NC ("IWAQM Phase II Report") (1998), p 18.

the puff splitting option in CALPUFF might have improved these comparisons, but there are serious conceptual concerns with the use of puff dispersion for very long-range transport (300 km and beyond). As the puffs enlarge due to dispersion, it becomes problematic to characterize the transport by a single wind vector, as significant wind direction shear may well exist over the puff dimensions. With the above thoughts in mind, IWAQM recommends use of CALPUFF for transport distances of order 200 km and less. Use of CALPUFF for characterizing transport beyond 200 to 300 km should be done cautiously with an awareness of the likely problems involved.

Therefore, we modeled Class I areas within 300 km of each BART sources but did not model impacts at distances exceeding 300 km.

EPA has acknowledged that there is uncertainty in the CALPUFF model predicted visibility impacts. However, the CALPUFF model can both underpredict and overpredict visibility impacts. For example, in a presentation for the 2010 annual Community Modeling and Analysis System conference, Anderson et al. (2010) [4] found that the CALPUFF model frequently predicted lower nitrate concentrations compared to the CAMx photochemical grid model which has a much more rigorous treatment of photochemical reactions. EPA recognized the uncertainty in the CALPUFF modeling results when EPA made the decision, in the final BART Guidelines, to recommend that the model be used to estimate the 98th percentile visibility impairment rather than the highest daily impact value. While recognizing the limitations of the CALPUFF model in the BART Guidelines Preamble, EPA concluded that, for the specific purposes of the Regional Haze Rule's BART provisions, CALPUFF is sufficiently reliable to inform the decision making process. The Preamble states:

Because of the scale of the predicted impacts from these sources, CALPUFF is an appropriate or a reasonable application to determine whether such a facility can reasonably be anticipated to cause or contribute to any impairment of visibility. In other words, to find that a source with a predicted maximum impact greater than 2 or 3 deciviews meets the contribution threshold adopted by the States does not require the degree of certainty in the results of the model

that might be required for other regulatory purposes. In the unlikely case that a State were to find that a 750 MW power plant's predicted contribution to visibility impairment is within a very narrow range between exemption from or being subject to BART, the State can work with EPA and the FLM to evaluate the CALPUFF results in combination with information derived from other appropriate techniques for estimating visibility impacts to inform the BART applicability determination. Similarly for other types of BART eligible sources, States can work with the EPA and FLM to determine appropriate methods for assessing a single source's impacts on visibility.

77 FR 39123.

Therefore, given that the IWAQM guidance provides for the use of the CALPUFF model at receptor distances of up to 200 to 300 km, and given that EPA has already addressed uncertainty in the CALPUFF model, we believe it is reasonable to use CALPUFF to evaluate visibility impacts up to 300 km.

Comment: A commenter stated that the CALPUFF model cannot accurately predict visibility changes at the levels EPA predicted for Holcim using indirect firing alone (0.125 deciview) or even for the additional improvement from the combination of SNCR + indirect firing as compared to SNCR alone. The commenter believes that the EPA predicted visibility improvement of 0.424 deciview for the combination of SNCR + indirect firing is within the uncertainty range of the CALPUFF model and cannot reliably predict visibility improvements.

Response: We disagree. EPA has previously addressed the issue of uncertainty in the CALPUFF model. EPA recognized the uncertainty in the CALPUFF modeling results when EPA 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. While recognizing the limitations of the CALPUFF model in the Preamble, EPA concluded that, for the specific purposes of the Regional Haze Rule's BART provisions, CALPUFF is sufficiently reliable to inform the decision making process. 70 FR 39123. We continue to maintain that it is appropriate to use CALPUFF for BART modeling for Holcim and other Montana BART sources.

Comment: Some commenters stated that we should have modeled impacts to additional Class I areas. Some commenters stated that EPA should have modeled visibility impacts on Class I areas at a distance of up to 500 km from the BART source and some commenters specified certain Class I areas that they thought should be

included in the modeling for a particular source.

Some commenters stated that the Western Regional Air Partnership (WRAP) subject to BART modeling indicated impacts from BART sources to additional Class I areas that we did not assess. One commenter stated that when assessing the impacts from the Big Stone I facility in the South Dakota SIP, EPA evaluated visibility as far away as Badlands National Park (NP), 470 km, Theodore Roosevelt NP, 555 km, and Boundary Waters Wilderness Area (WA) and Voyageurs NP, 431 km and 438 km, respectively, and the commenter stated that, EPA should evaluate visibility impacts at more distant Class I areas for the Montana FIP.

Response: We modeled all Class I areas within 300 km of the BART source. As discussed in a response to a previous comment, the IWAQM Phase 2 report concluded that CALPUFF can overestimate surface concentrations at distances of 300 to 1,000 km by a factor of 3 to 4. Therefore, IWAQM recommends use of CALPUFF for transport distances of approximately 200 km or less. Use of CALPUFF for characterizing transport beyond 200 to 300 km should be done cautiously with an awareness of the likely problems involved. Therefore, we modeled Class I areas within 300 km of each BART source. We did not model impacts at distances exceeding 300 km.

In the case of the Big Stone I facility in South Dakota, there were no Class I areas within a distance of 300 km of the source. Therefore, the State and the facility agreed in their modeling protocol to evaluate visibility impacts at more distant sources by using a non-regulatory option in CALPUFF called ''puff splitting''. As discussed in the IWAQM Guidance,[5] the use of the puff splitting option in CALPUFF might improve model performance at long distances, but there are also serious conceptual concerns with the use puff splitting to represent puff dispersion for very long-range transport at distances of more than 300 km. EPA concurred with South Dakota on this approach for Big Stone I because there were no Class I areas within 300 km of the source, and EPA approved the South Dakota SIP using these modeling results. In the case of Montana, there are several Class I areas less than 300 km from each BART source, and EPA based its analysis on CALPUFF visibility model results for these areas.

EPA did not use the non-regulatory puff splitting option in CALPUFF to model more distant sources because of

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

[5] IWAQM Phase 2 report, p. 27.

the greater uncertainty in model results at distances of more than 300 km, as we have explained in previous responses.

While WRAP performed CALPUFF modeling at Class I areas more distant than 300 km from Colstrip, WRAP also recognized the larger uncertainty in the model results for distances greater than 300 km. and included the following caveat in their modeling protocol:

Relevant guidance suggests that the CALPUFF model is generally applicable at distances from 50 km to 300 km downwind and may be used for distance less than 50 km when complex flows exist on a case by case basis. [citation omitted] Class I areas in the west generally are located in complex terrain resulting in complex flows. Consequently, the BART screening modeling conducted by the RMC will include results for potential BART eligible sources that reside within 50 km of a Class I area. The WRAP RMC BART screening modeling may also apply CALPUFF to downwind distances greater than 300 km. When providing results to the States, the downwind distance between the BART source and the Class I area will be included, and a recommendation from the RMC as to the utility of applying the results for Class I areas less than 50 km and greater than 300 km from the source. The individual States will need to make their own regulatory assessment of the applicability of the model results at those distances less than 50 km and greater than 300 km.[6]

It also should be noted that WRAP found smaller visibility impacts at the distances of more than 300 km compared to Class I areas at distances of less than 300 km.[7] The BART Guidelines explain that if the highest modeled effects are observed at the nearest Class I area, it may not be necessary to model other Class I areas. The BART Guidelines state:

One important element of the protocol is in establishing the receptors that will be used in the model. The receptors that you use should be located in the nearest Class I area with sufficient density to identify the likely visibility effects of the source. For other Class I areas in relatively close proximity to a BART-eligible source, you may model a few strategic receptors to determine whether effects at those areas may be greater than at the nearest Class I area. For example, you might choose to locate receptors at these areas at the closest point to the source, at the highest and lowest elevation in the Class I area, at the IMPROVE monitor, and at the approximate expected plume release height. If the highest modeled effects are observed at the nearest Class I area, you may choose not

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[6] CALMET/CALPUFF Protocol for BART Exemption Screening Analysis for Class I areas in the Western United States Available at *http://pah.cert.ucr.edu/aqm/308/bart/WRAP_RMC_BART_Protocol_Aug15_2006.pdf.*

[7] Summary of WRAP RMC BART Modeling for Montana, Draft #5 May 30, 2007. More information can be found at *http://pah.cert.ucr.edu/aqm/308/bart.shtml.*

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to analyze the other Class I areas any further as additional analyses might be unwarranted. 70 FR 39170.

Comment: Commenters stated that EPA should have added the visibility impacts at each Class I area to assess cumulative visibility impacts.

Response: Contrary to the commenter's assertion, we did assess cumulative visibility impacts. In our analysis of visibility impacts, we considered the visibility improvement at all Class I areas within 300 km of the subject BART unit. For example, in our analysis of BART control options for Corette, we considered the visibility improvement at all Class I areas within 300 km (Gates of the Mountains WA, North Absaroka WA, Red Rock Lakes WA, Teton WA, UL Bend WA, Washakie WA, and Yellowstone NP). 77 FR 24042 and 77 FR 24046. In our proposal, for each of the BART sources we assessed the visibility improvement at each Class I area within 300 km of the source associated with the controls under consideration, as well as the number of days with a greater than 0.5 deciview impact at each of these Class I areas. Therefore, our proposed rule did not ignore the visibility improvement that would be achieved at areas other than the most impacted Class I area, and we disagree with the assertions that we did not consider the impacts at multiple Class I areas. We did, however, in the proposed rule focus on the visibility benefits at those Class I areas with the most meaningful visibility impacts in determining whether NO_X or SO_2 controls should be determined to be BART. We took a similar approach for all the Montana BART units. We did not ignore the visibility benefits at the other Class I areas but did not consider the benefits sufficient to warrant a change in our determination as to the appropriate level of control.

Comment: USFWS stated that for the three SO_2 control alternatives, EPA made judgments on cost per deciview based on only the most impacted Class I area, Washakie WA and that USFWS continued to believe that it is appropriate to consider both the degree of visibility improvement in a given Class I area as well as the cumulative effects of improving visibility across all of the Class I areas affected. USFWS stated that it does not make sense to use the same metric to evaluate the effects of reducing emissions from a BART source that impacts only one Class I area as for a BART source that impacts multiple Class I areas and that it does not make sense to evaluate impacts at one Class I area, while ignoring others that are similarly significantly impaired.

USFWS stated that if emissions from Corette are reduced, the benefits will be spread well beyond only the most impacted Class I area, and this must be accounted for. USFWS stated that, in the context of the multiple Class I areas that are affected by Corette, the Lime Spray Dryer (LSD) SO_2 control alternative, the cumulative Class I area impact is $12.7 million per deciview of visibility improvement and costs $4,981 per ton of SO_2 removed USFWS stated that LSD should be considered as being a viable candidate for BART for Corette. USFWS made similar comments regarding NO_X controls for Corette.

Response: We disagree. In our analysis of visibility impacts, we considered the visibility improvement at all Class I areas within 300 km of the subject BART unit. As explained in the response to the previous comment, in our analysis of BART control options for Corette, we considered the visibility improvement at all Class I areas within 300 km. In our proposal, for each of the BART sources we assessed the visibility improvement at each Class I area within 300 km of the source associated with the controls under consideration, as well as the number of days with a greater than 0.5 deciview impact at each of these Class I areas. Therefore, our proposed rule did not ignore the visibility improvement that would be achieved at areas other than the most impacted Class I area, and we disagree with the assertions that we did not consider the impacts at multiple Class I areas. We did, however, in the proposed rule focus on the visibility benefits at those Class I areas with the most meaningful visibility impacts in determining whether NO_X or SO_2 controls should be determined to be BART. We did not ignore the visibility benefits at the other Class I areas but did not consider the benefits sufficient to warrant a change in our determination as to the appropriate level of control. As we explained in other responses, we did not use the $/deciview ratio as a basis for our decision.

Comment: EarthJustice's consultant Air Resources Specialists (ARS) performed additional analysis on possible visibility benefits of SCR at Colstrip Units 1 and 2 combined with the benefits of BART controls on SO_2 emissions. The commenter stated that the ARS analysis ''demonstrates that EPA's analysis of visibility benefits of selective catalytic reduction (SCR) controls is incomplete and inadequate.'' The commenter also stated, ''the evidence demonstrates that with SCR and SO_2 controls, the visibility impairment at UL Bend WA and Theodore Roosevelt NP attributable to

Colstrip would be virtually eliminated, the very goal of the CAA haze requirements.''

The commenter also stated that when SCR + SOFA is coupled with a dry scrubber/baghouse, it is likely that Corette would no longer have any noticeable impact on haze in any Class I area, and this result complies with the Congressional directive to eliminate haze in Class I areas.

Response: We disagree that our analysis was incomplete or inadequate. We analyzed visibility benefits for both SO_2 and NO_X emissions reductions following procedures established in the BART Guidelines, and we proposed emissions reductions consistent with the five factor analysis. The Regional Haze Rule has a goal that anthropogenic visibility impairment be eliminated by 2064; however, it does not require that all anthropogenic contributions to visibility impacts be fully eliminated in the near term, nor is that the goal of the BART element of the Regional Haze program. 40 CFR 51.308 (e)(1)(ii)(A) requires that EPA consider the cost of compliance; the energy and nonair quality environmental impacts; any pollution control equipment in use at the source; the remaining useful life of the source; and the degree of improvement which may be reasonably anticipated to result from the use of such technology. Visibility improvement is only one of the five factors that are required to be considered. Our proposed BART controls achieve significant reductions in contributions to visibility impairment while also considering other components of the five factor analysis.

Comment: EarthJustice stated that, ''ARS concluded that the incremental benefit of SCR compared to SNCR at Colstrip Units 1 and 2 is larger when viewed in combination with the SO_2 emission controls at either emission rate.''

Response: ARS estimated the relative improvement in SCR compared to SNCR for the case with baseline SO_2 emissions and for the case with our proposed BART SO_2 emissions. The ARS analysis showed that the incremental improvement in SCR compared to SNCR was almost identical for the 98% worst days regardless of the level of SO_2 emissions used. For example, in EPA's analysis the incremental improvement of SCR over SNCR for Theodore Roosevelt NP was 0.27, 0.23, and 0.28 deciview, respectively, for 2006, 2007 and 2008. The ARS analysis found incremental improvements of 0.28, 0.26, and 0.28 deciview, respectively, for 2006, 2007 and 2008. Moreover, ARS did not perform additional CALPUFF

simulations for this analysis, but only combined estimates of extinction contributions from different CALPUFF simulations.

Comment: EarthJustice stated that that we aggregated Colstrip Units 1 and 2 for assessing visibility benefits of SNCR, but arbitrarily kept our assessment of benefits of SCR segregated by unit.

Response: We disagree. Modeling was performed in the same manner for SCR as for SNCR. The modeling protocol, results, and final report were available in the docket. Our evaluation of the visibility benefits was made in consideration of all of the modeling results, which includes a visibility improvement assessment for application of SCR at Colstrip Units 1 and 2 individually, as well as an assessment of the total visibility benefit from application of SCR at both units collectively.

Comment: A commenter stated that we failed to examine the collective visibility benefit of SCR in combination with SO_2 upgrades at Colstrip Units 1 and 2.

Response: We examined the individual benefits of NO_X and SO_2 controls to be able to assess the difference between pollutant-specific control options. Our evaluation of the visibility benefits was made in consideration of all of the modeling results.

Comment: EarthJustice stated that their contractor (ARS) performed AERMOD simulations to evaluate the impacts of Colstrip SO_2 emissions relative to the 1-hour average SO_2 National Ambient Air Quality Standard (NAAQS) and reported modeled violations of the SO_2 NAAQS.

Response: EPA will address compliance with the 1-hour average SO_2 NAAQS separately from Regional Haze requirements. It is beyond the scope of this rulemaking. It will be addressed by EPA at a later date.

Comment: Holcim commented that EPA discarded all prior modeling and developed a new modeling analysis in 2011. Holcim stated that EPA did not explain why it used a new modeling analysis and that EPA's BART conclusions are therefore based on modeling that is not transparent and not available for review.

Response: We disagree. As we explained in our proposal, we used CALPUFF modeling to evaluate emissions control scenarios that were consistent with the application of control scenarios for the Montana sources that were subject to BART. We did this because we were unable to obtain the modeling files from some of the sources and we wanted each source

to be modeled consistently. The modeling protocol, final report, and all related files were available for review in the docket.

Comment: The Western Environmental Trade Organization (WETA) commented that the EPA recently approved the SIP for regional haze developed by the State of North Dakota. WETA explained that the North Dakota plan relied on extensive modeling that demonstrated emissions control technology installations at certain facilities would result in insignificant improvement in visibility. WETA requested that the EPA develop a visibility plan for Montana that offers the same flexibility and cost-effective standards included in North Dakota's plan.

Response: WETA did not explain what flexibility it was seeking; therefore, we are not able to evaluate whether such flexibility could be accommodated. To the extent that WETA is stating that our proposed requirements are not cost-effective, we disagree. To the extent that WETA is stating that we are being inconsistent with decisions we made for regional haze in North Dakota, we disagree. We have responded to more specific comments on the cost-effectiveness of controls elsewhere.

Comment: The commenter stated that EPA's proposed BART determinations for Colstrip Units 1& 2 are erroneous because EPA's modeling failed to include actual air quality measurements, including visual quality measurements, in its inputs to its regional haze model. The commenter further stated that real air quality data for Class I areas is critical to determining what the degree of visibility improvement may be in a given Class I area.

Response: EPA used ambient monitoring data to evaluate the CMAQ and CAMx grid model simulations that were used for modeling the uniform rate of progress toward natural visibility conditions. However, the commenter appears to be referring specifically to the CALPUFF model simulations used to evaluate visibility impacts of BART sources. The BART Guidelines require that visibility impacts from BART sources be evaluated in comparison to natural visibility conditions. The procedures used to estimate natural visibility conditions are described in the ''Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule.'' [8] It would be

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[8] Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule, U.S. Environmental Protection Agency, September 2003.

inappropriate to use ambient monitoring data for current degraded visibility conditions in the evaluation of BART source visibility impacts. EPA previously considered and responded to the comment that current visibility conditions should be used in BART source evaluations in 40 CFR part 51, appendix Y, promulgated at 70 FR 39104. EPA considered the approach of assessing a BART-eligible source's impacts on visibility by using current or near-term future conditions, and EPA determined that BART visibility impacts should be evaluated in comparison to natural background visibility. In the final rulemaking EPA wrote:

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

70 FR 39124.

Therefore, EPA correctly used estimates of natural visibility conditions in our evaluation of BART source visibility impacts, and we disagree with the comment that we failed to appropriately use air quality data at Class I areas.

Comment: EarthJustice stated that they do not agree with EPA's approach to use the fifth factor in determining the degree of visibility improvement from emissions control technologies where EPA adds an additional incremental benefit factor with an apparent but unstated threshold for improvement sufficiency that is contrary to the purpose and direction of the CAA.

Response: We disagree that we only evaluated visibility benefit on an incremental basis and that we used a threshold for improvement sufficiency. In the proposed FIP, we included tables showing the visibility improvement for

Can be found at: *http://www.epa.gov/ttncaaa1/t1/ memoranda/rh_envcurhr_gd.pdf.*

control options as compared to baseline conditions. Incremental improvement can be easily calculated from the data in the tables, however, we did not calculate this separately for each option. In addition, our modeling protocol, modeling report and tables of results were included in the docket.

Comment: Commenters stated that we used incorrect baselines for modeling impacts from sources at Corette and Colstrip.

Response: We explain our rationale for the chosen baseline periods in responses to other comments.

B. General Comments on BART

Comments: Montana Department of Environmental Quality (MDEQ) stated that EPA should have used a dollar-per-deciview ($/deciview) metric rather than the $/ton metric to evaluate BART and reasonable progress. MDEQ argued that the use of deciviews is consistent with the Regional Haze Rule, which expresses Reasonable Progress Goals (RPGs), baseline visibility, current visibility conditions and natural conditions in deciviews. MDEQ also referenced both the BART Guidance and the Reasonable Progress Guidance to support this argument.

The NPS stated that one of the options suggested by the BART Guidelines to evaluate cost-effectiveness is cost/deciview and that the NPS believes that visibility improvement must be a critical factor in any program designed to improve visibility. The NPS stated that compared to the typical control cost analysis in which estimates fall into the range of $2,000–$10,000 per ton of pollutant removed, spending millions of dollars per deciview to improve visibility may appear extraordinarily expensive, but that the NPS compilation of BART analyses across the United States reveals that the average cost per deciview proposed by either a state or a BART source is $14–$18 million, with a maximum of $51 million per deciview proposed by South Dakota at the Big Stone I power plant. The NPS noted that even though it has no Class I areas, Nebraska Department of Environmental Quality has chosen $40 million/deciview as a cost criterion, which is also above the national average. The NPS compared its estimates for annual cost of adding SOFA + SCR to EPA's estimates for visibility impacts and stated that the cost-effectiveness of adding SOFA + SCR to improve visibility at the five Class I areas modeled by EPA is less than $10 million/deciview and significantly less than the $14–$18 million/deciview national average of BART proposals and determinations.

Response: For BART, the BART Guidelines require that cost effectiveness be calculated in terms of annualized dollars per ton of pollutant removed, or $/ton. 70 FR 39167. MDEQ and the NPS are correct in that the BART Guidelines allows for the $/deciview ratio as an additional cost effectiveness metric that can be employed along with $/ton for use in a BART evaluation. However, the use of this metric further implies that additional thresholds or notions of acceptability, separate from the $/ton metric, would need to be developed for BART determinations. We have not used this metric for BART purposes because (1) It is unnecessary in judging the cost effectiveness of BART, (2) it complicates the BART analysis, and (3) it is difficult to judge. The $/deciview metric has not been widely used and is not well-understood as a comparative tool. In our experience, $/deciview values tend to be very large because the metric is based on impacts at one Class I area on one day and does not take into account the number of affected Class I areas or the number of days of improvement that result from controlling emissions. In addition, the use of the $/deciview suggests a level of precision in the CALPUFF model that may not be warranted. As a result, the $/deciview can be misleading. We conclude that it is sufficient to analyze the cost effectiveness of potential BART controls using $/ton, in conjunction with an assessment of the modeled visibility benefits of the BART control. Within the context of reasonable progress, the Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program, states that "[y]ou should evaluate both average and incremental costs." [9] This is consistent with the approach under BART. As commenters note, the guidance then stated that "simple cost effectiveness estimates based on a dollar-per-ton calculation may not be as meaningful as a dollar-per-deciview calculation, especially if the strategies reduce different groups of pollutants." However, the guidance makes this statement on the basis that "different pollutants differently impact visibility impairment." That is, for example, a one ton reduction in SO_2 would have a greater visibility benefit than a one ton reduction of coarse mass. As only SO_2 and NO_X controls were evaluated for the reasonable progress point sources, the use of the $/deciview is not particularly

[9] Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program, U.S. Environmental Protection Agency, June 1, 2007, p.5–2.

relevant or informative. In addition, we did not use the $/deciview metric for our evaluation of reasonable progress controls for largely the same reasons as stated above for BART controls.

Comment: The NPS stated that we used inconsistent criteria in selecting BART controls.

Response: We disagree. As explained later, pursuant to 40 CFR 51.308(e)(1)(ii)(A) we considered the following five factors in our analysis: The cost of compliance; the energy and nonair quality environmental impacts; any pollution control equipment in use at the source; the remaining useful life of the source; and the degree of improvement which may be reasonably anticipated to result from the use of such technology. The Regional Haze Rule defines BART as the best system of continuous emission control technology available and associated emission reductions achievable, as determined through an analysis of these five factors. The NPS is correct in that the BART Guidelines allows for the $/deciview ratio as an additional cost effectiveness metric that can be employed along with $/ton for use in a BART evaluation of the five statutory factors. 70 FR 39126 to 70 FR 39127. While the Regional Haze Rule may not prevent us from establishing a bright line for some of the factors such as cost-effectiveness and visibility, we are not required to do so, and have not done so for this action as the cost and visibility factors are both weighed in making control decisions. Also, while the BART Guidelines allows for the $/deciview ratio as an additional cost effectiveness metric that can be employed along with $/ton for use in a BART evaluation, we have not used this metric in our evaluation. As explained in our determinations for each source, the cost effectiveness of controls on a dollar per ton basis and the visibility benefit of those controls were the two factors that had the most influence over our decision.

Comment: MDEQ stated that in the North Dakota Regional Haze SIP/FIP, coal-fired utilities with much greater estimated visibility impact were required to install controls similar to those required at Colstrip 1 and 2.

Response: We disagree that certain BART determinations from the North Dakota Regional Haze SIP/FIP are appropriate comparisons to our BART determinations in this FIP. Our determination on the NO$_X$ BART determinations at Milton R. Young Station Units 1 and 2 and Leland Olds Station Unit 2[10] is explained in our final

action for regional haze for North Dakota. 77 FR 20893. Our BART determinations were made on a source-specific basis in consideration of the five statutory factors.

Comment: MDEQ stated that we "accept, discard or include new cost information without reason or justification." MDEQ supported this claim by arguing that we used Integrated Planning Model (IPM) data in one instance, but used costs provided by sources and an outside consultant instead of IPM data for the North Dakota Regional Haze SIP/FIP.

Response: The BART Guidelines provide some flexibility in how to calculate and consider costs. 70 FR 39127. Generally, we followed a reasonable and supported approach. We have responded to specific comments regarding our cost analysis in other responses.

Comment: MDEQ stated that the averaging times and compliance demonstrations for Colstrip 1 & 2, Corette and Devon Energy are not practically enforceable, and therefore counter to the BART Guidelines. MDEQ stated that the 30-day rolling average particulate matter (PM) emission limits for Colstrip 1, Colstrip 2 and Corette, and the NO$_X$ limit for Devon are not enforceable with an annual stack test.

Response: We disagree with some aspects of this comment and have made changes in the final FIP to clarify requirements in response to other aspects of this comment. In the proposed FIP, we concluded that annual stack tests, along with emissions monitoring in accordance with the applicable Compliance Assurance Monitoring (CAM) plan are sufficient to determine compliance with BART PM limits. 77 FR 24099 (April 20, 2012). In its comments, MDEQ provides no evidence to the contrary aside from general statements about practical enforceability described in the comment above. With regard to the Devon Energy Reasonable Progress determination, we have revised the monitoring, recordkeeping and reporting requirements in the final FIP. We have also clarified in a correction notice that the PM limits listed at 40 CFR 52.1396 are not based on a 30-day average. 77 FR 29270.

Comment: MDEQ noted that Cross-State Air Pollution Regulation (CSAPR) trading programs were recently determined by EPA to be an alternative to source-by-source BART determinations. 77 FR 33642 (April 20, 2012). MDEQ argued that, because CSAPR is a health-based standard, "EPA in the East is advocating the position that Montana has taken for our own

state: Realize the benefits (including visibility) from health-based standards and make compliance with those standards the demonstration for BART."

Response: Emissions trading programs and other alternative programs can be used in place of source specific BART controls "as long as the alternative provides greater reasonable progress towards improving visibility than BART." 77 FR 33644. Because Montana is not within the geographic areas covered by CSAPR, and because the State did not submit an emissions trading program or alternative program that was subject to, let alone satisfied, the "greater reasonable progress" test, EPA does not agree that compliance with other standards may replace a BART demonstration for sources subject to BART in Montana.

Comment: A commenter claimed that our elimination of best emission controls based on incremental benefit is not legally supportable and that EPA's analyses do not satisfy the purpose or the regulatory requirements for BART determinations. The commenter stated that we applied additional filters with unstated thresholds or standards in our consideration of BART and that those filters eliminate or significantly diminish the weight and importance of the required five factors. The commenter stated that EPA used an incremental benefit test and reached a subjective conclusion.

Response: We disagree that our determinations are not legally supportable. Pursuant to 40 CFR 51.308(e)(1)(ii)(A) we considered the following five factors in our analysis: The cost of compliance; the energy and nonair quality environmental impacts; any pollution control equipment in use at the source; the remaining useful life of the source; and the degree of improvement which may be reasonably anticipated to result from the use of such technology. The Regional Haze Rule defines BART as the best system of continuous emission control technology available and associated emission reductions achievable, as determined through an evaluation of the five statutory factors. 70 FR 39126 to 70 FR 39127. While the Regional Haze Rule may allow us to establish a bright line for some of the factors such as cost-effectiveness and visibility, we are not required to do so, and have not done so for this action.

Comment: MDEQ commented that EPA makes a case for ordering the installation of control equipment for measurable emissions reductions absent a visibility improvement goal to achieve reasonable progress as measured in deciviews. MDEQ stated that one of the

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[10] We presume these units are the "coal-fired utilities" to which MDEQ is referring.

factors to consider when determining BART is any existing pollution control technology in use at the source and that EPA may be interpreting this provision to mean BART requires the installation of any new pollution control technology that is useful for reducing emissions generally. MDEQ stated that the statute and the Regional Haze Rule are both clear that a BART determination focuses on existing pollution controls and that the suitability of additional controls for co-beneficial purposes that may be tangentially related to the National Goal is not part of the analysis. MDEQ stated that overall purpose of any SIP, including Montana's, is the control of emissions to comply with the NAAQS as set forth in 42 U.S. Code (USC) Section7410 and that the purpose of the Regional Haze Rule is to control emissions that cause or contribute to visibility impairment in Class I Federal areas. MDEQ stated that, ''Montana is adamant on this point because it forms the basis for its reluctant renunciation of authority over Montana's BART program.'' MDEQ stated that, ''the consideration of a co-benefit strategy is not without merit, but the imposition of BART is set forth very clearly in statute and rule. MDEQ stated that the determination of BART has everything to do with visibility impairment and improvement, not the attainment or maintenance of the NAAQS.'' MDEQ suggested that, ''EPA limit the BART criteria to that set forth in the rule at 40 CFR 51.308(e) and refuse to propose new controls that are not calculated to fulfill BART criteria.''

Response: We disagree that we have misinterpreted the BART provision to consider any existing pollution control technology at the source. We point out that considering existing pollution control technology in use at the source does not preclude the consideration of new technology. As listed in the BART Guidelines, Step 1 of the ''Five Basic Steps of a Case-by-Case BART Analysis'' is ''Identify All Available Retrofit Technologies.'' 70 FR 39164. A footnote to the word ''All'' in this step of the BART Guidelines reads as follows; ''In identifying 'all' options, you must identify the most stringent option and a reasonable set of options for analysis that reflects a comprehensive list of available technologies. It is not necessary to list all permutations of available control levels that exist for a given technology—the list is complete if it includes the maximum level of control each technology is capable of achieving.'' 70 FR 39164. Our analysis for each Montana source subject to BART included each of the ''Five Basic

Steps of a Case-by-Case BART Analysis,'' as well as a complete five-factor analysis which included consideration of ''any existing pollution control technology in use at the source.'' Existing pollution control technology was considered when identifying available control options, when establishing a baseline for determining visibility impacts or for determining annual emission reductions for available control options. Existing pollution control technology also was considered in establishing emission limits. With regard to MDEQ's comment that we interpreted this provision to mean BART requires the installation of any new pollution control technology that is useful for reducing emissions generally, we point out that in many cases our BART determinations did not require additional pollution control technology to be installed for BART.

We also disagree that we have interpreted BART to require the installation of any new pollution control technology that is useful for reducing emissions generally, that we used criteria other that those listed at 40 CFR 51.308(e)(1)(ii)(A), or that we proposed new controls that are not calculated to fulfill BART criteria. As stated in other responses, pursuant to 40 CFR 51.308(e)(1)(ii)(A) we considered the five factors in our analysis.. The Regional Haze Rule defines BART as the best system of continuous emission control technology available and associated emission reductions achievable, as determined through an evaluation of the five statutory factors. 70 FR 39126 to 70 FR 39127. As stated in another response, at no point in the proposed FIP did we discuss public health impacts as a consideration in our analyses, as they were not. As stated elsewhere, we agree that the Regional Haze Rule is not a health-based standard, and that we are not authorized to consider public health impacts in promulgating our FIP for purposes of this action.

Comment: The NPS commented that EPA determined that the incremental visibility improvement from a control option must exceed 0.5 deciview at a given Class I area if costs exceed $5,000/ton in order to qualify as BART and stated that the NPS disagrees with this approach. The NPS stated that while the BART Guidelines do recommend estimation of incremental costs, it makes no mention of an incremental visibility improvement test. The NPS explained that if applied linearly, EPA's cost estimate of $3,235/ton for SCR would correspond to a visibility improvement of 0.32 deciview, not 0.5 deciview to justify SCR. The NPS stated

that EPA concluded the benefit of SCR at Theodore Roosevelt NP is 0.4 deciview and that therefore, by EPA criteria SCR is BART for each Units 1 and 2.

Response: We disagree. We have not determined that the incremental visibility improvement from a control option must exceed 0.5 deciview at a given Class I area if costs exceed $5,000/ton in order to qualify as BART. As stated in other responses, while the Regional Haze Rule may allow us to establish a bright line for some of the factors such as cost-effectiveness and visibility, we are not required to do so, and have not done so for this action.

C. Comments on Cement Kilns

Comment: A commenter stated that we must not not exempt cement kilns from BART for PM. The commenter described baseline visibility impacts from Ash Grove and Holcim and stated that the high degree of visibility impairment warrants analysis of whether PM emission limits should be lower to reflect BART.

Response: We disagree that we have exempted cement kilns from BART for PM. In our proposal, Table 35 shows that Ash Grove's greatest baseline visibility impact is 4.446 deciviews at Gates of the Mountains WA and Table 49 shows that Holcim's greatest baseline visibility impact is .980 deciview at Gates of the Mountains WA. 77 FR 24011 and 77 FR 24017. While we agree with the commenter that the baseline impacts are significant, the PM contribution to this overall baseline impact is small. In our proposal, Table 38 shows that for Ash Grove, coarse PM only contributes 0.84% and fine PM only contributes 4.77% to the overall baseline visibility impact of 4.446 deciviews. 77 FR 24013. Table 64 shows that for Holcim, coarse PM only contributes 5.79% and fine PM only contributes 12.61% to the overall baseline visibility impact of .980 deciview. 77 FR 24022. By contrast, our BART determination for Ash Grove for NO_X is anticipated to achieve a visibility improvement of 1.248 deciviews and our BART determination for Holcim is anticipated to achieve a visibility improvement of 0.424 deciview. Any visibility improvement that could be achieved with improvements to the existing PM controls would be negligible. BART for PM was based on using the existing control equipment and the emission limit established in each facility's Title V permit. The PM BART limits for Ash Grove and Holcim were listed in our proposal at 77 FR 24098 and are

codified by our final action at 40 CFR 52.1396.

D. Comments on Ash Grove

Comment: Ash Grove stated that they did not object to EPA's conclusion that BART should be based on the installation of low NO_X burner (LNB) and SNCR. However, the company stated that they objected to the assumptions made about what SNCR can achieve. Ash Grove stated that they explained in the prior correspondence that the company did not believe that it is appropriate to assume that the Montana City kiln can achieve 50% control effectiveness. Ash Grove stated that, as the data in Table 10 of the preamble clearly showed, only one of the three kilns at Ash Grove's Midlothian plant is able to achieve 50% control effectiveness while the other two kilns had an average control efficiency of 37.7% and 40.5%.

Ash Grove also believes that no other credible evidence is provided for our conclusion as to SNCR NO_X control efficiency. Ash Grove stated that we referenced studies from other industry sectors and a marketing brochure from Cadence stating that ''control efficiency of up to 50% can be achieved on long wet kilns'' and that this quote states the upper end of what might be achievable. Ash Grove indicated that the brochure does not state that 50% control efficiency can be achieved on all long wet kilns, that Cadence's experience with SNCR on long wet kilns is what is shown in Table 10, Ash Grove indicated that Cadence was Ash Grove's partner in developing the Midlothian SNCR, which, according to Ash Grove, are the only long wet kilns in the United States with any track record of SNCR use. Ash Grove indicated that even after years of optimization on the Midlothian kilns, the data show that it has not been possible to bring all three kilns up to a 50% control efficiency and that the Midlothian NO_X reduction data reflect not only the benefits of SNCR, but also the mid-kiln firing of tires, use of a mid-kiln fan and other technologies that are not available to the Montana City kiln, but that were implemented concurrent with the SNCR installation/optimization at Midlothian to reduce NO_X emissions. Ash Grove explained that in considering the Midlothian data, one needs to account for the direct control efficiency these technologies provide, in addition to the synergistic effects of using more than one control device/technique at a time at Midlothian and that these benefits would not be available at Montana City and should not be assumed.

Ash Grove summarized that they continued to believe that a SNCR system at Montana City cannot be assumed to reach greater than 35% control efficiency and that EPA has produced no credible evidence in the record for supporting a different conclusion. Ash Grove stated that they recognized that their initial BART submittal listed 50% control as achievable for the combination of a low NO_X burner and SNCR at the Montana City kiln but since then they have realized they cannot get to that level on all three kilns at Midlothian. Ash Grove stated that they are willing to not contest the 8.0 lb/ton clinker limit, and they anticipate that compliance could require additional control technologies/strategies; therefore, they need the maximum time allowable to find ways to consistently maintain NO_X at or below that level.

Response: We disagree that SNCR cannot achieve a 50% control effectiveness at Ash Grove. The data from Ash Grove's Midlothian, Texas kilns in Table 10 of the proposed FIP, 77 FR 24003, show the SNCR control effectiveness achieved. The data were not intended to imply that this is the upper bound of what might be achieved. Ash Grove did not submit any information demonstrating that this was the maximum reduction that could have been achieved. It was not necessary to achieve greater reductions from the Midlothian Texas kilns to comply with the required emission limit. In Texas, SNCR was used at Midlothian to comply with the emission limit established at Texas Administrative Code (TAC) 117.3110(a)(1)(B) of 4.0 lb/ton clinker. TAC 117.3110(b) allowed an owner or operator of a long wet kiln to comply with the 4.0 lbs/ton clinker emission limit on the basis of a weighted average for multiple cement kilns. Thus, it was not necessary for each individual kiln to achieve the maximum percentage reduction possible; one or more kilns could emit more than 4.0 lbs/ton clinker as long as the weighted average complied with the emission limit.

Ash Grove has not submitted any data to demonstrate that SNCR was optimized in an attempt to achieve the greatest control efficiency possible. For the Midlothian kilns, from June–August 2009, the emission rate from kiln 1 was 3.7 lbs/ton clinker and the emission rate from kiln 2 was 4.8 lbs/ton clinker and from June through August 2010, the emission rate from kiln 1 was 2.6 lbs./ton clinker, the emission rate from kiln 2 was 4.8 lbs/ton clinker, and the emission rate from kiln 3 was 4.4 lbs/ton clinker. These emission rates are significantly higher than the emission rates from June to August 2008 (an

average of 1.8 lbs/ton clinker for kiln 1, 2.7 lbs/ton clinker for kiln 2, and 2.7 lbs/ton clinker for kiln 3). An increase in NO_X emissions over time would not be expected if the SNCR were being optimized.

With regard to Ash Grove's claim that we need to account for the direct control efficiency of other technologies that are not available to the Montana City Kiln, the tire-derived fuel system was already being used at Midlothian in 2006 and is already accounted for in the 2006 baseline to which the 2008 post-SNCR emissions are compared.[11] Thus, no further adjustment is necessary. Ash Grove has not provided data to demonstrate that a synergistic effect has occurred between mid-kiln firing of tires and SNCR at Midlothian.

Ash Grove has not submitted data to support their claim that only 35% reduction can be achieved with SNCR at the Montana City kiln. All of the Midlothian kilns were able to achieve greater than 35% reduction with SNCR and there is no information to demonstrate that SNCR was optimized to its maximum potential. The BART Guidelines state, ''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.'' 70 FR 39166. Ash Grove has not demonstrated the differences between their Montana City kiln and the Midlothian kilns.

With regard to Ash Grove's statement that we have not produced credible evidence in the record for supporting a greater than 35% control effectiveness for SNCR, we provided a detailed explanation in our proposed FIP at 77 FR 24003. Ash Grove has used SNCR at its Midlothian kilns where it was shown to achieve the reductions ranging from 37.7% to 62.5% and these are within the range of control effectiveness demonstrated at other kilns. Considering that control effectiveness is greater when initial NO_X concentrations are greater, and that the baseline NO_X emissions of the Montana City kiln are

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[11] Letter from Molly Cagle to Chance Goodwin, Initial Control Strategy Development for DFW Ozone Nonattainment Area, July 30, 2010, p. 1.

significantly greater than the Midlothian kilns, the Montana City kiln would be expected to achieve even greater control effectiveness when compared to the Midlothian kilns. 77 FR 24003 and 77 FR 24004.

Ash Grove's comment that they are willing to not contest the 8.0 lb/ton clinker limit is noted. With regard to Ash Grove's comment that they anticipate that compliance could require additional control technologies/ strategies and that therefore they need the maximum time allowable to find ways to consistently maintain NO_X at or below that level, we disagree that additional control technologies/ strategies are necessary; however, the final FIP does not require specific control technologies/strategies to be used. The final FIP allows for the maximum time available to comply with the 8.0 lb/ton clinker limit.

Comment: Ash Grove stated that the company supported the conclusions as to what constitutes BART for SO_2. Ash Grove noted that in the preamble we stated that there is so little improvement in visibility associated with implementing add-on SO_2 controls that there is no basis for requiring such controls under BART. Ash Grove stated that Clean Air Act Section 169A(g)(2) clearly states that "the degree of improvement in visibility which may reasonably be anticipated to result" must be used in evaluating potential BART controls. Ash Grove concluded that given the nominal improvement in visibility predicted from add-on controls, there is no basis under BART for requiring the addition of such controls. Ash Grove stated that the BART program has a very narrow statutory focus in that it exclusively addresses visibility improvement and that absent a material increase in visibility, the company believes that we would have been arbitrary and capricious if we had required add-on controls for SO_2 utilizing our BART authority. Ash Grove stated that the company supported our ultimate conclusion.

Response: The comment is noted. The final FIP makes no changes to the conclusions regarding SO_2 controls for Ash Grove.

Comment: Ash Grove stated that the company supported our conclusion that existing PM controls (an electrostatic precipitator (ESP)) constitute BART and that ESPs are well-accepted controls for wet kilns. Ash Grove stated that their compliance with the filterable particulate standard applicable to the kiln is an appropriate limit for ensuring that the ESP is properly operating and that

annual compliance demonstrations will ensure ongoing compliance. Ash Grove stated that they believe that this approach is particularly appropriate where the contribution of PM emissions to visibility impairment is nominal.

Response: The comment is noted. The final FIP makes no changes to the conclusions regarding PM controls for Ash Grove.

Comment: Ash Grove requests clarification on whether they must comply with BART limits for SO_2 and PM within five years of the effective date of the rule, as specified in the proposed regulatory text at 40 CFR 52.1396(d), or within 180 days for SO_2 and 30 days for PM, as suggested by the preamble to the proposed rule. If the intent is to require compliance sooner than five years from the effective date, then Ash Grove requests that the rule be renoticed, and that if EPA will not allow five years from the effective date, then Ash Grove requests that the BART compliance date for these pollutants be 30/180 days after the effective date, or the Portland cement National Emission Standards for Hazardous Air Pollutants (NESHAP) compliance date, whichever is later, in order to coordinate with the implementation of EPA's Portland cement NESHAP and New Source Performance Standard (NSPS) requirements, including installation and certification of continuous emission monitoring systems (CEMS). Ash Grove stated that the monitoring that EPA is imposing as part of the concurrent Portland cement Maximum Achievable Control Technology (MACT) rulemaking is very complicated and must be able to work in concert with what EPA imposes under this BART rulemaking. Ash Grove also stated that critical components of Ash Grove's envisioned monitoring scheme, such as installation of clinker weigh belts or the development of slurry conversion mechanisms, cannot be implemented within the 180 day period after the effective date.

Response: We agree with aspects of this comment, but disagree with others. We agree that there is an omission in the proposed 40 CFR 52.1396(d). We failed to specify, in the rule language itself, the compliance deadline for SO_2 of 180 days after the effective date of the FIP, and the compliance deadline for PM of 30 days after the effective date of the FIP. These deadlines were mentioned in the rule preamble. We have corrected the rule language at 40 CFR 52.1396(d) to specify these deadlines. For both SO_2 and NO_X, we further clarify that the 180-day deadline is applicable only where installation of additional controls is not necessary to comply with the BART limit; otherwise the compliance

deadline is five years after the effective date of our rule.

We disagree that the compliance deadline should be 30/180 days after the FIP effective date, or the Portland cement NESHAP compliance date, whichever is later. With regard to "whichever is later," EPA does not have the option of specifying an open-ended compliance deadline for BART. In our FIP proposal at 77 FR 23993, we explained that "Once EPA has made its BART determination, the BART controls must be installed and in operation as expeditiously as practicable, but no later than five years after the date of the final FIP. CAA section 169(g)(4) and 40 CFR 51.308(e)(1)(iv)." Ash Grove's comment does not dispute this explanation.

Further, Ash Grove has not presented any specific reason for us to wait on the Portland cement MACT rulemaking before imposing PM and SO_2 monitoring requirements for purposes of BART. First in regard to SO_2 monitoring, the proposed amendments to the Portland cement MACT and NSPS rules do not include any changes to the SO_2 CEMS monitoring requirements. In the proposed amendments, EPA is proposing to correct the emission rate calculation formula for SO_2 in NSPS Subpart F, at 40 CFR 60.64(c), but since we are making the same correction in our final FIP rule (see our response below to the comment on NO_X and SO_2 emission rate calculation), this is not a valid reason to wait until the Portland cement MACT and NSPS amendments are finalized before imposing SO_2 monitoring in the FIP.

Further, the proposed amended Portland cement MACT and NSPS rules require a SO_2 CEMS only if the kiln is subject to an SO_2 limit under NSPS. Ash Grove has not indicated that their kiln in Montana is subject to an SO_2 limit under NSPS, and even if it is, the proposed amended Portland cement MACT and NSPS rules will not impose any different requirements for an SO_2 CEMS than those in existing NSPS rules at 40 CFR 60.63(f), which are cross-referenced by our proposed regulatory text at 40 CFR 52.1396(e)(3). Ash Grove has also not presented any specific reason, such as vendor unavailability or site-specific complications, why it should take more than 180 days to replace and certify their SO_2 CEMS. We have already stated in our FIP proposal that 180 days would allow time for monitoring systems to be certified if necessary. We are clarifying that CEMS will have to be certified for BART purposes independent of NSPS requirements.

Second, in regard to PM monitoring, the proposed amendments to the

Portland cement MACT and NSPS rules require a PM continuous parametric monitoring system (CPMS), whereas the existing Portland cement MACT and NSPS rules require a PM CEMS. Since our FIP proposal does not require PM CPMS nor PM CEMS, the proposed amendments to the Portland cement MACT and NSPS rules do not affect the FIP and are not a valid reason to extend the 30-day compliance deadline for PM in the FIP.

With regard to Ash Grove's statement that critical components of the monitoring scheme, such as installation of clinker weigh belts or the development of slurry conversion mechanisms, cannot be implemented within the 180 day period after the effective date of the FIP, Ash Grove has not presented any specific reason why it should take longer than 180 days. With regard to Ash Grove's statement that the clinker monitoring must work in concert with the MACT rulemaking, our proposed regulatory text at 40 CFR 52.1396(e)(4)(ii) cross-references 40 CFR 60.63(b) for clinker production monitoring requirements. The proposed amendments to the Portland cement MACT and NSPS rules do not change the requirements in the existing section 60.63(b) for determining the amount of clinker produced. Only minor language clarifications are proposed, and there is no change to actual requirements.

We note that Ash Grove has no issue with the proposed PM BART emission limit. However, in preparing responses to Ash Grove's comments on other aspects of our proposed FIP, we identified a typographical error in our emission limit table for cement kilns. We made a correction to the emission limit table for cement kilns at 52.1396(c)(2), to clarify that the PM emission limit for Ash Grove is in lb/hr, not lb/ton clinker. Only the PM emission limit for Holcim is in lb/ton clinker. Similarly, we have clarified 40 CFR 52.1396(f)(2) to indicate that the emission rate of particulate matter shall be reported in lb/hr for Ash Grove, and in lb/ton clinker for Holcim. Ash Grove is not required to monitor clinker production for purposes of demonstrating compliance with the PM BART limit. We have also included in 40 CFR 52.1396(f)(2) the equation for calculating lb/ton clinker for PM at Holcim, rather than cross-reference 40 CFR 52.1396(e)(4)(ii), which pertains to SO_2 and NO_X, not PM.

Comment: Ash Grove does not object to the requirement in our proposed regulatory text at 40 CFR 52.1396(e)(3) to maintain, calibrate and operate SO_2 and NO_X CEMS on the cement kiln stack. Ash Grove requests, to be

consistent with other requirements to which they are subject, that the language be revised and proposed creating an exception during CEMS breakdown, repairs, calibration checks, and zero and span adjustments.

Response: We agree it is appropriate to address the language for consistency purposes. Rather than use the language proposed by Ash Grove, we are incorporating language from 40 CFR 60.63(g), which says,

You must operate the monitoring system and collect data at all required intervals at all times the affected source is operating, except for periods of monitoring systems malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

We have revised the regulatory text at 40 CFR 52.1396(e)(3) accordingly. 40 CFR 60.63(g).

Comment: Ash Grove also believes it is critical that the facility have adequate time to install, shake down and calibrate the necessary CEMS equipment. The facility currently lacks a flow meter and does not have certified CEMS. As a result, Ash Grove anticipates that it must replace its CEMS system, including the data acquisition and handling system (DAHS) as part of Portland cement MACT implementation. Ash Grove stated that this effort cannot be completed until the Portland cement MACT requirements are finalized, as Ash Grove understands that the NESHAP monitoring provisions are in flux. Therefore, Ash Grove believes that the BART CEMS requirements must be implemented at the same time that the Portland cement MACT CEMS requirements are implemented and not before.

Response: We disagree. See our response on compliance deadlines above. EPA does not have the option of specifying an open-ended compliance deadline for BART. Further, Ash Grove has not presented any specific reason, such as vendor unavailability or site-specific complications, why it should take longer than 180 days to install a flow meter and replace the CEMS system with a certified system. This comment has not resulted in any change to our proposal.

Comment: Ash Grove supports the approach whereby the CEMS data are utilized to demonstrate compliance with the NO_X and SO_2 BART limits. However, Ash Grove believes there is a material error in the formula used in the proposed regulatory text at 40 CFR 52.1396(e)(4)(ii). The formula expresses the concentrations of SO_2 and NO_X in

grains per standard cubic foot (gr/scf). Ash Grove noted that a CEMS would not normally generate SO_2 or NO_X concentrations in gr/scf, but in parts per million (ppm), consistent with the requirements of 40 CFR 60, Appendix B, Performance Specification 2. Ash Grove recognizes that this formula was likely intended to match Equation 3 in the 2010 revised Subpart F NSPS. While Ash Grove appreciates the effort to maintain consistency between the requirements, Ash Grove believes that Equation 3 in the Subpart F NSPS is in error and will be corrected in the upcoming public notice addressing Subpart F. Ash Grove provided a suggested formula to replace the formula stated in the proposed regulatory text.

Response: We agree for the reasons stated by Ash Grove that the formula for calculating the emissions should express SO_2 and NO_X concentrations in ppm, not in gr/scf. We have corrected 40 CFR 52.1396(e)(4)(ii) accordingly; however, rather than use the language proposed by Ash Grove, we have used the formula and associated language found in the proposed amendments to the Portland cement NSPS. 77 FR 42397.

Comment: Ash Grove noted that the proposed regulatory text at 40 CFR 52.1396(f) would require that Ash Grove perform EPA Method 5, 5B, 5D or 17, 40 CFR Part 60, Appendix A, to demonstrate compliance with the PM limit and that the test consist of three runs with each run at least 120 minutes long and each run collecting a minimum sample of 60 dry standard cubic feet. Ash Grove supports the approach of identifying the specific source test methods in the rule. However, Ash Grove does not support specifying the duration of each test run and the minimum sample size. Ash grove stated that this BART FIP is being implemented with the intent that it will control emissions for many years to come. Ash Grove stated that placing this type of detailed data into the rule, rather than letting the test duration and sample size be determined based on the test method as it exists at the time of the test, invites future confusion and trouble. Therefore, Ash Grove suggested that EPA specify the test methods but delete the other language relating to the test duration and sample size.

Response: We disagree. The test method does *not* determine the test duration and sample size, but cross-references other rules in this regard. EPA Method 5 states in subsection 8.2.4, ''Select a total sampling time greater than or equal to the minimum total sampling time specified in the test

procedures for the specific industry, such that (1) the sampling time per point is not less than 2 minutes (or some greater time interval as specified by the Administrator), and (2) the sample volume taken (corrected to standard conditions) will exceed the required minimum total gas sample volume.'' Methods 5B and 5D cross-reference Method 5 for sampling time and sampling volume. Method 17 does not cross-reference Method 5 for sampling time and sampling volume, but does not specify anything different. We consider three test runs, with each run at least 120 minutes long, and each run collecting a minimum sample of 60 dry standard cubic feet, to be appropriate and necessary for purposes of the Montana Regional Haze FIP. We note that this has been specified in PM stack testing requirements in other regional haze FIPs. (See, for example, Proposed Final FIP by EPA Region 9 for the Four Corners Power Plant, 76 FR 52387, August 22, 2011.) This comment has not resulted in any change to our proposal.

Comment: Ash Grove stated that the proposed regulatory text at 40 CFR 52.1396(h)(6) would require that they maintain, among other things, records required by Part 75. Ash Grove is not subject to part 75 as that applies only to electrical generating units. Ash Grove believes that this reference to Part 75 was just a ''catch-all'' and not intended to impose any obligations under Part 75 upon cement kilns otherwise not subject to Part 75. However, due to the potential for misunderstanding and the lack of relevance of the Acid Rain provisions to cement kilns, Ash Grove requested that the reference to Part 75 be deleted.

Response: We agree. Since the proposed monitoring requirements for cement kilns, at sections 52.1396(e)(3) and (4), and at section 52.1396(f)(2), do not cross-reference Part 75, there are no applicable Part 75 recordkeeping requirements under our FIP proposal. Therefore, the reference to Part 75 on recordkeeping, at 40 CFR 52.1396(h)(6), is not necessary and has been removed.

Comment: Ash Grove stated that the proposed regulatory text at 40 CFR 52.1396(i) would require that Ash Grove submit quarterly excess emission reports and CEMS performance reports. Ash Grove currently is subject to similar reporting requirements under the Title V and NESHAP programs. However, in both of those programs the reports are submitted semi-annually, not quarterly. Ash Grove sees no purpose gained by submitting the reports quarterly and the additional administrative burden is significant. Therefore, Ash Grove requested that EPA revise this reporting requirement to make it consistent with

the similar reports submitted under Title V and NESHAP programs, i.e., semiannual reports.

Response: We agree. We used provisions in NSPS Subparts A and F applicable to cement kilns as a model for the CEMS-related reporting requirements for cement kilns in our FIP proposal. The general provisions of NSPS Subpart A, at 40 CFR 60.7(c), require semiannual excess emission reports and monitoring systems performance reports, except when more frequent reporting is specifically required by an applicable subpart, or if the Administrator, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. NSPS Subpart F for cement kilns does not specify more frequent reporting. Therefore, we have revised the required reporting frequency to semiannual in 40 CFR 52.1396(i)(1) and (i)(2) for cement kilns. The required reporting frequency for EGUs remains quarterly.

Comment: Ash Grove requested that EPA revise its proposed regulatory text at 40 CFR 52.1396(i)(2)(ii) requiring the company to submit Relative Accuracy Audits (RAAs) and Cylinder Gas Audits (CGAs). Ash Grove does not object to the idea of submitting Relative Accuracy Test Audits (RATAs) as those are documented in a highly formalized test report prepared by a third party testing contractor. However, the RAAs and CGAs are not documented in the same type of formal third party report. Ash Grove believes that it is adequate to certify that the audits have been performed as part of the semiannual reports.

Response: We disagree. Our proposed regulatory text at 40 CFR 52.1396(e)(3) states that the CEMS shall be used to determine compliance with the emission limitations in section 52.1396(c), for each unit, in combination with data on actual clinker production. For cement kilns, 40 CFR section 52.1396(i)(2)(ii) requires submittal of results of any CEMS performance tests required by 40 CFR part 60, appendix F, Procedure 1, which is titled ''Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination.'' Under Section 7 of Procedure 1 (Reporting Requirements), it is not adequate to merely certify that the RAAs and CGAs have been performed. Section 7 requires submittal of a Data Assessment Report for each quarterly audit, which must include ''Assessment of CEMS data accuracy and date of assessment, as determined by a RATA, RAA or CGA

described in Section 5, including * * *, the A [accuracy] for the RAA or CGA, the RM [reference method] results, the cylinder gases certified values, the CEMS responses, and the calculations results as defined in Section 6.'' This information must be included in the semiannual reports referenced in our response to the previous comment above. We consider this information appropriate and necessary. This comment has not resulted in any change to our FIP proposal.

Comment: Ash Grove requested that EPA drop the requirement proposed in 40 CFR 52.1396(k)(2) to provide semiannual progress reports on construction of SO_2 and NO_X control equipment. Ash Grove does not object to filing notification of commencement of construction as this obligation is consistent with what Ash Grove is used to under the NSPS and state new source review program. However, semiannual construction progress reports are not something that Ash Grove is typically set up to generate and there seems to be little gained from such reports. Therefore, Ash Grove requested that this requirement be dropped from the rule.

Response: We disagree. We consider construction progress reports necessary as part of ensuring that BART sources meet their five-year compliance deadlines. Since installation of substantial equipment may be involved, there could be unforeseen construction delays that we would want to be aware of well before the five-year deadline. We do not consider this reporting a burdensome requirement, as our FIP proposal does not specify any particular level of detail for these progress reports. This comment has not resulted in any change to our FIP proposal.

Comment: Ash Grove noted that the BART limits are identified as applying at all times, including startup, shutdown and malfunction. Although the preamble states that the proposed limits allow ''for a sufficient margin of compliance,'' Ash Grove argued that these limits do not take into account the impact of sudden and unforeseen effects attributable to malfunctions. As compliance with all three limits (i.e., SO_2, PM and NO_X) could be affected by a malfunction, Ash Grove believes that it is appropriate for EPA to provide the same affirmative defense in the event of a malfunction as is provided in the Portland cement MACT rules. Specifically, Ash Grove requested that EPA incorporate the same affirmative defense provided in 40 C.F.R. 63.1344 to address malfunctions.

Response: EPA disagrees with this comment. As stated in our proposal, to determine the BART NO_X limit for Ash

Grove, we first applied the efficiency of the selected controls, LNB + SNCR at 58%, to the 99th percentile 30-day rolling average NO_X emission rate at this facility for May 26, 2006 through September 8, 2008, resulting in a figure of 7.82 lb/ton clinker. 77 FR at 24007 n.45. We then set the BART limit above this, at 8.0 lb/ton clinker. Ash Grove provides no data to show that, at this facility, this limit cannot be achieved due to malfunctions, or that our use of the 99th percentile 30-day rolling-average NO_X emission rate in combination with the additional margin (from 7.82 to 8.0 lb/ton clinker) provides an insufficient margin of compliance.

For SO_2, we did not select any additional controls for BART. We based the BART SO_2 limit on the 99th percentile 30-day rolling average SO_2 emission rate at this facility for May 26, 2006 through September 8, 2008, 11.02 lb/ton clinker, and set the BART limit at 11.5 lb/ton clinker. 77 FR at 24013 n.73. Ash Grove provides no data to show that, at this facility, this limit cannot be achieved due to malfunctions, or that our use of the 99th percentile 30-day rolling average SO_2 emission rate at this facility in combination with the additional margin (from 11.02 to 11.5 lb/ton clinker) provides an insufficient margin of compliance.

We also did not select any additional controls for PM. Ash Grove currently has an electrostatic precipitator for PM control and is subject to a process weight-based PM_{10} emission rate set out in Montana's approved SIP and Ash Grove's title V operation permit. We set the BART limit, based on use of the current control technology, at the existing emission rate. Ash Grove has not provided any data to show that it is not able to meet the existing limit due to malfunctions. As a result, we continue to maintain that the NO_X, SO_2, and PM BART limits for Ash Grove provide for a sufficient margin of compliance, including taking into account malfunctions.

With respect to the Portland cement MACT standard, we note that the MACT standard applies across the entire source category, while the BART limits imposed in this FIP reflect application of the five statutory BART factors to a particular facility, Ash Grove. Ash Grove does not explain why, in this circumstance, the existence of the affirmative defense in the MACT standard necessarily implies an affirmative defense is required for the BART limits, which as discussed above, for NO_X and SO_2 are based in part on actual emissions from Ash Grove, and for PM are based on an existing limit for

Ash Grove. We therefore disagree that the affirmative defense provided for in 40 CFR section 63.1344 should be also provided for in this FIP.

Comment: The opening sentence of the proposed regulatory text at 40 CFR 52.1396(i) states ''All reports under this section, with the exception of 40 CFR 53.1395(n) and (o) shall be submitted * * *'' Ash Grove believes that this cross-reference is in error, as Ash Grove is not aware of there being a 40 CFR 53.1395(n) or (o). Ash Grove believes this was intended to cite to 40 CFR 52.1396(n) and (o).

Response: We agree this was an error. We have corrected the language to cite to section 52.1396(n) and (o), instead of section 53.1395(n) and (o).

E. Comments on Holcim

Comment: Montanans Against Toxic Burning (MATB) applauded our proposed retrofit of the Holcim kiln to include LNB and SNCR.

Response: We acknowledge MATB's support.

Comment: MATB believes that we should reanalyze the fuel-switching option for the Holcim cement kiln. Specifically, they stated that petroleum coke inputs should be reduced, which they believe would lead to significant reductions in SO_2 emissions. They also stated that our analysis may be skewed by what MATB describes as Holcim's ''low-ball'' estimates of its sulfur emissions. MATB believes that a review of Holcim's past monitoring data could lead to a different conclusion.

Response: We disagree that it is necessary to reanalyze fuel switching options for Holcim. In our analysis, we used annual SO_2 emissions as reported to the National Emissions Inventory and we have no reason to believe that these were underestimated. The annual emissions (50.2 tpy) are so minimal that fuel switching options resulting in increased annual cost would not be considered cost-effective on a dollar per ton basis. In addition, the visibility improvement from fuel switching is very low at 0.015 deciview for fuel switching option 1 and 0.024 deciview for fuel switching option 2.

Comment: MATB commented that a ''real-time hourly'' standard for NO_X and SO_2, rather than the 30-day rolling averages based on clinker production proposed, is needed to assure compliance with protective limits. MATB explained that with the 30-day rolling averages, spikes due to malfunction or improper operation will ''disappear'' in the averaging process.

Response: We assume that by ''real-time hourly'' standard, the commenter means an emission limit in pounds per

hour. We disagree that we should establish an hourly standard rather than a 30-day rolling average limit based on clinker production. As we explained in our proposal (77 FR 24007), we chose an output-based standard because it avoids rewarding a source for becoming less efficient, i.e., requiring more feed to produce a unit of product. An output-based standard promotes the most efficient production process. With regard to 30-day versus hourly averaging time, EPA's BART guideline calls for BART emission limits to be expressed as 30-day rolling averages for electrical generating units. 70 FR 39172. We believe this is appropriate for other BART units as well. The proposed limit allows for a sufficient margin of compliance for a 30-day rolling average limit that would apply at all times, including startup, shutdown, and malfunction. 77 FR 24018.

Comment: MATB believes that more oversight, transparency, and accountability are needed when it comes to reporting and record keeping.

Response: We are confident that the information used to make our decision is accurate. With regard to reporting and recordkeeping requirements under the FIP, the commenter has not explained what oversight, transparency and accountability is lacking and what more is needed in this regard. That said, section 114 of the CAA allows EPA and the State to ask for monitoring data and reports as necessary. These documents are available to the public unless the information is claimed to be confidential business information.

Comment: MATB commented that the efficiency of Holcim's ESP is incorrect as stated in EPA's analysis, and does not operate during most malfunctions. These malfunctions can last 24 hours or more. Additionally, MATB stated that EPA's analysis fails to consider PM during periods of startup, shutdown and malfunction and considering the frequent upsets with the Trident kiln, that cause its ESP to be turned off, an additional control measure at Holcim is essential. MATB encouraged us to analyze the addition of a fabric filter.

Response: We disagree that it is necessary to evaluate the installation of a fabric filter at Holcim. In our proposal, we explained that PM emissions from Holcim did not significantly contribute to visibility impairment. We used actual emission rates to model the visibility impact from Holcim. Because the baseline visibility impact from PM was low, improvements to the existing PM control device would not be significant.

Comment: The commenter stated that an annual three-hour stack test is

inadequate to monitor PM emission limit compliance.

Response: We disagree. The proposed requirements for demonstrating compliance with PM emission limits include more than just an annual three-hour stack test. ''In addition to annual stack tests, owner/operator shall monitor particulate emissions for compliance with the BART emission limits in accordance with the applicable Compliance Assurance Monitoring (CAM) plan developed and approved in accordance with 40 CFR part 64.'' 77 FR 24099. The requirements include the following:

• 40 CFR 64.3(a) requires that a monitoring parameter be selected by the owner/operator as an indicator of emission control performance for the control device.

• 40 CFR 64.3(b) requires that an indicator range for that parameter be selected ''such that operation within the range provides a reasonable assurance of ongoing compliance with emission limitations or standards for the anticipated range of operating conditions.''

• 40 CFR 64.7(d) requires the owner/operator, upon detecting an excursion or exceedance of the CAM indicator range, to restore operation of the emitting unit and emission control device to its normal or usual manner of operation as expeditiously as practicable, in accordance with good air pollution control practices for minimizing emissions.

• 40 CFR 64.8 says the Administrator or permitting authority may require the owner/operator, in the event of repeated excursions or exceedances of the CAM indicator range, to develop and implement a Quality Improvement Plan, to correct any control device performance problems.

Further, 40 CFR 52.11396(l) states, ''At all times, owner/operator shall maintain each unit, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions'' This applies to all sources in the FIP.

Comment: MATB explained that there are inconsistencies in EPA's proposed NO_X and SO_2 emissions limits, and there appears to be a mistake on Table 53 dealing with fuel-switching options.

Response: These inconsistencies were corrected in the FR notice dated May 17, 2012. 77 FR 29270.

Comment: Holcim commented that that the output-based standards we proposed reward a source for operating inefficiently. Holcim indicated that our proposed FIP is unfairly stringent with respect to Holcim as compared to Ash

Grove. They stated that the kiln types and capacities of the two plants are substantially equal, but that Holcim's emissions profiles are notably different. Holcim stated that they use proper kiln design and best combustion practices to control NO_X emissions at their plant, and that Ash Grove has NO_X emissions that are 42% higher than NO_X emissions from the Holcim plant. Holcim further stated that our proposed FIP rewards Ash Grove with a NO_X BART emission limit that is 60% higher than Holcim's proposed NO_X BART emission limit. Holcim pointed out that their kiln has substantially lower current NO_X emission rates, lower current visibility impacts, and a lower subsequent visibility improvement, yet our FIP requires substantially tighter emission limits for NO_X and SO_2.

Holcim commented that, based on EPA's analysis, the proposed NO_X limit would require Holcim to invest a total of $5.6 million in SNCR and indirect firing, which would result in an improvement in visibility at Gates of the Mountains WA that is significantly less than the 1.0 deciview perceptibility threshold and that our proposed FIP would require only a $1.19 million capital investment from Ash Grove, even though Ash Grove's impact on Gates of the Mountains WA is more than double the impact from Holcim. Holcim also stated that we estimated that Ash Grove's NO_X emissions caused degradation in visibility of greater than 0.5 deciview at Gates of the Mountains WA on approximately 33% of the days in the baseline period while Holcim impacted Gates of the Mountains WA at greater than 0.5 deciview only on approximately 4% of the days during the baseline period. Holcim stated that EPA's approach would reward Ash Grove's higher emissions and inefficient operation by creating an economic disadvantage for Holcim in a highly competitive market.

Response: We disagree. Our explanation in the proposed FIP regarding the output-based standard was provided to explain the difference between a standard expressed in quantity of pollutant per amount of feed and quantity of pollutant per amount of product produced. As explained in our proposal, an output-based standard avoids rewarding a source for becoming less efficient, i.e., requiring more feed to produce a unit of product. 77 FR 24007. Our explanation did not imply that both sources should have exactly the same emission rate. The NO_X standards for both Holcim and Ash Grove were determined by applying the control efficiency of the selected technologies to the current emission rates at each

facility. This is the most appropriate method to determine emission limits for these two sources. As explained in other responses, we are not requiring Holcim to convert to indirect firing in the final FIP, so the information comparing capital investment is no longer relevant. In the final FIP, we have determined the emission rate for Ash Grove by applying the control effectiveness of LNB + SNCR (58%) to the current emission rate and as explained in other responses we have revised the emission rate for Holcim by applying the control effectiveness of SNCR (50%) to the current emission rate. In both cases, we have determined the emission rate based on the control effectiveness of the control technology that was chosen based on the five statutory BART factors listed at CAA section 169A(g)(2) and 40 CFR 51.308(e)(1)(ii)(A). The five statutory factors include the costs of compliance and visibility improvement; therefore, these factors were evaluated and considered in the selection of controls. Applying the control effectiveness of the technology that was identified based on the five statutory factors to the current emission rates for each source is a logical method for determining emission rates. This same methodology was used for determining the emission rates for both sources.

We note that in the final FIP, Ash Grove will reduce an estimated 1,088 tons per year of NO_X using LNB+SNCR at a total annual cost of $2,238,893, but Holcim will only reduce an estimated 556 tons per year of NO_X at a total annual cost of $650,399. Ash Grove will be reducing 946 tons per year of NO_X through the operation of SNCR, but Holcim will only be reducing 556 tons per year through the operation of SNCR.[12] We provide this information to demonstrate that overall, more emissions will be reduced by Ash Grove and to also illuminate the fact that annual cost will be greater for Ash Grove. The cost of reagent is proportional to the amount of pollutant removed; therefore, annual reagent cost will be significantly greater for Ash Grove.

We are not requiring additional controls for SO_2 for either Holcim or Ash Grove and the SO_2 limits for each facility were determined based on current emission rates. This determination was based on an evaluation of the five statutory factors and the SO_2 emission rates were determined in the same manner for both

[12] See Table 11, FR 77 24004, and Table 22, 77 FR 24007 for Ash Grove. Holcim's baseline NO_X emissions are 1,112 tpy. Revised emissions reduction for SNCR only for Holcim is 556 tpy and cost is $1,170/ton.

facilities. There is no necessity for additional SO_2 control at either facility; the current controls were considered to be BART.

As for Holcim's comment that the proposed FIP rewards Ash Grove's higher emissions and inefficient operation by creating an economic disadvantage for Holcim in a highly competitive market, the BART Guidelines do allow for the consideration of unusual circumstances that justify taking into consideration the conditions of the plant and the economic effects of requiring the use of a given control technology. The BART Guidelines state:

[t]hese effects would include effects on product prices, the market share, and profitability of the source. Where there are such unusual circumstances that are judged to affect plant operations, you may take into consideration the conditions of the plant and the economic effects of requiring the use of a control technology. Where these effects are judged to have a severe impact on plant operations you may consider them in the selection process, but you may wish to provide an economic analysis that demonstrates, in sufficient detail for public review, the specific economic effects, parameters, and reasoning.

70 FR 39171. Holcim did not provide information for us to consider in such an analysis.

The BART Guidelines also state, "[a]ny analysis may also consider whether other competing plants in the same industry have been required to install BART controls if this information is available." 70 FR 39171. In this case, Ash Grove is required to install BART controls. We have considered each plant individually, and based on the BART analyses both Holcim and Ash Grove plants are required to install BART controls.

Comment: Holcim argued that the Texas kilns cited by EPA in the FIP are not representative and two of the three kilns did not achieve 50% NO_X reduction. Holcim cited several site-specific factors that impact SNCR performance that they state EPA did not adequately consider, including turbulent mixing, heat transfer, spray droplet size, spray drop evaporation, devolatilization and others. Holcim also argued that the carbon monoxide (CO) levels at the Trident kiln are much lower than the CO levels at the Texas kilns, which will adversely impact NO_X reductions and ammonia slip at the Trident kiln relative to the Texas kilns. Holcim additionally argued that EPA did not adequately consider NO_X emissions variability in setting the limit because of the limited time frame considered for the data from the Texas kilns.

Response: We disagree. EPA has assumed that 50% reduction is possible with SNCR; however, this does not rule out the possibility that Holcim may determine that other means, such as mid-kiln firing, may be better than SNCR alone in terms of cost or other factors for achieving 50% NO_X reduction. In any event, 50% NO_X reduction is achievable with SNCR and this is supported by the data cited in the proposed FIP. We address this in more detail in a response to Ash Grove.

Holcim also noted that SNCR performance depends upon a wide range of site-specific factors. They list rate-limiting processes, including turbulent mixing, heat transfer, spray droplet size, spray drop evaporation, devolatilization and others. As detailed in a contractor's report in the docket, we have considered these factors and none of them causes us to change our decision. In brief, spray droplet size is a factor the SNCR system designer can control and tailor to the needs of the system. Turbulent mixing may or may not be within the SNCR system designer's ability to control, but in any case our selection of SNCR does not depend on optimal turbulent mixing.

With respect to CO concentration, if the CO at the Trident kiln is much lower than at the Texas kilns referred to in the comments, as Holcim describes, this simply means that the SNCR reagent should be introduced at a point in the process where the gas temperature is higher than the injection point used at the Texas kilns where the CO levels are higher. This may in fact improve SNCR performance.

With regard to NO_X emission variability raised by Holcim, first, the data used by EPA in Table 10 of the proposed FIP cover a three month period which should be adequate time to address normal operating changes that would impact NO_X. Second, SNCR can be used to mitigate variability in NO_X emissions. This is confirmed by the data on the Midlothian kilns that is in the proposed FIP and as described in response to comments from Ash Grove. For every kiln, the standard deviation in the monthly NO_X emission rate was lower after the application of SNCR than before, indicating a lower variation in NO_X emissions.

Comment: Holcim argued that a detached plume may result from operation of the SNCR in the winter months, which will make it necessary to not operate the SNCR system or to allow a condition where visibility is adversely impacted to continue. The detached plume could be the result of the formation of ammonium salt reactions with sulfate or chlorides.

Response: We disagree. As discussed by Miller,[13] there are several factors that could contribute to a visible detached plume, and these include moisture, temperature, and availability of the constituents that contribute to the plume—ammonia, sulfates and chlorides. Ammonia slip from the SNCR process can be well controlled in a cement kiln, and the SNCR system would not affect the amount of ammonia contributed by raw materials.

Sulfates and chlorides are largely the result of impurities in the raw materials, and ammonia can be contributed by raw materials. Holcim's SO_2 emissions are low indicating low levels of sulfates in the exhaust. Therefore, the risk of an ammonium sulfate plume, even with ammonia present, is small. The presence of chlorides will depend upon the raw materials and whether the chlorides become bound to alkaline material before being emitted up the stack.

Chlorides, if present, will typically preferentially be bound to alkaline material that is present rather than be emitted. Holcim did not provide any information on stack chloride emission levels at this site to support their concerns about detached plume from ammonium chloride.

Because of the importance of impurities in the raw materials in contributing to the chemical constituents that form a plume, the experience at one kiln cannot be directly applied to another without more information. Therefore, while there may be a risk of a visible plume at the Trident kiln, Holcim has not provided enough data to indicate that addition of an SNCR system would increase this risk significantly. Furthermore, a localized plume would not necessarily impact a Class I area and Holcim has not provided any information indicating such an impact.

Comment: Holcim indicated that EPA failed to consider the NO_X control technology already installed at the Trident plant. Holcim explains that they changed the burner at Trident in May 2009 to a multichannel LNB design as part of the company's burner system modification for NO_X control, as detailed in Holcim's 2007 BART analysis.

Holcim stated that EPA's BART analysis ignored the installation of the multichannel LNB at the Trident plant, in contravention of EPA's obligation to consider "any existing pollution control

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[13] Miller, F. M., "Management of Detached Plumes in Cement Plants" 2001 IEEE–IAWPCA Cement Industry Technical Conference Vancouver, British Colombia, Canada April 2001.

technology in use at the source'' as part of the five-factor BART analysis. 42 U.S.C. 7491(g)(2). Holcim's BART analysis was prepared and submitted in 2007, before the multichannel LNB technology was installed.

Holcim explains that they originally installed a multichannel burner in April 2008 but it caused operational issues and was removed in July 2008. The multichannel burner was redesigned, installed in May 2009, and has operated continuously since that time. According to Holcim, the multichannel design allows the fuels to be separated into different channels and enables Holcim to more precisely control the amount of air passing through each of the channels. Consequently, Holcim says, they can better control the flame characteristics in the kiln, which results in higher thermal efficiency of the kiln and improved product quality.

Holcim stated that they also anticipated that the multichannel design would reduce NO_X and SO_2 emissions. Holcim acknowledges that the effects of the technology are difficult to quantify. Based on a comparison of NO_X emissions pre- and post-installation of the LNB technology where the fuel mix was generally the same, Holcim says the plant's NO_X emissions decreased by approximately 13% with the installation of the multichannel LNB. In addition to the multichannel LNB, Holcim stated that they installed an indirect firing system for the petroleum coke system.

Holcim notes that EPA used a baseline for the Trident plant of years 2008 through 2011, a period of time that already includes the effects of the LNB technology at the plant. Holcim stated that EPA assumed in its BART proposal for the Trident plant that the combination of LNB and indirect firing would achieve a NO_X reduction of 15%. However, Holcim stated that a 13% reduction in NO_X emissions has already been achieved through prior installation of the multichannel LNB. Holcim states there is no basis to assume that indirect firing would improve NO_X emissions reductions at Trident and that additional NO_X reductions can only be obtained through installation of SNCR. As a result, Holcim concludes that EPA's analysis of the cost-effectiveness and visibility impact for the installation of indirect firing is, ''clearly erroneous and should be disregarded''.

Response: We agree with aspects of this comment, but disagree with others. As described in more detail below, Holcim has not provided enough information to demonstrate that the installed multi-channel burner that Holcim installed is in fact a low NO_X burner. In any case, the baseline used

for the BART analysis included emissions averaged over a four year period (2008–2011), which would have included the time that the multi-channel burner was installed. We have decided that the incremental cost of indirect firing and a low NO_X burner is not justified and have revised the BART emission limit accordingly.

We agree that our BART proposal, did not consider installation of the new burners that Holcim describes as ''multichannel LNB'' in its March 20, 2008 letter to Vickie Walsh of the MDEQ. As the June 9, 2009 letter from Holcim to EPA notes, ''a low NO_X burner modification would require low primary air and, thus, a conversion of Trident's firing system from a direct to an indirect system.'' Based on the information we have, it appears that the Trident kiln has not installed an indirect firing system for coal and therefore the multichannel burner does not meet the definition of LNB in Holcim's letter. The burner is not capable of operating at low primary air levels on pulverized coal and cannot achieve the NO_X reductions that an indirect firing system would achieve.

However, we disagree that we must credit the newly installed burner with a 13% reduction in NO_X emissions, because we are lacking validation data that such a reduction has been achieved. Holcim has only presented summary information to support the claim of 13% reduction and has not provided the underlying data to validate its claim. Our examination of NO_X emissions data provided by Holcim on March 2, 2012, covering the period from 2008 through 2011 (referenced in our proposal at 77 FR 24018, footnote 93), does not reveal any evidence of sustained NO_X emission reduction after May of 2009. We have used data from the time period 2009–2011, after the new burner was installed, in calculating baseline emissions. 77 FR 24014, Table 39, footnote 1. This baseline accurately reflects current conditions and is appropriate for comparison to available control scenarios.

Nevertheless, since a switch to indirect firing to accommodate installation of LNB, as described in our FIP proposal, would have an unreasonably high incremental cost-effectiveness of $8,029/ton, with minimal visibility benefits (see our response below), we are not requiring a switch to indirect firing and LNB as BART in the final FIP. We also are clarifying that we intended this option to include switching to indirect firing and a LNB. We have recalculated the proposed BART limit for NO_X to reflect a 50% reduction in NO_X emissions from

that baseline by addition of SNCR alone, rather than the 58% reduction we previously used, which reflected switching to indirect firing and adding a LNB plus SNCR.

In recalculating our proposed BART emission limit for NO_X, we continue to rely on the estimate of baseline NO_X emissions in lb/ton clinker provided in Holcim's 2012 submittal, cited in our proposal at 77 FR 24018, footnote 93. That submittal listed a 99th percentile 30-day rolling average NO_X emission rate of 12.6 lb/ton clinker, for the period 2008–2011. Applying a 50% reduction to the 99th percentile figure yields 6.3 lb/ton clinker. To allow for a sufficient margin of compliance for a 30-day rolling average limit that would apply at all times, including startup, shutdown and malfunction (as explained in our proposal at 77 FR 24018), we are setting the BART limit at 6.5 lb/ton clinker in our final rule.

Since the estimated baseline NO_X emissions have not changed from our proposal, and since our estimate of 50% NO_X reduction for SNCR alone has not changed from our proposal, our estimate of 556 tons per year of expected NO_X reduction for SNCR alone has also not changed from our proposal.

Comment: Holcim stated that EPA underestimated the costs of installing and maintaining a SNCR system. Holcim stated that the company calculated the direct annual costs of SNCR to be $443,341 and the indirect annual costs for SNCR to be $227,538, and that these calculations employed a 15-year amortization schedule, as requested by EPA in 2007.[14] Holcim noted that EPA's estimated direct annual costs and indirect annual costs for SNCR are lower than Holcim's estimates by approximately 67% and 46%, respectively and suggested that the difference may be at least in part due to EPA's use of a 20-year period in the proposal.

Holcim stated that it is unclear how EPA derived its numbers and that EPA provided no explanation in the FIP proposal. Holcim requested clarification of EPA's method for calculating these costs and urged EPA to instead use the cost calculation numbers provided by Holcim.

Also, Holcim stated that if EPA reviews selective catalytic reduction (SCR) for cement kilns in subsequent reasonable progress planning periods, and determines that Holcim must install SCR instead of SNCR at that time then

[14] August 2009 Submittal (EPA–R08–OAR–2011–0851–0038); Letter from Callie A. Videtich to Ned Pettit (Nov. 26, 2007) (EPA–R08–OAR–2011–0851–0038).

the 20-year amortization for SNCR costs would not accurately reflect the annual costs of installing SNCR. Holcim also stated that since the company conducted its original analysis, Holcim has installed SNCR at its plant in Hagerstown, Maryland in 2011, which also has a long kiln. Holcim stated that the total capital costs for the SNCR installation at Hagerstown were approximately $1,920,000, including the cost of commissioning and spare parts and that, in addition, Hagerstown budgeted $591,000 for 2012 operating costs ($1.35 per metric ton of clinker or $1.23 per metric ton of cement). Holcim stated that actual operating costs for 2012 through the end of April have been $179,000 ($1.40 per metric ton of clinker or $1.28 per metric ton of cement). Holcim anticipates that similar capital and operating costs would apply to the installation of SNCR at Trident. Holcim requested that EPA use these updated figures in its analysis of the costs of SNCR at Trident.

Response: We agree with aspects of this comment, but disagree with others. We note that the letter to which Holcim refers requested that Holcim reanalyze annualized costs using a 15-year amortization period for a scrubber, not SNCR. We agree that EPA underestimated the cost of SNCR and that clarification on cost is needed, but we disagree with the statement that EPA provided no explanation in its proposal on how EPA derived its cost numbers. We also disagree with the statement that EPA provided no explanation for use of a 20-year amortization period. We also disagree with the statement that SNCR costs at the Trident kiln should be similar to Holcim's Hagerstown kiln.

We agree that we underestimated the cost of SNCR and that clarification is needed. The underestimate arose from our omission of cost of reagent. In Holcim's August 12, 2009 submittal, two versions of a SNCR cost spreadsheet were included. In one version, Holcim redacted the line item for reagent cost, on the basis of a Confidential Business Information (CBI) claim. This was the version we used for our proposal. However, in its cover letter for the August 12, 2009 submittal, Holcim stated that it later retracted its CBI claim. So the submittal included a second version of the same SNCR cost spreadsheet, in which the reagent line item now appears. The reagent cost is listed by Holcim in this second version at $379,183.

We have recalculated the annual costs of SNCR to include the cost of reagent. Relying on the second version of the cost spreadsheet in Holcim's August 12, 2009 submittal, we now calculate the

annual costs other than capital recovery at $526,471 and the total annual cost, including capital recovery, at $650,399. Using an estimated emission reduction of 556 tons per year of NO_X, as we did in our proposal (which is a 50% reduction from the NO_X emissions baseline of 1,112 tons per year), we have recalculated the cost-effectiveness of SNCR at $1,170/ton. At this cost-effectiveness, we still consider SNCR to be BART for NO_X. Holcim has given us no reason to think otherwise.

We disagree with the statement that EPA provided no explanation on how EPA derived its cost numbers. We explained that we relied on cost estimates supplied by Holcim for capital costs and annual costs of SNCR, with the exception of the Capital Recovery Factor (CRF) used. 77 FR 24015. We included a footnote to Table 44 to explain that we relied on Holcim's capital cost estimate for SNCR. We included a second footnote to that table to explain what CRF we used. We also included a footnote to Table 45 to explain that we relied on Holcim's estimate of direct annual operating costs. 77 FR 24016.

We disagree with the statement that EPA provided no explanation for use of a 20-year amortization period. As explained at 77 FR 24015, we relied on Holcim's estimates of SNCR capital cost and annual costs, with the exception of the capital recovery factor (CRF). We acknowledge that we wrote to Holcim in 2007 to recommend 15-year amortization, and that our decision since then to use 20-year amortization instead needs clarification. We now clarify that after reviewing EPA national guidance on CRFs in more detail since 2007, we determined that it would be more appropriate to use a CRF consistent with 20 years for the useful life of the kiln and associated SNCR controls. As explained below, our use of a 20-year period was not arbitrary.

The guidance we relied on was EPA's Air Pollution Control Cost Manual (CCM), which says, in regard to SNCR, that "In general, indirect annual costs (fixed costs) include the capital recovery cost, property taxes, insurance, administrative charges, and overhead. Capital recovery cost is based on the anticipated equipment lifetime and the annual interest rate employed. An economic lifetime of 20 years is assumed for the SNCR system." EPA Air Pollution Control Cost Manual, Sixth Edition, EPA/452/B–02–001, January 2002, Section 4.2, Chapter 1, page 1–37. We explained in our FIP proposal that without commitments for an early shutdown, EPA cannot consider a shorter amortization period. 77 FR

24014. For consistency in comparing control options for NO_X and SO_2 for all Montana BART sources, our FIP proposal uses a 20-year equipment life in all the BART analyses (provided that the equipment life of each control option is 20 years or more). The CRF for a 20-year equipment life and 7% discount rate (the latter being recommended in Office of Management and Budget (OMB) Circular A–4, which we cited at 77 FR 24016) is 0.0944. As shown in Table 44 at 77 FR 24016, we multiplied Holcim's estimated capital cost of $1,312,800 by this CRF to yield a capital recovery cost of $123,928.

With regard to Holcim's comment that a 20-year amortization would misrepresent actual costs in the event that SCR rather than SNCR were to be required in the next planning period, we cannot anticipate every event that might happen in the future and we are not required to do so in establishing an amortization period.

We disagree with the statement that SNCR costs at the Trident kiln should be similar to Holcim's Hagerstown kiln. The Trident kiln is much smaller than the Hagerstown kiln. The Trident kiln is permitted at 425,000 tons per year of clinker production. Montana Air Quality Permit #0982–11, Condition II.B.6. The Hagerstown kiln is rated at 630,114 tons per year of clinker production capacity. Prevention of Significant Deterioration (PSD) Permit Application for Approval, Holcim Hagerstown, October 30, 2008. Also, the Hagerstown kiln—a dry kiln—likely has different emission rates than the Trident kiln. Without more information, it is not possible to determine how much of the claimed $1,920,000 capital cost of the Hagerstown kiln SNCR system, as well as operating costs, would be costs that are permissible for inclusion in a BART cost estimate. For these reasons, without more information, the costs of the SNCR system at the Hagerstown kiln are not useful for estimating the costs at the Trident kiln. Therefore, we continue to rely on the SNCR capital cost estimate of $1,312,800 and operating cost estimate of $147,288 for Trident, already supplied to us by Holcim in the August 2009 submittal. We also note that, even with a capital cost of $1,920,000, it appears SNCR would remain cost-effective; Holcim has provided no reason why our BART selection would change. This comment has not resulted in any changes to our regulatory text for NO_X BART.

Comment: Holcim indicated that EPA underestimated the costs of installing indirect firing at Trident. Holcim stated that the company did not include indirect firing in its 2007 BART analysis

and did not consider indirect firing to be an appropriate technology to evaluate to achieve NO_X reductions at Trident. Holcim stated that at EPA's request, the company submitted an estimate to EPA of the costs of installing indirect firing at Trident.[15] Holcim stated that in EPA's own analysis, the Agency ''inexplicably and arbitrarily'' eliminated a significant portion of the costs from Holcim's analysis. Nonetheless, even using EPA's underestimated costs for the installation of indirect firing and mistaken assumption that indirect firing could reduce NO_X emissions at Trident by 15%, neither the average cost-effectiveness of indirect firing nor the incremental cost-effectiveness of indirect firing warrant a determination that indirect firing should be selected as BART.

Holcim pointed out that EPA is proposing to require that Holcim install both SNCR and indirect firing at Trident based on its analysis of the average cost-effectiveness of installing both technologies together. Holcim stated that the overwhelming majority of NO_X emissions reductions and improvements in visibility would result from the installation of SNCR alone and that by ignoring the incremental costs of SNCR + indirect firing, and focusing solely on the average cost effectiveness, Holcim states that EPA tries to make the costs of SNCR + indirect firing appear reasonable. Holcim stated that the average cost-effectiveness for the installation of SNCR at Trident is well within the range of what EPA has considered for BART, but that EPA estimated the average cost effectiveness of indirect firing to be $4,279/ton, which is far outside the range of what EPA has considered to be reasonable for BART. With such high costs for indirect firing, the incremental cost-effectiveness of SNCR + indirect firing as compared to SNCR alone is $8,029/ton. Holcim stated that EPA should consider both the average and incremental cost effectiveness of its BART analysis for Trident. Holcim stated that, although EPA clearly identified the incremental cost effectiveness of SNCR + indirect firing, EPA ''inexplicably ignored this unreasonable figure in concluding that the combination of technologies constitutes BART for Trident''. Holcim stated that the incremental cost effectiveness of SNCR + indirect firing is unreasonable given the slight to nonexistent improvement in visibility that it would achieve and that EPA

should eliminate this combination of technologies as BART.

Holcim further stated that, based on modeling, the installation of indirect firing and SNCR at Trident, even if it could achieve EPA's claimed 58% reduction in NO_X emissions, would result in an improvement of visibility of only 0.424 deciview in Gates of the Mountains WA and that this does not constitute a significant or perceptible improvement in visibility. Holcim stated that EPA's conclusion is even more unjustifiable considering the actual percentage reduction that Trident could be expected to achieve with the installation of SNCR of approximately 35% on an annual average basis.

Finally, Holcim stated that the average cost effectiveness estimates for indirect firing alone ($4,279/ton) and for SNCR + indirect firing ($1,528/ton) are well above what EPA used as a cost-effectiveness threshold for NO_X in the Cross-State Air Pollution Rule (CSAPR), which EPA promulgated last year to address health-based standards. Holcim stated that the company does not understand why EPA believes it appropriate to use a higher cost threshold for an aesthetic standard than it has for a health-based standard.

Response: We agree with aspects of this comment, but disagree with others. We agree that an incremental cost effectiveness of $8,029/ton, for LNB/indirect firing + SNCR, versus SNCR alone makes LNB/indirect firing + SNCR unreasonable for BART at the Trident kiln.

As explained in a previous response above, we have removed switching to indirect firing and a LNB from consideration as an option for further reducing NO_X emissions and are treating any NO_X emission reduction that may have been achieved from installation of a new burner as part of the emissions baseline. We have recalculated the proposed BART limit for NO_X to reflect a 50% reduction in NO_X emissions from that baseline by addition of SNCR alone, rather than the 58% reduction we previously used, which reflected a switch to indirect firing and a LNB plus SNCR. The recalculated NO_X BART limit is 6.5 lb/ton clinker.

We disagree, however, with the statement that EPA analyzed for indirect firing as a separate control option. We did not. Throughout our proposal, we refer to the control option as LNB and are now clarifying that this option was intended to include switching to indirect firing and a LNB. We explained at 77 FR 24015 that the capital cost estimate of $4,385,307 for LNB includes the cost of converting from a direct to

an indirect firing system to accommodate LNB, including installation of a baghouse, additional explosion prevention, pulverized coal storage, and dosing equipment. We cited Holcim's additional response of August 2009 as the source of this information.

We disagree with the statement that SNCR could be expected to achieve only a 35% reduction in NO_X emissions. See our response to Holcim's comment above.

We also disagree with the statement that any controls required by our action must demonstrate a perceptible visibility improvement. In a situation where the installation of BART may not result in a perceptible improvement in visibility, the visibility benefit may still be significant. The July 6, 2005 BART Guidelines state:

even though the visibility improvement from an individual source may not be perceptible, it should still be considered in setting BART because the contribution to haze may be significant relative to other source contributions in the Class I area. Thus, we disagree that the degree of improvement should be contingent upon perceptibility. Failing to consider less-than-perceptible contributions to visibility impairment would ignore the CAA's intent to have BART requirements apply to sources that contribute to, as well as cause, such impairment.

70 FR 39129. Visibility impacts below the thresholds of perceptibility cannot be ignored because regional haze is produced by a multitude of sources and activities which are located across a broad geographic area.

With regard to Holcim's comment comparing the cost-effectiveness of controls required under the CSAPR, with cost-effectiveness of controls required under the Regional Haze Rule and the BART Guidelines, we reject the comparison. The two rules address different requirements of the CAA.

Comment: Holcim agreed with EPA's proposal that no additional controls constitute BART for SO_2 at Trident but objected to the imposition of a 30-day SO_2 limit. In Holcim's view, imposing a 30-day limit is neither reasonable nor necessary. Holcim's Trident plant relies on inherent scrubbing to achieve its extremely low SO_2 emissions. EPA's modeling confirms that SO_2 emissions from Trident have effectively zero visibility impact. Trident could more than double its current SO_2 emissions and still not have any reliably predictable impact on visibility (less than 0.1 deciview). Even if all SO_2 emissions from Trident were eliminated, visibility would improve in Gates of the Mountains WA by less than 0.05 deciview; less than one-twentieth of a perceptible change in visibility. See

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[15] Letter from Greg Gannon to Laurel Dygowski, June 9, 2009. (See EPA–R08–OAR–2011–0851– 0038).

77 FR at 24021. *Id.* at 24021, Table 63. Holcim stated that the kiln could not increase its emissions sufficiently to affect visibility without exceeding its currently enforceable limit. Consequently, Holcim stated that there simply is no need to impose short term SO_2 limits to protect visibility.

Second, Holcim stated that because Trident relies on inherent scrubbing to control SO_2, the plant has no real control over the short-term emissions variability that results from the natural variability in limestone from its quarry. The emissions variability would never rise to a level that could affect visibility, but it could cause Trident to exceed the proposed 30-day limit. Thus, the only effect of the 30-day limit would be to impose unnecessary regulatory burdens on the plant and expose it to potential penalties for short-term emissions variability, over which Holcim has no control and which would not impact visibility.

Holcim also commented that EPA is proposing to impose an SO_2 limit that is not based on the installation of retrofit control technology or a process change and that offers no improvement in visibility. Holcim stated that because the proposed limit is based on current emissions and will not improve visibility, it cannot be considered BART; the CAA and EPA's own BART Guidelines require that, in determining BART, the Administrator consider the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. Holcim requested that EPA eliminate its proposed 30-day SO_2 limit as it does not represent BART and would impose unnecessary regulatory burdens and new compliance risks while serving no visibility purpose.

Response: We disagree. The July 6, 2005 BART Guidelines state that "* * * you must establish an enforceable emission limit for each subject emission unit at the source and for each pollutant subject to review that is emitted from the source." 70 FR 39172. Our FIP proposal states that "States, or EPA if implementing a FIP, must address all visibility-impairing pollutants emitted by a source in the BART determination process. The most significant visibility impairing pollutants are SO_2, NO_X and PM." 77 FR 23993. Similarly, the BART Guidelines identify SO_2, NO_X and PM as visibility-impairing pollutants. 70 FR 39160. Since these pollutants are subject to review, emission limits must be established. This comment has not resulted in any changes to our proposal. We note that Holcim has not provided any specific data to demonstrate that

they may exceed the emission limit established for SO_2.

Comment: Holcim disagreed with EPA's proposal to impose an emission limit for PM at Trident of 0.77 lb/ton clinker. Holcim stated that the proposed limit, which is based on Trident's current emissions, is unjustified because it would result in no visibility impact and that as the company had already explained, the selected BART must consider the degree of improvement in visibility. Holcim stated that adding a duplicative applicable requirement to Trident's Title V permit would serve no purpose other than to "create the potential for multiple penalties if the requirement were violated."

Response: See the previous response.

F. Comments on CFAC

Comments: CFAC requested that EPA conduct a BART analysis for their facility now, rather than in the future, so that CFAC has more information for planning a restart. The NPS commented similarly. CFAC also commented that not knowing what the BART controls may or may not be for their facility makes it difficult to know whether those controls could be installed within the five-year timeframe. Another commenter stated that we must either set BART limits for CFAC in the FIP, or we must require plant shutdown as part of the FIP.

Response: We disagree that it is necessary to conduct the BART analysis at this time. The information necessary to complete such a BART analysis is not available until CFAC's future operational plans are known. The requirements for CFAC at 40 CFR 52.1396(n) are sufficient at this time. With regard to CFAC's comment that not knowing what the BART controls may or may not be for their facility makes it difficult to know whether those controls could be installed within the five-year timeframe, the BART Guidelines state that we must require compliance with emission limits no later than five years following the final FIP. 70 FR 39172. CFAC can provide the necessary information to EPA to conduct a BART analysis at any time.

G. Comments on Colstrip Units 1 and 2

Comment: A commenter stated that PPL's modeling files related to the June 2008 Addendum to PPL Montana's Colstrip BART Report should be placed in the docket.

Response: We requested the modeling files from PPL and PPL responded that they could not locate those files. We based our decisions on the more recent modeling described at 77 FR 24002.

Comment: Commenters stated that they object to our proposed BART determinations for NO_X and SO_2 because it would impose emission limits based on SNCR and an additional scrubber vessel, respectively. Commenters stated that EPA's proposed BART analysis for Colstrip Units 1 and 2 is inconsistent with our statutory obligations and our own Guidelines. Commenters suggested that our BART determinations contain significant errors. Commenters stated that we did not properly or correctly consider the costs of the proposed controls, the incremental cost-effectiveness of the controls, and the lack of any reasonably expected visibility improvements resulting from the proposed controls. Instead of the BART proposed by EPA, commenters supported the installation of SOFA for NO_X control with an emission limit of 0.20 lb/MMBtu, and lime injection for SO_2 control with an emission limit of 0.20 lb/MMBtu (both as a 30-day rolling average).

Response: In proposing our BART determinations, we met the statutory requirements under section 169A of the CAA and also followed the BART Guidelines. Based on our consideration of the five statutory BART factors, we continue to find that BART for NO_X is SOFA+SNCR with an emission limit of 0.15 lb/MMBtu (30-day rolling average). Similarly, based on our consideration of the five statutory BART factors, we continue to find that BART for SO_2 is lime injection and an additional scrubber vessel with an emission limit of 0.08 lb/MMBtu (30-day rolling average). Each specific issue raised by the commenters is addressed in a separate response to comments.

Comment: Several commenters asserted that EPA's costs for SNCR on Colstrip Units 1 and 2 were inaccurate and that SNCR is not cost effective. Commenters asserted that this was due to a number of errors, including use of an incorrect baseline, overstating the emission benefits that can be achieved with SNCR, and using improper cost estimation techniques. The commenters submitted their own cost estimates challenging those reported by EPA.

Response: EPA estimated a cost effectiveness for SNCR+SOFA of about $1,550/ton. This estimate has been confirmed after the proposal through information supplied by SNCR vendors.[16] For this control combination, Nalco Mobotec Inc. (Mobotec) estimated a cost effectiveness of roughly $1,395/ton, while Fuel Tech Inc. (Fuel Tech) estimated a cost effectiveness of $1,642/

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[16] Memo from Jim Staudt, Andover Technology Partners, to Doug Grano, July 10, 2012.

ton. The average vendor cost effectiveness of $1,518/ton is slightly lower than what was previously estimated by EPA. Likewise, EPA estimated a cost effectiveness for SNCR (after SOFA) of about $3,300/ton. For SNCR (after SOFA) Nalco Mobotec estimated a cost effectiveness of roughly $2,800/ton, while Fuel Tech estimated a cost effectiveness of $3,500/ton.[17] The average vendor cost effectiveness of $3,150/ton is slightly lower than what was previously estimated by EPA.

Further, the cost effectiveness of SNCR is of course highly dependent on the emission benefits that the control technology can achieve. The discrepancy between our cost effectiveness and that supplied by the commenters is largely driven by this factor. We address this issue, as well as other issues raised by commenters in regard to our SNCR cost estimates for Colstrip Units 1 and 2, separately below.

Comment: Two commenters claimed that EPA used an incorrect baseline of 2008–2010 for Colstrip pollutant emissions in our BART analyses. One commenter stated that the BART Guidelines require a baseline for BART analyses of 2000–2004, while another stated it requires a baseline of 2001–2003. Both of these baseline periods were prior to the installation of additional combustion controls at Colstrip Units 1 and 2. In addition, one commenter claimed that the 2008–2010 baseline emissions are not representative as they reflect a period of economic downturn.

Response: We disagree with these comments. The BART Guidelines require you to choose a representative baseline period, but do not specify that this period must be 2000–2004 or 2001–2003:

The baseline emissions rate should represent a realistic depiction of anticipated annual emissions for the source. In general, for the existing sources subject to BART, you will estimate the anticipated annual emissions based upon actual emissions from a baseline period.

70 FR 39167.

As we discussed in our proposed rule, in 2007 PPL installed additional combustion controls on Colstrip Units 1 and 2 in order to meet new Acid Rain Program emission limits. As these controls were not installed to meet BART requirements, we find that it is appropriate to reflect them in the baseline emissions.

Furthermore, annual heat input data contained in the CAMD emissions system shows the baseline period of 2008–2010 is representative of the

operation of the Colstrip Unit 1 and 2. For example, the 2000–2010 annual heat input for Colstrip Unit 1 ranged from a low of 24,003,758 MMBtu/yr in 2006 to a high of 30,770,151 MMBtu/yr in 2004. The 2008–2010 annual average heat input used by EPA in our BART analysis of 26,578,089 MMBtu/yr falls about in the middle of this range. Therefore, the baseline period chosen by EPA is a realistic depiction of the heat input (and thereby annual emissions) of the Colstrip Units 1 and 2.

Finally, the 2000–2004 annual average heat input (the period that one commenter asserted we should have used), was 26,966,516 MMBtu/yr, and only slightly higher than the heat input used by EPA of 26,578,089 MMBtu/yr. Therefore, even if we had used the 2000–2004 heat input, it would not have affected the BART analysis in a meaningful way.

Comment: Commenters asserted that EPA overstated the emissions benefit of SNCR and that it cannot achieve the level of control claimed. The commenters stated that SNCR cannot achieve a 25% emission reduction. They also stated that SNCR (in combination with combustion controls) cannot achieve an emission limit of 0.15 lb/MMBtu on a 30-day rolling average.

PPL based their assertions on analyses which they obtained from SNCR vendors, Nalco Mobotec, Inc. and Fuel Tech Inc. They stated that these analyses show that the lowest feasible emissions limit for these units on a 30-day rolling average would be in the range of 0.17 to 0.18 lbs/MMBtu. PPL estimates that only a 10% reduction in NO$_X$ emissions could be achieved since ammonia slip must be limited to 0.5 ppm.

NPS questioned whether SNCR can achieve 0.15 lb/MMBtu on a 30-day rolling average due to the sensitivity of SNCR to boiler operation, size, and configuration. NPS did not provide any data or information to support their concerns other than to state that a query of the CAMD emissions system revealed only two EGUs that are consistently meeting 0.15 lb/MMBtu on monthly basis.

Response: We disagree that we have overstated the emissions benefit of SNCR. Neither the vendor analyses nor the SNCR performance data contained in the CAMD emissions system support a conclusion that we overstated the emission benefits of SNR.

The vendor analyses provided by PPL confirm the assumptions made by EPA regarding the emissions benefits that can be achieved with SNCR. Both vendors indicate that a control efficiency of 25%, as assumed by EPA,

can be achieved. For example, Fuel Tech indicates that a "10 ppm ammonia slip would result in ~25% NO$_X$ reduction."[18] Similarly, Mobotec indicates that "[a]t 7 ppm of ammonia slip, NO$_X$ emissions could be reduced up to 25%, provided there would be no impact on the performance of the air preheater, or other plant systems."[19] We realize that the control efficiency of SNCR is highly dependent on the level of ammonia slip. However, we find no reason that an ammonia slip level of 5 to 10 ppm is unacceptable for the Colstrip Unit 1 and 2. These levels of ammonia slip are typical for SNCR. In fact, Fuel Tech stated that "[i]n the coal-fired Utility market segment, the SNCR systems have been historically designed for a minimum of 5 ppm ammonia slip with some lower sulfur applications with NH$_3$ slip levels of 10 ppm."[20] (We address the potential impacts from ammonia slip in a separate response to comments).

Further, we note that the control efficiencies provided by the vendors are for operation at full load, and that higher control efficiencies can be achieved at lower loads. For instance, Mobotec relates that "[h]igher NO$_X$ reductions can be achieved at mid to low load heat inputs, possibly up to 40%."[21] Given that the Colstrip Unit 1 and 2 frequently operate at below full load, it is likely that on an annual basis SNCR can achieve better than the 25% emission reduction assumed by EPA.

PPL has erred in stating that the control efficiency of SNCR is no more than 10% since ammonia slip levels must be limited to 0.5 ppm. The commenter bases this claim on what they believe to be a precedent set in the Centralia Power Plant BART determination. However, the Centralia BART determination prepared by Washington stated that, "TransAlta's cost analysis uses a urea-based SNCR system providing a nominal 25% reduction in NO$_X$ levels with a 5 ppm ammonia slip."[22] And as established by the vendor analyses discussed above, much higher emission reductions than 10% can be achieved with SNCR at ammonia slip levels of 5 to 10 ppm.

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[17] Id.

[18] Letter from Dale T Pfaff, Fuel Tech, Inc. to Gordon Criswell, PPL Montana, May 29, 2012.

[19] Letter from Gary Tonnemacher, Mobotec, to Gordon Criswell, PPL Montana, May 25, 2012.

[20] Fuel Tech, May 29, 2012.

[21] Mobotec, May 25, 2012.

[22] BART Determination Support Document for Transalta Centralia Generation LLC Power Plant, Centralia, Washington, Prepared by Washington State Department of Ecology, Revised November 2011, p. 14; Region 10 clarified the typographical error in their **Federal Register** notice via email from Steve Body to Aaron Worstell dated July 26, 2012.

Similarly, the performance data contained in CAMD emissions system only serves to reinforce the assumptions made by EPA regarding the emission benefits of SNCR. Based on our review of the CAMD emissions data, there are many EGUs equipped with SNCR (with combustion controls) that are achieving an emission rate of 0.15 lb/MMBtu or lower on a monthly basis. One unit in particular, Boswell Unit 4, is very comparable to the Colstrip Unit 1 and 2. Boswell Unit 4, like the Colstrip Unit 1 and 2, burns sub-bituminous coal and is tangentially fired. In addition, Boswell Unit 4 had a baseline annual emission rate (with LNB and CCOFA, but prior to the installation of SNCR and SOFA) similar to the Colstrip Unit 1 and 2 of approximately 0.35 lb/MMBtu. Since the installation of full combustion controls and SNCR, the Boswell Unit has achieved a monthly emission rate of below 0.15 lb/MMBtu. For example, between April 2011 and April 2012, the most recent full year of emissions data available in the CAMD emissions system, the monthly emission rates for Boswell Unit 4 were between 0.11 and 0.14 lb/MMbtu. This is a strong indicator of the performance rates that can be expected for Colstrip Units 1 and 2.

We acknowledge that a range of performance rates are currently being achieved with SNCR, and are in some cases not as low as at Boswell Unit 4. However, without a showing that there are circumstances unique to the Colstrip Unit 1 and 2 that would prevent SNCR from achieving the same reductions as at Boswell Unit 4, we find no reason that an emission limit higher than 0.15 lb/MMBtu on a 30-day rolling average is warranted. This is consistent with the BART Guidelines:

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.

70 FR 39166.

Finally, due to the smaller size of Colstrip Unit 1 and 2 (333 MW each), we expect that SNCR would be more effective than at Boswell Unit 4 (525 MW). This is because the effectiveness of SNCR on large boilers is somewhat reduced as the relatively larger cross-section of the boiler makes distribution of the reagent difficult.

For the reasons stated here, we find no basis in claims that we overestimated the emission benefits for SNCR.

Comment: Commenters stated that EPA did not properly consider the incremental cost-effectiveness of SNCR

at Colstrip Units 1 and 2. Commenters stated that EPA improperly assessed the costs of SNCR when combined with SOFA, and not as an individual technology. Commenters stated that the incremental cost of adding SNCR to SOFA outweighs the benefits. One commenter cited portions of the BART Guidelines that address consideration of incremental costs between competing technologies.

Response: We disagree with these comments. We addressed why these control technologies were analyzed together in our proposed rule:

The post-combustion control technologies, SNCR and SCR, have been evaluated in combination with combustion controls. That is, the inlet concentration to the post-combustion controls is assumed to be 0.20 lb/MMBtu. This allows the equipment and operating and maintenance costs of the post-combustion controls to be minimized based on the lower inlet NO_X concentration.

77 FR 22043.

If we had not combined the control technologies, then the cost effectiveness would have been more favorable to SNCR. This is because the inlet to the SNCR would reflect the current annual baseline emissions (e.g., 0.308 lb/MMbtu for Colstrip Unit 1, 2008–2010), as opposed to the anticipated post-combustion (i.e., with SOFA) rate of 0.20 lb/MMBtu assumed by EPA. This would lead to larger emission reductions being achieved by SNCR, and thereby, more favorable cost effectiveness.

Regardless, EPA did disclose the costs of SNCR alone (after SOFA) in our proposed rule. Consider for example our BART analysis for Colstrip Unit 1. See 77 FR 24025–24027 and spreadsheet entitled ''EPA SNCR Cost Colstrip Unit 1 Final'' located in the docket. The total annual cost of SNCR given in our proposed rule was $2,188,569, while the emission reductions were 664 tpy. This results in a cost effectiveness of $3,291/ton, essentially the incremental cost effectiveness between SNCR+SOFA and SOFA as given in Table 77 of the proposed rule. EPA selected SNCR as BART in consideration of these costs, all of which were presented to the public in our proposed rule.

Comment: Various commenters stated that EPA disregarded, or did not properly account for, issues associated with ammonia slip from SNCR systems. The commenters expressed concerns about both potential operational and environmental impacts. In regard to potential operational impacts, commenters expressed concerns about fouling of the air preheater. In regard to potential environmental impacts, commenters expressed concerns related

to a visible wet plume, greenhouse gases, and toxic emissions.

Response: We disagree with these comments. In our proposed rule, we explicitly considered issues associated with ammonia slip from SNCR systems. For example:

As Colstrip Unit 1 burns sub-bituminous PRB coal having a low sulfur content of 0.91 lb/MMBtu (equating to a SO_2 rate of 1.8 lb/MMBtu), [citation omitted] it was not necessary to make allowances in the cost calculations to account for equipment modifications or additional maintenance associated with fouling due to the formation of ammonium bisulfate. These are only concerns when the SO_2 rate is above 3 lb/MMBtu.[citation omitted] Moreover, ammonium bisulfate formation can be minimized by preventing excessive NH_3 slip. Optimization of the SNCR system can commonly limit NH_3 slip to levels less than the 5 parts per million (ppm) upstream of the pre-air heater.

77 FR 24025.

This observation has been verified by the vendor analyses submitted by PPL. For example, Fuel Tech stated that ''[s]ince the Colstrip 1&2 coal has low sulfur, there is less concern of ammonium bisulfate formation and its associated air preheater pluggage issues.'' [23]

We also find that concerns about the potential for adverse environmental impacts, such as a visible wet plume, toxic ammonia emissions, or greenhouse gas emissions, are unfounded or exaggerated. As previously discussed, optimization of the SNCR system would limit ammonia slip to acceptable levels (i.e., 5–10 ppm). Moreover, as noted in the BART determination for the Transalta Centralia Power Plant in Washington, ammonia in the gas stream is further removed when a wet scrubber is present.[24] Since the Colstrip Units 1 and 2 utilize wet scrubbers, no additional plume visibility or other local impacts would be anticipated.

While we did not quantify increases in greenhouse gases associated with SNCR in our proposed rule, we did quantify the additional amount of coal that is needed to account for the loss in thermal efficiency and found it to be insignificant. For example:

SNCR reduces the thermal efficiency of a boiler as the reduction reaction uses thermal energy from the boiler.[citation omitted] Therefore, additional coal must be burned to make up for the decreases in power generation. Using CCM calculations we

[23] Fuel Tech, May 29, 2012.
[24] BART Determination Support Document for Transalta Centralia Generation LLC Power Plant, Centralia, Washington, Washington State Department of Ecology, revised November 2011, p. 13.

determined the additional coal needed for Unit 1 equates to 77,600 MMBtu/yr. 77 FR 24026.

We note that 77,600 MMBtu/yr is only 0.3% of the 2008–2010 annual average heat input for Colstrip Unit 1. The increase in CO_2 emissions would be proportional (that is, 0.3%). The formation of other greenhouse gases, such as nitrous oxide, would be highly dependent upon the reagent used, the amount of reagent injected and the injection temperature. Regardless, we note that the potential for CO_2 increases also exists for SCR, the technology favored by some commenters. This is due to the energy penalty associated with the large pressure drop across the SCR reactor. Therefore, consideration of greenhouse gases would not have necessarily favored SNCR over SCR.

Comment: MDEQ stated that EPA failed to provide analysis or consideration of the impact SNCR installation may have on mercury controls at Colstrip 1 & 2. MDEQ stated that this failure ignores factor 3 of the five-factor analysis, "Any existing pollution control technology in use at the source." MDEQ contended that the application of SNCR will require these units to displace the sorbent injection systems which limit mercury emissions, and that this displacement will compromise the Montana Mercury Rule.

Response: We disagree with this comment. SNCR should have no impact on mercury capture in the scrubber or with mercury capture from sorbent injection and will neither improve nor harm any efforts at Colstrip Units 1 and 2 to comply with Montana's Mercury Rule. There is no reason why Colstrip Units 1 and 2 cannot utilize both SNCR and sorbent injection (if sorbent injection is what PPL chooses to use at Colstrip 1 and 2). Injection points for SNCR and for sorbent injection are at different locations—the furnace for SNCR and the downstream ductwork for sorbent injection. A review of EPA's National Electric Energy Data System (NEEDS) reveals that are currently 17 utility boilers equipped with both SNCR and activated carbon injection systems.[25] The list of facilities includes units ranging from 65 MW to 405 MW and burning both bituminous and subbituminous coals. Therefore, there is no basis for the assertion that these two pollution control systems cannot be used together on the same facility.

Comment: MDEQ stated that EPA lacks consideration of Montana's existing SIP requirements. For instance, sources required to add controls would have to provide "de minimis" notifications under ARM 17.8.745, or potentially a resource-intensive demonstration that the additional control would not contribute to a violation of an air quality standard. Additionally, MDEQ stated that some of the proposed controls might require either a minor source permit or a major modification under the NSR program. MDEQ expressed particular concern over EPA's lack of analysis of PPL's estimated increase in ammonia slip.[26] MDEQ suggested that increases in ammonia slip could lead to increases in $PM_{2.5}$ emissions at Colstrip 1 & 2, potentially requiring the unit(s) to submit a "politically controversial, legally complex, and technically challenging" NSR major modification permit. MDEQ also stated that an NSR major modification would significantly alter the time and cost required to implement the proposed BART.

Response: We disagree with these comments. MDEQ has not provided any data or information to substantiate that our BART determinations would interfere with existing SIP requirements, including those for permitting. They have only speculated that these might be concerns. In addition, these concerns would not negate our obligation to prescribe BART controls. We have addressed concerns related to ammonia slip in a separate response to comments.

Comment: Commenters stated that EPA asserted, with no analysis, that the energy needs associated with installation SNCR or SCR on the Colstrip Unit 1 and 2 are minimal and neither the additional energy requirements nor the nonair quality environmental impacts associated with disposal of the ash waste or transportation of the chemical reagents or catalysts warranted eliminating either SCR or SNCR.

Response: We disagree with this comment. We provided analysis of the energy impacts associated with SNCR and SCR in our proposed rule. For example, for the application of SNCR to Colstrip Unit 1 we "determined the additional coal needed for Unit 1 equates to 77,600 MMBtu/yr." 77 FR 24026. Similarly, we determined that SCR requires "additional electric power to meet fan requirements equivalent to approximately 0.3% of the plant's electric output." [citation omitted] 77 FR 24026. We also provided analysis of the non- air-quality impacts associated with SNCR and SCR in our proposed rule. See for example 77 FR 24026. We

did not find it necessary to quantify these impacts as they are negligible. Also, the nonair quality impacts would be no different than those at numerous other boilers where SNCR or SCR have been successfully applied. Regardless, the commenters did not present any data or information that establishes that the energy or nonair quality impacts of SNCR or SCR would make these control options unacceptable.

Comment: NPS stated that allowing five years from promulgation of the rule to install SNCR on Colstrip Units 1 and 2 is excessive since it can be installed in less than one year.

Response: We agree that SNCR in some cases can be installed in less than one year. However, the BART Guidelines require compliance with the BART emission limit as expeditiously as possible but in no event later than five years after promulgation of the FIP. 40 CFR 51.308(e)(1)(iv). Our FIP is consistent with that requirement.

Comment: The NPS agreed with EPA that an annual emission rate of 0.05 lb/MMBtu is achievable with SCR.

Response: Comment noted.

Comment: EarthJustice stated that EPA incorrectly rejected SCR as BART for NO_X pollutant control for Colstrip Units 1 and 2. They asserted that EPA's analysis was biased against the selection of SCR as BART. They also asserted that we manipulated data, made assumptions, and performed calculations where the results are specified but the calculation itself is absent from the public record.

Response: We disagree with these comments. Our selection of SNCR+SOFA, and not SCR+SOFA, as BART was based on our objective consideration of the five statutory factors. Moreover, all of our analyses and assumptions were supported by the docket which was available for public review.

Comment: EarthJustice stated EPA underestimated the NO_X reductions that can be achieved with SCR technology. They stated that major SCR catalyst vendors routinely guarantee at least 90% removal efficiency for SCR systems.

Response: We disagree. EarthJustice has incorrectly assumed that a 90% control efficiency can be achieved in all applications regardless of the input NO_X emission rate or other parameters. The baseline annual emission rate for Colstrip BART units is around 0.31 lb/MMBtu (annually). After the installation of SOFA, the emission rate is expected to be 0.20 lb/MMBtu (annually). Therefore, a 90% control efficiency for SCR would correspond to a controlled emission rate of 0.02 lb/MMBtu

[25] Memo from Jim Staudt, Andover Technology Partners, to Doug Grano, July 13, 2012, p. 9.

[26] September 23, 2011 PPL submittal titled "NO_X Control Update to PPL Montana's Colstrip Generating Station BART Report."

(annually). We find that this is an unrealistic expectation of the level of control that can be achieved with SCR.

Comment: EarthJustice stated that EPA incorrectly used the Integrated Planning Model (IPM) for the direct capital costs of SCR for Colstrip Units 1 and 2 and that we failed to explain why we did so. They stated that the BART Guidelines require that the CCM be used for BART cost analyses, except for the site-specific cost of the equipment itself which will vary depending on site-specific conditions. EarthJustice also stated that our use of IPM led to the double counting of installation costs.

Response: We disagree with these comments. We explained our rationale for using IPM for direct costs for SCR in the proposed rule:

We relied on a number of resources to assess the cost of compliance for the control technologies under consideration. In accordance with the BART Guidelines (70 FR 39166 (July 6, 2005)), and in order to maintain and improve consistency, in all cases we sought to align our cost methodologies with the EPA's Control Cost Manual (CCM).[citation omitted] However, to ensure that our methods also reflect the most recent cost levels seen in the marketplace, we also relied on control costs developed for the Integrated Planning Model (IPM) version 4.10.[citation omitted] These IPM control costs are based on databases of actual control project costs and account for project specifics such as coal type, boiler type, and reduction efficiency. The IPM control costs reflect the recent increase in costs in the five years proceeding 2009 that is largely attributed to international competition. Finally, our costs were also informed by cost analyses submitted by the sources, including in some cases vendor data.

77 FR 24024.

As noted in the proposed rule, our use of IPM was intended to ensure that the direct capital costs reflect the most recent cost levels seen in the marketplace. Therefore, we disagree that this led to an overestimation of the costs of SCR. Also as noted in the proposal, while we did use IPM for direct capital costs, the remainder of our analysis for SCR conformed to the CCM.

EarthJustice is mistaken in asserting that our use of IPM led to the double counting of installation costs. EarthJustice is also mistaken in asserting that ''in the Cost Control Manual, those installation costs [direct installation costs] are included as indirect capital costs.'' Direct installation costs are treated in the same way whether using the CCM or IPM. That is, both provide direct capital costs that are inclusive of the direct installation costs. For example, the CCM states:

Direct capital costs (DCC) include purchased equipment costs (PEC) such as

SCR system equipment, instrumentation, sales tax and freight. This includes costs associated with field measurements, numerical modeling and system design. *It also includes direct installation* costs such as auxiliary equipment (e.g., ductwork, fans, compressor), foundations and supports, handling and erection, electrical, piping, insulation, painting, and asbestos removal.[27] (emphasis added)

Similarly, the IPM documentation states the bare module costs include equipment, installation, buildings, foundations, electrical, and the retrofit factor.[28] Since we used the bare module capital costs to replace the direct capital costs in the CCM calculations, we did not double count direct installation costs. For example, for Colstrip Unit 1 we used the bare module capital cost of $55,578,137 (2010 dollars) as input for the direct capital cost.

Comment: EarthJustice stated that EPA overestimated capital costs of SCR on Colstrip Units 1 and 2 by using an inflated capital recovery factor (CRF) that is not based on accurate, available, site-specific information and by underestimating the lifetime of SCR. EarthJustice asserted that EPA should have used a CRF based on a 5% interest rate and an equipment life of 30 years

Response: We disagree that the CRF used by EPA led to an overestimation of capital costs for SCR. In our cost analysis for Colstrip Units 1 and 2, we used an interest (discount) rate of 7% for all control options. This is consistent with guidance contained in the Office of Management and Budget, Circular A–4, for regulatory analysis.[29] In regard to the equipment life assumed by EPA for SCR, the BART Guidelines state:

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

70 FR 39169 (emphasis added).

And in regard to SCR, the CCM states:
Capital recovery cost is based on the anticipated equipment lifetime and the annual interest rate employed. *An economic lifetime of 20 years is assumed for the SCR system.* The remaining life of the boiler may

also be a determining factor for the system lifetime.[30] (emphasis added)

The equipment life assumed by EPA is consistent with that specified by the CCM for SCR (that is, 20 years). In addition, the consistent use of a 7% interest rate and 20 year equipment life ensures that the costs are comparable between all of the control options considered (provided that each option has an equipment life of at least 20 years). It also ensures that the costs are comparable to other BART analyses where similar assumptions have been made. However, we acknowledge that there may be circumstances where it is reasonable to assume a shorter or longer equipment life. In particular, it may be appropriate to consider a shorter equipment life where the owner plans to shut a unit down in less than 20 years.

Further, assuming a 30 year economic life would not change our conclusions regarding BART for Colstrip Units 1 and 2. For example, for Colstrip Unit 1 we have recalculated the cost-effectiveness amortizing over 30 years. The resulting cost effectiveness for SCR+SOFA is $2,879/ton, as compared to the cost effectiveness of $3,195/ton amortizing over 20 years which we cited in our proposed rule. We find that the cost of SOFA+SCR is reasonable regardless of the assumed equipment life. However, we find that the limited visibility benefits would continue to preclude our selection of SCR+SOFA as BART.

Comment: EarthJustice claimed that EPA skewed the cost effectiveness results away from SCR for Colstrip Units 1 and 2 by overestimating the operations and maintenance costs associated with SCR by approximately $600,000. In particular, EarthJustice questioned our costs for maintenance, catalyst replacement, and reagent use.

Response: We disagree. While EarthJustice has suggested alternate assumptions that could be made when estimating each of the operation and maintenance costs (that is, direct annual costs) noted, they have not substantiated that their assumptions are superior to those used by EPA. Moreover, they have not substantiated that EPA erred in making any of the cost assumptions related to operations and maintenance. They have only pointed out instances in which they would make different assumptions. Therefore, we see no reason that our cost assumptions for O&M should be supplanted by those that EarthJustice would otherwise choose in order to arrive at lower cost effectiveness.

Regardless, if we were to incorporate each of the changes to the O&M costs

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[27] CCM, Section 4, Chapter 2, p. 2–41.
[28] IPM, Chapter 5, Appendix 5–2A, p. 2.
[29] Office of Management and Budget, Circular A–4, Regulatory Analysis, *http://www.whitehouse.gov/omb/circulars_a004_a-4/.*

[30] CCM, Section 4, Chapter 2, p. 2–48.

suggested by EarthJustice, it would not change our BART determination. For example, for Colstrip Unit 1, reducing the O&M costs of SCR by $600,000 would only moderately lower the cost effectiveness of SNR+SOFA from $3,195/ton to $3,019/ton. Though we find that both of these costs are reasonable, we continue to find that there is insufficient visibility benefit (0.404 deciview for Unit 1 and 0.423 deciview for Unit 2 at the most improved Class I area) to support the selection of SCR as BART.

Comment: EarthJustice stated that EPA made multiple errors in our SCR cost analysis for Colstrip Units 1 and 2. EarthJustice claims that EPA made errors in relation to the baseline NO_X emissions, the control efficiency of SCR, the cost estimation method for direct capital costs (*CCM* vs. *IPM*), specific operation and maintenance costs, and the calculation of indirect annual costs (by way of the CRF). EarthJustice provided their own cost estimates for SCR, addressing the errors which they claimed EPA made. EarthJustice's cost effectiveness is 55–65% lower than the values calculated by EPA, making SCR+SOFA significantly more cost effective.

Response: We disagree that we made multiple errors in our SCR cost analysis for SCR for Colstrip Units 1 and 2 which led to inaccurate cost effectiveness. Each of the errors which EarthJustice claims EPA made has been addressed in separate responses. Therefore, we find that the cost effectiveness for SCR in the proposed rule was accurate and a correct basis for rejecting SCR as BART (in consideration of the remaining statutory BART factors).

Comment: The NPS commented that EPA has placed undue weight on the incremental cost effectiveness of SOFA+SCR at Colstrip Units 1 and 2.

Response: We disagree. In our proposed rule, we estimated the incremental cost effectiveness of SCR+SOFA (over SNCR+SOFA) to $5,770/ton and $5,887/ton, respectively. These costs far exceed the corresponding average cost effectiveness of $3,195/ton and $3,235/ton. Given these costs, we continue to find that SCR+SOFA is not justified by the visibility improvement that would be provided.

Comment: Some commenters stated that EPA properly concluded that SCR does not constitute BART for Colstrip Units 1 and 2, but that EPA incorrectly analyzed the capital costs and cost-effectiveness of SCR. Commenters stated that EPA failed to consider SCR costs estimates which PPL submitted in

February 2012.[31] Commenters also stated that EPA's reliance on outdated information is not consistent with its own guidance to use engineering estimates and that EPA should modify its rationale in the final rule to conclude that, when the actual costs of the technology are taken into consideration, SCR is not a cost-effective technology. In particular, commenters noted that EPA estimates the capital cost of the SCR at $78 million and rejects PPL's cost estimate of $190 million

Response: We disagree that we incorrectly analyzed the capital costs and cost-effectiveness of SCR. We did not accept the SCR cost estimates submitted by PPL in February 2012 that were based on cost estimates provided to PPL by a consultant. EPA rejected these cost estimates for a number of reasons.

First, the cost estimates provided to PPL by the consultant do not represent site-specific costs. The BART Guidelines state that "[t]he 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 CCM Fifth Edition, February 1996, EPA 453/B–96–001)." 70 FR 39166. Since the costs submitted by PPL were simply adapted from another (undisclosed) utility boiler, and are not specific to Colstrip Units 1 and 2, they should not be considered a budgetary bid as described in the BART Guidelines. In fact, PPL's consultant represents the costs as a "feasibility capital cost estimate" and not as a budgetary bid.[32]

Second, the capital costs for SCR claimed in PPL's February 2012 submittal are far in excess of the range of capital costs documented by various studies for actual installations. Five industry studies conducted between 2002 and 2007 have reported the installed unit capital cost of SCRs, or the costs actually incurred by owners, to range from $79/kW to $316/kW (2010 dollars).[33] These studies show actual capital costs are much lower than estimated by PPL for Colstrip Units 1 and 2 ($571/kW for each unit; 2011 dollars). Moreover, the capital costs surveyed by the studies represent a range of retrofit difficulties, including very difficult retrofits having

significantly impeded construction access, extensive relocations, and difficult ductwork transitions. Therefore, to the extent that similar retrofit difficulties may exist for Colstrip Units 1 and 2, the high end of the range documented in the reports is representative.

Third, we are concerned about the disparity among the various cost estimates submitted by PPL. Between August 2007 and February 2012, PPL submitted four separate SCR cost estimates for the Colstrip Unit 1 and 2. In the first SCR cost estimate, submitted in August 2007, PPL estimated capital costs of $25,282,233 ($76/kW), total annual costs of $7,289,482 and a cost effectiveness of $2,272/ton (each unit; 2007 dollars).[34] In the second SCR cost estimate, submitted in June 2008, PPL estimated capital costs of $29,581,465 ($88/kW), total annual costs of $7,987,179 and a cost effectiveness of $1,735/ton (each unit; 2008 dollars).[35] PPL's first and second cost estimates were generally performed in conformance with EPA's CCM. The lower cost effectiveness in the second submittal was driven primarily by a change in the assumed maximum control level (from 0.15 lb/MMBtu to 0.06 lb/MMbtu), and thereby greater annual emission reductions. In the third SCR cost estimate, submitted in September 2011, PPL estimated capital costs of $152,508,328 ($457/kW), total annual costs of $16,733,719 and a cost effectiveness of $7.405/ton (each unit; 2011 dollars).[36] The third cost estimates were largely based on control costs developed for the Integrated Planning Model.[37] PPL assumed a retrofit factor of 2 when using the IPM approach. We note that this retrofit factor, equating to 100% over the IPM base model capital costs, was unsupported and far in excess of the range described in the IPM documentation: "Retrofit difficulties associated with an SCR may result in capital cost increases of 30 to 50% over the base model." [38] In the fourth SCR cost estimate, submitted in February 2012, PPL estimated capital costs of $190,000,000 ($571/kW), total annual

[31] Letter from David Bowen, Burns & McDonnell, to James Parker, PPL Montana, February 7, 2012.

[32] Bowen letter.

[33] Dr. Phyllis Fox, Revised BART Cost-Effectiveness Analysis for Tail End Selective Catalytic Reduction at Basin Electric Power Cooperative Leland Olds Station Unit 2. Report Prepared for U.S. EPA, RTI Project Number 0209897.004.095, March 2011.

[34] BART Assessment Colstrip Generating Station, prepared for PPL Montana, LLC, by TRC ("Colstrip Initial Response"), August 2007, Table A4–8(c).

[35] Addendum to PPL Montana's Colstrip BART Report Prepared for PPL Montana, LLC; Prepared by TRC, ("Colstrip Addendum"), June 2008, Table 5.3–3.

[36] NO_X Control Update to PPL Montana's Colstrip Generating Station BART Report Prepared for PPL Montana, LLC, by TRC, September 2011, Table 2–3b.

[37] Documentation for EPA Base Case v.4.10 Using the Integrated Planning Model, August 2010, EPA #430R10010.

[38] IPM, Chapter 5, Appendix 5–2A, p. 1.

costs $19,956,767, and a cost effectiveness of $8,884/ton (each unit; 2011 dollars).[39] The fourth cost estimate was also largely based on control costs taken from IPM, but was augmented by capital cost estimates provided to PPL by a consultant. In all, the capital costs varied by a factor of more than seven ($76/kW to 571/kW), and the cost effectiveness varied by a factor of more than 5 ($1,735/ton and $8,884/ton). The large disparity between PPL's February 2012 cost estimates and those in their previous submittals led us to question their accuracy.

Finally, PPL's February 2012 cost estimates contained cost items that are either speculative in nature or not well documented. For example, they include capital costs for duct and boiler reinforcement even though the potential for boiler implosion was not evaluated by PPL's consultant.[40]

For the reasons stated above, EPA finds that no changes to the BART determinations or to the FIP are needed in response to this comment.

Comment: Various commenters objected to EPA's BART determinations for Colstrip 1 and 2. EarthJustice urged EPA to require selective SCR+SOFA as the best system of continuous emission control to meet a 0.05 lb/MMBtu NO_X emission limit applicable on a 30-day rolling average basis. NPS also recommended that we require SCR+SOFA. PPL supported a BART emissions rate for NO_X of 0.20 lb/MMBtu on a 30-day rolling average basis, reflecting the installation of SOFA.

Response: Based on our consideration of the five statutory BART factors, we continue to find that BART for NO_X at each of the Colstrip Unit 1 and 2 is an emission limit of 0.15 lb/MMBtu (30-day rolling average) achievable with SNCR+SOFA.

Comment: PPL stated that EPA's proposed emission limit for PM of 0.10 lb/MMbtu on a 30-day rolling average for each of the Colstrip Unit 1 and 2 is flawed. PPL asserted that the current PM limit is 0.10 lbs/MMBtu as an annual average, based on a compliance assurance monitoring plan together with annual stack testing. In order to accommodate the shorter averaging period, the PPL suggested that the 30-day rolling average emission limit proposed in the FIP be increased to 0.12 lb/MMBtu.

Response: We disagree with some aspects of this comment, but agree with others. PPL has erred in stating that the

current PM limit is 0.10 lb/MMBtu as an annual average. The Final Title V Operating Permit (#OP0513–06) indicates that the emission limit is 0.10 lb/MMbtu, but does not provide an averaging period. The Title V permit requires that compliance with the emission limit be demonstrated by a Method 5 or Method 5B stack test once per year. As these stack test methods typically consist of three sampling runs of at least 120 minutes in duration, and are not long-term continuous measurements, it is not possible to average the emissions over 30-days or a year. For this reason, we corrected the proposed PM emission limits in a correction notice. 77 FR 29270. We clarified that that emission limits for NO_X and SO_2, but not PM, shall apply on a 30-day rolling average.

As we are not requiring that PM emission limits apply on a 30-day rolling average, PPL's suggestion that the emission limit be increased to 0.12 lb/MMBtu is no longer relevant. The PM emission limits will remain unchanged from those in the proposed rule which are identical to those in the Title V permit.

Comment: EarthJustice stated that EPA's exemption of Colstrip Units 1 and 2 from BART for PM is improper and unsupported. EarthJustice asserts that EPA has not complied with its statutory and regulatory obligations to determine BART for PM emissions from Colstrip Units 1 and 2 in that EPA simply made a declaration and skipped the statutory process. EarthJustice stated that the existing venturi scrubbers are not best technology and have not been considered such for a long time because particle scrubbers do not remove particulates sufficient to comply with basic CAA requirements. In addition, EarthJustice stated that EPA should have considered more effective technologies, such as baghouses.

Response: We disagree. As with existing SO_2 controls, we do not find that it is necessary to consider the replacement of existing PM controls with new controls. This is particularly true for PM as the existing controls for Colstrip Units 1 and 2 currently reduce emissions by more than 98%. Moreover, the contribution to the baseline visibility impact from PM is very small (e.g., for Colstrip Unit 1, less than 4% of 0.922 deciview, or 0.037 deciview). The most visibility improvement that could be expected, even if all PM were eliminated, is 0.037 deciview. The visibility improvement that could be expected with upgrades to the existing PM controls is only a fraction of 0.037 deciview. Therefore, it was reasonable

for us to conclude that the existing controls represent BART.

In addition, EarthJustice has conflated the most stringent controls with BART. BART is not necessarily the most stringent controls, but the best system of continuous emission reduction taking into consideration the five statutory factors.

Comment: NPS stated that they disagree with the PM emissions that we used in modeling the visibility impacts for Colstrip Units 1 and 2. They stated that the PM emissions data provided by PPL is more representative because it included both condensable and filterable PM emissions, while the PM data used by EPA did not measure condensable PM.

Response: The difference in the approach used to characterize PM emissions for visibility modeling purposes is negligible. Moreover, as the PM emissions were held constant for all of the control scenarios that EPA modeled, they had no impact on our BART determinations for NO_X and SO_2.

Comment: EarthJustice stated that EPA made the same error in calculating baseline emissions in its SO_2 BART determination for Colstrip Units 1 and 2 as it did in its NO_X BART determination. EarthJustice asserted that EPA should have used a baseline of 2001–2003.

Response: We disagree with this comment. As discussed in a separate response to comments, we have established a baseline which provides a realistic depiction of anticipated annual emissions for the source. For example, the 2008–2010 baseline we used for Colstrip Unit 1 reflects annual average emissions of 5,548 tons/yr. By comparison the annual average emissions for 2000–2010, 5,504 tons/yr, were only slightly lower.

Comment: PPL stated that EPA's estimate of the performance that can be achieved with lime addition on Colstrip Units 1 and 2 was wrong. The commenter stated that EPA's assumed emission rate for SO_2 of 0.15 lbs/MMBtu was overly optimistic, and that a rate of 0.20 lbs/MMBtu on a 30-day rolling average basis is achievable.

Response: We disagree with this comment. The emission rate which EPA assumed for limestone lime addition (injection) on Colstrip Units 1 and 2 was 0.15 lb/MMBtu on an annual basis, not on a 30-day rolling average basis. This was based on PPL's amended BART submittal of August of June 2008.[41] We did not specify a 30-day rolling average

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[39] Letter from Mark M. Hultman, P.E., TRC, February 9, 2012.

[40] Bowen letter, p. 2.

[41] Colstrip Addendum, p. 4–1.

emission limit for limestone injection since we did not select it as BART.

Comment: PPL commented that installation of an additional scrubber vessel is technically impracticable, if not infeasible, due to space constraints and the potential for equipment scaling.

Response: First, addition of a fourth scrubber vessel for each of Colstrip units 1 and 2 does not appear to be impracticable due to space constraints. PPL's argument that there is no space availability for an additional scrubber vessel is not supported by its own consultant. In addition, the site visit conducted by EPA [42] verified and the site plan provided by PPL shows ample space for locating additional equipment. A satellite image of units 1 and 2 located in the docket.[43] In fact, PPL's consultant, Burns & McDonnell was able to find space for a new vessel with associated ductwork: ''[t]here is sufficient space behind the stacks for installation of the fourth scrubber module, ID fan, ductwork and accessories.'' [44] As URS pointed out, this might require an additional booster fan, which is included in the Burns & McDonnell estimate.[45]

Second, an additional scrubber vessel may not be necessary to avoid scaling. It is possible to inject lime and mitigate the risk of scaling through addition of a forced oxidation system or by use of chemical additives that mitigate scaling. The current system uses natural oxidation. Forced oxidation will enable higher lime injection rates while avoiding scaling. Forced oxidation systems will require blowers and piping, and agitators that could be retrofit on the existing scrubber vessels at what is likely to be a much lower cost than the cost of a new absorber vessel. An alternative to forced oxidation is use of chemical additives that address scaling. These additives are available from companies such as Nalco Chemical Company.

We find that it is acceptable for PPL to reduce emissions by means other than installing an additional scrubber vessel, provided that the emission limit of 0.08 lb/MMBtu on a 30-day rolling average is met.

Comment: PPL stated that EPA overstated the emissions benefit of an additional scrubber vessel.

Response: PPL argues that an additional vessel would not in fact reduce emissions because velocity

through the existing scrubber vessel tray will be reduced. As noted in responses to other comments, an additional scrubber vessel may not be necessary to achieve 95% SO$_2$ capture. Nevertheless, with regard to addition of another scrubber vessel and the impact on SO$_2$ reduction, PPL relies on a June 15, 2012, letter from Jonas Klingspor of URS Corporation that states the reduced gas velocity would reduce SO$_2$ reduction. The URS letter and PPL, however, overlook the fact that the openings in the tray for the existing vessels could be reduced to restore gas velocity to the original level.

URS provided estimates of emission rates possible under different conditions. The analyses performed by URS were limited either by increased scaling (the lowest rate of 0.13 lb/MMBtu with three vessels) or lower absorber gas velocity (0.16 lb/MMBtu with four vessels). Since URS did not evaluate addition of a forced oxidation system or any other means to address scaling, it is likely that a significantly lower emission rate than 0.13 lb/MMBtu is possible while using three vessels. And, addition of a fourth scrubber vessel, with tray openings in the three original vessels adjusted to maintain gas velocity, in combination with a forced oxidation system would certainly increase SO$_2$ capture performance even more.

Regardless, if PPL uses the additional scrubber vessel as a spare in a manner similar to that for Colstrip Units 3 and 4, then gas flow will remain unchanged. In this mode of operation, the spare scrubber vessel helps allow for maintenance that is needed due to the scaling caused by the additional lime. Without the spare vessel, the unit must be shut down to perform the maintenance. This is the mode of operation proposed by PPL in their August 2007 submittal.

Comment: Commenters stated that an additional scrubber vessel costs far more than EPA proposed and is therefore not cost-effective. Commenters stated that it was inappropriate for EPA to rely on outdated costs for an additional scrubber vessel in our proposed rule. PPL provided cost estimates obtained from Burns & McDonnell [46] showing higher costs than estimated by EPA.

Response: Foremost, we note that the costs that we cited for an additional scrubber vessel in our proposed rule were costs provided by PPL in their BART submittals of August 2007 and June 2008. PPL did not explain why the cost estimates submitted by PPL during the comment period are more than two

and a half times their original cost estimates.

The cost estimated by Burns & McDonnell of adding a single module to treat 25% of the flue gas is unreasonable, equating to around $213/kW ($71 million divided by 333,000 kW),– or the equivalent of $853/kW when adjusting for the fact that only one fourth of the flue gas is being treated. To put this in perspective, this is more costly on a $/kW basis than the typical cost of a complete limestone forced oxidation wet FGD system (around $500/kW) that would provide over 95% removal for 100% of the flue gas.[47] Also, according to the 2010 EIA Form 860 Enviroequip data, the original scrubber structure with three modules for Colstrip Unit 1 cost $34 million in 1975 (slightly over $100/kW). Using the Chemical Engineering Plant Cost Index (CEPCI) to escalate to 2011 dollars, the cost in today's dollars would be about $109 million ($34 million times 585.7/182.4, or about $327/kW). This would suggest the cost of an additional vessel to be on the order of $27 million, or about 38% of what Burns & McDonnell estimated and consistent with what EPA has previously estimated. Moreover, the difference in cost between EPA's estimate and what Burns & McDonnell has estimated is far too large to be explained by the additional ductwork and fans associated with the retrofit, which PPL asserts are necessary. Additionally, Table 4–1 of the documentation from Burns & McDonnell has several costs that are questionable or high ($900,000 for Owner's Project Management and $400,000 for Owner's Legal Counsel and $3.4 million in Escalation) and others that are very high and therefore require better explanation ($8.1 million for furnish and erect packages plus the estimates for Mechanical, Electrical and Civil and Structural Construction that total over $12 million). Engineering costs as well as many other costs are typically determined as a percentage of the other costs, therefore the effect of overestimation of one cost is compounded because it contributes to overestimation of other costs. Because the estimate by Burns & McDonnell is so much higher than what is reasonably expected and includes several unsubstantiated and questionable cost elements. In any event, an additional scrubber vessel may not be necessary if a forced oxidation system or other means to control scaling is used on the existing three scrubber vessels. PPL may determine that other means may be

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[42] On September 27, 2011 Aaron Worstell and Vanessa Hinkle conducted a site visit at Colstrip.

[43] Staudt memo, p. 4.

[44] Report on the Fourth Scrubber Module Cost Estimate for PPL, Burns and McDonnell, p. 4–3.

[45] Letter from Jonas Klingspor, URS Corporation, to Gordon Criswell, PPL Montana, June 15, 2012.

[46] Burns and McDonnell, p. 1–1.

[47] IPM, Chapter 5, Table 5–4 shows a range of illustrative $/kW costs.

better than adding an additional scrubber vessel in terms of cost or other factors for achieving the BART emission rate.

Comment: Commenters stated that EPA did not properly consider the incremental cost-effectiveness of additional scrubber vessels at Colstrip Units 1 and 2. Commenters stated that while the average cost-effectiveness of lime injection and an additional scrubber vessel is $912/ton, the incremental cost-effectiveness of a scrubber vessel is $2,379/ton, nearly three times higher.

Commenters also stated that it was improper for EPA to evaluate lime injection and an additional scrubber vessel together. Commenters stated that the incremental cost of adding an additional scrubber vessel to lime injection outweighs the benefits. In particular, they noted that use of lime injection alone would cost $1,883,200, while the addition of a scrubber vessel adds $2,217,000 to the total cost. By contrast, they noted that the SO_2 reductions achieved from the addition of the scrubber vessel are 929 tpy, while the use of lime injection alone results in emission reductions of 3,557 tpy.

Response: We agree with this comment in part. We miscalculated the incremental cost effectiveness of an additional scrubber vessel at Colstrip Unit 1 (which we stated to be $1,975/ ton), but not at Colstrip Unit 2 ($2,410/ ton). The correct incremental cost effectiveness for an additional scrubber vessel at Colstrip Unit 1 is $2,380/ton, not $1,975/ton as given in our proposed rule.

However, we disagree that it was improper to evaluate lime injection with an additional scrubber vessel together. We also disagree that cost of the additional scrubber vessel outweighs the benefits. For example, for Colstrip Unit 2, individually the total annual cost of an additional scrubber vessel is $2,210,000, while the emission reduction is 917 tons per year. This results in a cost effectiveness of $2,410, essentially the same as the incremental cost effectiveness between the two control options. The visibility improvement from lime injection alone is 0.225 deciview (at Theodore Roosevelt NP), while the improvement from lime injection with an additional scrubber vessel is 0.280 deciview (at Theodore Roosevelt NP). We continue to find that the cost is reasonable given the visibility benefits and that lime injection with an additional scrubber vessel represents BART.

Comment: PPL commented that in proposing SNCR, EPA appears to rely on its determination that relevant Class I

areas are currently above the Regional Haze Glide Path (RHGP). 77 FR 24,038. The RHGP is an important factor for the reasonable progress goals, but it is not one of the five statutory factors specified for EPA to consider in its BART analysis. Furthermore, as discussed above, there is no incremental benefit in visibility from installation of SNCR that would affect the area improvement in visibility relative to the glide path.

Response: We agree with some aspects of this comment and disagree with others. We agree that the Regional Haze glidepath is not one of the five statutory factors specified for EPA to consider in its BART analysis. We based our decision solely on the five statutory factors.

Comment: EarthJustice stated that EPA settled for minor adjustments for SO_2 pollutants from Colstrip Units 1 and 2 instead of proper BART controls. In particular, EarthJustice stated that EPA failed to examine a full suite of options for SO_2 BART, including replacement of the existing scrubbers with state-of-the-art scrubbers that could remove 98% of the SO_2 from Colstrip Units 1 and 2.

In addition, EarthJustice claimed that EPA failed to consider all feasible upgrades to the existing venturi scrubbers, including the use of magnesium enhanced lime. EarthJustice stated that significant emission reductions could be achieved via these upgrades, even without the installation of an additional scrubber vessel. EarthJustice held that an emission limit of 0.06 lb/MMbtu can be achieved with these upgrades.

Response: We disagree that we should have considered replacement of the existing controls. As noted in our proposed rule, for example:

The Colstrip Unit 1 venturi scrubber currently achieves greater than 50% removal of SO_2. For units with preexisting post-combustion SO_2 controls achieving removal efficiencies of at least 50%, the BART Guidelines state that upgrades to the system designed to improve the system's overall removal efficiency should be considered.

77 FR 24028.

The BART Guidelines only recommend evaluating constructing a new FGD system "[f]or coal-fired EGUs with existing post-combustion SO_2 controls achieving less than 50 percent removal efficiencies." 70 FR 39171. Therefore, it was appropriate for us to not consider new state-of-the art scrubbers, or for that matter, any replacement technology.

As noted in a separate response, we agree that it may not be necessary to add an additional scrubber vessel in order to achieve an emission limit of 0.08 lb/

MMBtu on a 30-day rolling average. We acknowledge that it may be possible to achieve the emission limit with modifications to the existing scrubbers, such as a forced oxidation system or by use of chemical additives that mitigate scaling. However, these alternative approaches would likely be at a lower cost than an additional scrubber vessel. Given that equivalent emission reductions would be achieved at lower costs, the cost effectiveness would be even more reasonable. Accordingly, we are extending flexibility to PPL to meet the emission limit using the lowest cost approach.

Regardless of whether PPL chooses to meet the emission limit with an additional scrubber vessel or modifications to the existing scrubber vessels, we continue to find that an emission limit of 0.08 lb/MMBtu, and not 0.06 lb/MMBtu as suggested by the commenter, is appropriate. As noted in the proposed rule, this is based on the level of performance being achieved by Colstrip Units 3 and 4 which already employ scrubbing systems similar to that being contemplated for Colstrip Units 1 and 2.

The use of MEL is addressed in a separate response to a similar comment from EarthJustice in regard to Colstrip Units 3 and 4.

H. Comments on Corette

Comment: EarthJustice indicated that EPA's decision not to impose BART on Corette violates the statutory requirements for BART and is not supported by the facts. EarthJustice stated that EPA engaged in the same kind of non-BART result oriented process for Corette as it did for Colstrip. They asserted that EPA's approach is no more legitimate or compliant with the haze requirements in the case of Corette. Based on their own BART analyses, they determined that BART for Corette is installation of a dry scrubber and baghouse for the control of SO_2 and PM emissions, and SCR+SOFA for NO_X.

Response: We disagree with this comment. Our selection of BART for Corette was based on our objective consideration of the five statutory factors. We continue to find no additional controls are necessary for Corette. Below, we address specific issues raised by EarthJustice in regard to our BART determination for Corette.

Comment: EarthJustice stated that, as with Colstrip Units 1 and 2, we used an improper baseline in our BART evaluation of 2008–2010. EarthJustice asserted that using these years artificially depresses the emissions baselines, which in turn makes visibility improvement appear less than they

actually are and thereby makes BART alternatives look less cost-effective than they actually are.

Response: See response to similar comments made by EarthJustice in regard to Colstrip Units 1 and 2. Here again, as required by the BART Guidelines, we used a baseline that is reflective of actual operations. We acknowledge that the 2008–2010 emissions for both SO_2 and NO_X were in fact somewhat lower than the long-term trend. For example, the 2000–2010 SO_2 emissions were 3,129 tpy, while the 2008–2010 emissions were 2,723 tpy. Similarly, the 2000–2010 NO_X emissions were 1,748 tpy, while the 2008–2010 emissions were 1,625 tpy. Nonetheless, the difference in the baseline emissions would not have impacted the cost-effectiveness calculations in an appreciable manner.

Comment: EarthJustice stated that EPA understated the cost effectiveness of SCR+SOFA.

Response: See response to similar comment made by EarthJustice in regard to Colstrip Units 1 and 2.

Comment: EarthJustice stated that EPA's cost-effectiveness calculations for SO_2 controls for Corette contain a number of incorrect assumptions. In particular, EarthJustice stated that much lower emission reductions can be achieved with LSD (90% with low sulfur coal) than assumed by EPA. Also, EarthJustice stated that EPA's approach of using IPM for capital costs resulted in a double counting of installation costs.

Response: We disagree. See response to similar comment made by EarthJustice in regard to Colstrip Units 1 and 2.

As we have noted previously, EarthJustice has erred in assuming that a given control efficiency can be achieved in all applications regardless of the input emission rate or other parameters. The level of performance assumed by EPA for LSD (0.065 lb/ MMBtu annually) is generally reflective of what can be achieved with this technology.

Further, we used IPM based calculations for both capital costs and O&M costs for SO_2 controls at Corette. (This is unlike for NO_X controls, where we used IPM based capital costs to reflect recent market trends). Therefore, we could not have double counted the installation costs for SO_2 controls (from IPM and the CCM).

Comment: EarthJustice stated that EPA wrongly exempted Corette from BART for PM.

Response: See response to a similar comment made by EarthJustice in regard to PM BART for Colstrip Units 1 and 2.

Comment: PPL stated that they support our conclusions with respect to BART for Corette that further controls are not justified.

Response: Comment noted. The final FIP does not require additional controls for Corette.

Comment: Commenters stated that they disagree with EPA's cost analysis for NO_X and SO_2 control technologies at Corette and that EPA incorrectly concluded that a number of the control technologies are cost-effective. Commenters noted that PPL submitted a five factor BART analysis for Corette in August 2007, and later supplemented with the analysis with updated information in June 2008 and September 2011.[48] Commenters stated that in view of the information that PPL provided, EPA incorrectly concluded that SOFA, SOFA+SNCR, and SOFA+SCR are "all cost effective technologies" (77 FR 24043) and that the proposed FIP also incorrectly concluded that dry sorbent injection (DSI) for SO_2 is cost-effective at $3,940/ton. 77 FR 24047.

Commenters stated that as documented in PPL's 2011 submissions, the company used the IPM control technology cost estimation techniques, which are more robust than those used in previous BART reports submitted by PPL.[49] Commenters stated that with respect to NO_X, PPL determined the cost-effectiveness of SNCR to be approximately $13,544/ton (as compared to EPA's $2,596 for SOFA+SNCR) and the cost-effectiveness for SCR to be $8,457/ton of additional NO_X controlled (as compared to EPA's $4,491 for SOFA + SCR).[50] The company stated that for SO_2 controls, the updated analysis determined that the cost-effectiveness of DSI is $10,920/ ton (as compared to EPA's $3,940/ ton).[51] Commenters stated that the proposed FIP failed to consider that the installation of DSI would most likely require upgrades to the existing particulate controls to achieve the SO_2 reductions that EPA evaluated and that EPA relied on the outdated and

inaccurate CCM to develop these estimates.

Response: We disagree. See our response to similar comments made by PPL in regard to cost analyses for Colstrip Units 1 and 2. PPL's cost estimates for Corette included many of the same incorrect methods and assumptions that the company used when developing cost estimates for Colstrip Units 1 and 2. In particular, PPL used unsupported retrofit factors that were well in excess of the range described in the IPM documentation.

Also, we disagree that installation of DSI would most likely require upgrades to the existing particulate controls to achieve the SO_2 reductions that EPA evaluated. In fact, DSI using trona would "typically either improve performance or have little impact, even at high injection rates." [52] It would not require the replacement of the existing ESP with a new baghouse as reflected in PPL's cost effectiveness estimate of $10,920/ton.[53] Therefore, we find that EPA's cost estimate of $3,490 is accurate.

Comment: Commenters stated that our proposed SO_2 and NO_X emission limits for Corette were flawed. One commenter stated that EPA must increase the limits to no less than 0.81 lb/MMBtu for SO_2 and 0.46 lb/MMBtu for NO_X in order to account for compliance over a 30-day rolling average. By contrast, another commenter stated that our proposed emission limits were too high and would actually result in increased emissions.

Response: Based on these comments, we have reassessed our SO_2 and NO_X emission limits for Corette. As we have not prescribed any additional controls for Corette, the emission limits should reflect emission rates currently being achieved with existing controls. In order to establish appropriate emission limits, we have conducted a statistical analysis of the monthly emissions data contained in the CAMD emissions system. For the period 2000–2010, the 99th percentile monthly SO_2 emission rate was 0.548 lb/MMbtu. Similarly, the 99th percentile monthly NO_X emission rate was 0.335 lb/MMBtu. In our final action, we are establishing emission limits slightly above these 99th percentile emission rates in order to allow a sufficient margin for compliance. This is because the emission limits must apply at all times,

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[48] NO_X Control Update to PPL Montana's J.E. Corette Generating Station BART Report, September 2011, Prepared for PPL Montana, LLC by TRC, at ES–1 ("NO_X Control Update"); SO_2 Control Update to PPL Montana's J.E. Corette Generating Station BART Report, August 2011, Prepared for PPL Montana, LLC by TRC, at ES–1 ("SO_2 Control Update")

[49] See NO_X Control Update to PPL Montana's J.E. Corette Generating Station BART Report, September 2011, Prepared for PPL Montana, LLC by TRC, at ES–1 ("NO_X Control Update"); SO_2 Control Update to PPL Montana's J.E. Corette Generating Station BART Report, August 2011, Prepared for PPL Montana, LLC by TRC, at ES–1 ("SO_2 Control Update").

[50] NO_X Control Update, at ES–3.

[51] SO_2 Control Update, at 14.

[52] United Conveyer Corporation Dry Sorbent Injection FAQ (*http://unitedconveyor.com/ dsi_systems/*).

[53] Ref 2: SO_2 Control Update to PPL Montana's J.E. Corette Generating Station BART Report, Prepared for PPL Montana, LLC, by TRC, August 2011, p. ES–2.

including during startup, shutdown, and malfunction. The revised emission rates are 0.57 lb/MMBtu for SO_2 and 0.35 lb/MMBtu for NO_X, both on a 30-day rolling average. We have revised the emission limits for Corette contained in section 52.1396(c)(1) accordingly. Our complete analysis of SO_2 and NO_X emission limits for Corette can be found in the docket.0.5480.3350.57 We have addressed the emission limit for PM at Corette in a separate response to comments.

Comment: PPL stated that EPA's PM emission limit for Corette was flawed. PPL noted that over the past five years, stack test results have shown that PM emissions have ranged from 0.059 lb/MMBtu to 0.252 lb/MMBtu. PPL stated that an emission limit of 0.30 lb/MMBtu would be necessary to account for a 30-day rolling average.

Response: We agree, in part. In our proposed rule, we incorrectly specified a PM emission limit of 0.10 lb/MMBtu on a 30-day rolling average. In consideration of the stack test data provided by PPL, we have determined that that a limit of 0.26 lb/MMBtu is more appropriate. In addition, and as discussed in response to a similar comment made by PPL in regard to Colstrip, we find that it is not feasible to require compliance with this emission limit on a 30-day rolling average. Again, this is because compliance is shown using stack methods such as Method 5 and 5B. These stack test methods typically consist of three sampling runs of at least 120 minutes in duration, and are not long-term continuous measurements. As such, it is not possible to average the emissions over 30 days or a year.

Accordingly, we are revising our FIP to reflect a PM emission limit for Corette of 0.26 lb/MMBtu. We are also removing the 30-day averaging period requirement for the PM emission limit at Corette. More specifically, we are revising section 52.1396(c)(1) to clarify that emission limits for NO_X and SO_2, but not PM, shall apply on a 30-day rolling average. Note that we are retaining the requirement that compliance with the PM emission limit shall be monitored in accordance with the CAM plan.

As we are not requiring that the PM emission limit applies on a 30-day rolling average, PPL's suggestion that the emission limit be increased to 0.30 lb/MMBtu is no longer relevant.

Comment: The USFWS commented that there are at least two other similarly-sized installations implementing lime spray drying (LSD) for SO_2 control that justify the positions taken by EPA in the proposed BART determination. USFWS stated that in

justifying emission limits of small units burning clean coal, Newmont Nevada is a 200 MW plant that attains a 30-day rolling average 0.065 lb/MMBtu SO_2 emission limit with an SO_2 control efficiency of 93.1% and that capital cost of LSD units is corroborated by Great River Energy's 188 MW Stanton #1 plant costing $79,514,000.

Response: We acknowledge that the USFWS has provided information from two other similarly-sized installations which are implementing LSD for SO_2 corroborating our LSD cost estimates for Corette. However, as noted in our proposed rule, the cost of controls is not justified by the visibility improvement (0.253 deciview).

Comment: The USFWS stated that the capital costs proposed by EPA for dry sorbent injection (DSI) and LSD should be considered as maximums, because the costs should only decrease due to significant curtailment of construction of air pollution control devices during the economic downturn and cancellation or postponement of many coal burning electrical generation units. The USFWS stated that quantified estimates of the decreases could provide for firm reductions in the capital cost estimates, but it is agreed that they would be difficult to affirm with confidence at this time.

Response: We agree that any changes in cost associated with economic downturn would be difficult to affirm with confidence at this time.

Comment: The USFWS stated that the paragraph following Table 123 states that EPA considers $4,659 per ton of SO_2 emissions reduction using DSI as reasonable, but that $5,442 per ton for LSD is not cost effective. The USFWS stated that other proposed SO_2 BART determinations resulting in cost efficiency in the range of Corette include PacifiCorp's Dave Johnston, WY–$4,743; Northshore Mining's Silver Bay Power, MN–$7,309 and Xcel Energy's Taconite Harbor, MN–$5,300 and as stated above, the capital cost of an LSD unit on Great River Energy's 188 MW Stanton #1 plant is $79,514,000. USFWS stated that such a total capital cost incorporated as the cost of LSD at Corette would result in a cost per ton of SO_2 removed of $4,891 and that the LSD alternative might then also be considered by EPA as being cost effective along with DSI.

Response: We disagree. We continue to find that the cost of LSD for Corette is not justified by the visibility improvement. Moreover, the capital cost that we estimated for LSD is specific to Corette, and we see no reason to supplant that cost with costs from

Taconite Harbor or other individual facilities.

Comment: The USFWS stated that regarding the cost-effectiveness of visibility improvement for SO_2 controls, the second paragraph after Table 123 in the draft proposed BART determination states, " * * * the cost of controls is not justified by the visibility improvement" and that this proposed conclusion warrants further scrutiny. The USFWS stated that implementation of the DSI alternative results in a 0.176 deciview improvement at Washakie WA, the highest impacted Class I area, at a cost of $3.4 million per deciview of improvement and that this is a very reasonable cost for visibility improvement. The UFWS stated that the cost of visibility improvement for SO_2 controls proposed in other BART determinations for a single most-impacted Class I area include: Colorado Springs Utilities, Martin Drake, CO–$49.9 million/deciview; PacifiCorp, Wyodak, WY–$44.7 million/deciview; PacifiCorp, Jim Bridger, WY–$37.1 million/deciview; PG&E, Boardman, OR–$35.2 million/deciview; and Dominion, Brayton Point, MA–$33.9 million/deciview; Northshore Mining, Silver Bay Power, MN–$26.2 million/deciview; Dominion, Salem Harbor, MA–$25.1 million/deciview; Great River Energy, Stanton #1, ND–$21.9 million/deciview; PacifiCorp, Naughton, WY–$18.2 million/deciview; PacifiCorp, Dave Johnson, WY–$16.7 million/deciview. The USFWS stated that the conclusion from the above is that since the cost per ton of SO_2 removal and the cost per deciview of visibility improvement are both reasonable, DSI should be considered as a feasible and cost-effective SO_2 control alternative and be accepted as BART for the PPL Montana, J.E. Corette Generating Station.

Response: We disagree. The total annual cost of DSI for Corette, as cited in our proposed rule was $5,363,896, while the greatest visibility improvement was 0.176 deciview (Washakie WA). This results in cost of $30 million per deciview, not $3.4 million per deciview. We continue to find that the cost of LSD for Corette is not justified by the visibility improvement.

Comment: The USFWS commented that Table 110 states the visibility improvement associated with each of the three NO_X control alternatives and by dividing respective Total Annual Costs by their visibility improvements, they result in cost per deciview of visibility improvement from $16.7 million to $17.8 million at the Washakie WA, the highest impacted Class I area.

The USFWS stated that when these values are compared to other single Class I area impacts for some other NO$_X$ BART proposals as summarized below, it would indicate that they each could be considered as reasonable. The USFWS stated that when total annual cost for each of the three NO$_X$ control alternatives is divided by the respective visibility improvement for all affected Class I areas (as discussed above for SO$_2$) they result in cost per deciview of visibility improvement from \$4.7 million to \$5.0 million, which is a very reasonable visibility cost. USFWS stated that since the cost per ton of NO$_X$ removal and the cost per deciview of visibility improvement are both reasonable, at least the Separated Over-fire Air (SOFA)-only or, preferably SOFA plus Selective Non-Catalytic Reduction (SNCR) should definitely be considered as feasible and cost-effective NO$_X$ control alternatives and be accepted as BART for Corette.

Response: We disagree that SOFA or SOFA+SNCR should be accepted as BART for Corette. The BART Guidelines require that cost effectiveness be calculated in terms of annualized dollars per ton of pollutant removed, or \$/ton. 70 FR 739167. The BART Guidelines list the \$/deciview ratio as an additional cost effectiveness metric that can be employed along with \$/ton for use in a BART evaluation. However, we did not use this metric for the reasons that were explained in other responses. As we stated in the proposed FIP, we weighed costs against the anticipated visibility impacts and we explained that any of the control options would have a positive impact on visibility; however, the cost of controls was not justified by the visibility improvement. As we have explained elsewhere, in our proposal, we considered the visibility improvement at all Class I areas within 300 km of the subject BART unit.

In addition, we note that the UFWS seems to have miscalculated the dollars per deciview values for the NO$_X$ control options.

Comment: The USFS stated the BART determinations for Corette are not consistent with previous BART demonstrations that have been made for other facilities in Montana, as well as with decisions EPA has approved in other SIPs. And that EPA has identified control options for both NO$_X$ and SO$_2$ that are technically feasible and cost effective. USFS stated that it is their understanding that EPA has also determined that the visibility improvement does not justify the cost of the additional controls.

Response: We disagree. As the commenter has noted, we rejected additional controls for Corette since the visibility improvement does not justify the cost of controls. Moreover, the USFWS has not identified how this is inconsistent with other BART determinations in Montana or elsewhere.

Comment: WEG stated that EPA arbitrarily rejected requiring SCR as BART for NO$_X$ emissions from Corette and that we stated in the proposed FIP that the control technology would be cost-effective and achieve greater visibility benefits—in favor of no additional controls. WEG stated that the EPA's proposed BART determination is inconsistent with the CAA and the Agency's own record. WEG stated that that under the factors required to be considered by EPA in determining BART under the CAA, SCR would constitute BART. WEG stated that EPA found that SCR for Corette would not be cost-prohibitive and that the Agency also identified no energy and nonair quality impacts that would mitigate against the use of SCR, or any remaining useful life issues that would preclude the use of SCR. WEG stated that with regard to visibility improvement, the EPA further found that SCR, as opposed to doing nothing, would achieve greater visibility improvements and that given that SCR represents ''the best system of continuous emission control technology available'' (40 CFR 51.308(e)(1)(ii)), there appears to be no reason to dismiss SCR as BART for Corette. WEG stated that the EPA asserted that SCR for Corette ''is not justified by the visibility improvement.'' Yet, the proposed FIP indicates that with the use of SCR, visibility improvements in the most impacted Class I area, the Washakie WA, would be 264%, an enormous improvement from current conditions. WEG stated that SCR would have a visibility improvement of 0.264 deciview and that SCR would reduce visibility impairment at seven different Class I areas, and that SCR would cumulatively improve visibility amongst the seven impacted Class I areas by 0.939 deciview. 77 FR 24042.

WEG stated that such cumulative visibility improvements do not appear to be unreasonable, but that in this case, the EPA appears to believe that the level of visibility improvement is not significant enough to justify the use of SCR. WEG stated that the proposed FIP provides no information or analysis to indicate that EPA's belief is not anything more than an arbitrary claim and that there is no explanation as to why the EPA believed the level of improvement with the use of SCR was

somehow discountable or insignificant. WEG stated that the EPA's logic is further belied by the fact that the FIP will fail to achieve meaningful reasonable progress in attaining natural visibility conditions in Class I areas in Montana and that given the prospect of such dismal progress in achieving natural visibility, it is reasonable to presume that any improvement in visibility, no matter how small, would be significant. WEG stated that the EPA failed to provide any information or analysis in the proposed FIP or the supporting record suggesting otherwise. WEG stated that although it is true that EPA is allowed to consider the degree in improvement in visibility in determining BART, there is no indication that this factor could be interpreted to allow the Agency to make arbitrary determinations that a 264% improvement in visibility under a plan that already contains unreasonable RPGs is insignificant or otherwise not worthy of regulatory action under the CAA's regional haze program.

Response: We disagree. We did not arbitrarily reject SCR. Our proposal clearly laid out the bases for our proposed BART determination for NO$_X$ for Corette. Our regulations define BART as an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and nonair quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. The BART analysis identifies the best system of continuous emission reduction taking into account:

(1) The available retrofit control options, (2) Any pollution control equipment in use at the source (which affects the availability of options and their impacts), (3) The costs of compliance with control options, (4) The remaining useful life of the facility, (5) The energy and nonair quality environmental impacts of control options (6) The visibility impacts analysis. 70 FR 39163.

As the final BART Guidelines explain, both the 2001 proposal and the 2004 reproposal requested comments on two options for evaluating the ranked options. The first option was similar to

the process that WEG implies should have been followed, where the most stringent control option must be chosen as long as it does not impose unreasonable costs of compliance or energy and nonair quality environmental impacts would justify selection of an alternative control option. 70 FR 39130. The second option was:

An alternative decision-making approach that would not begin with an evaluation of the most stringent control option. For example, States could choose to begin the BART determination process by evaluating the least stringent technically feasible control option or by evaluating an intermediate control option drawn from the range of technically feasible control alternatives. Under this approach, States would then consider the additional emissions reductions, costs, and other effects (if any) of successively more stringent control options. Under such an approach, States would still be required to (1) display all of the options and identify the average and incremental costs of each option; (2) consider the energy and nonair quality environmental impacts of each option; and (3) provide a justification for adopting the technology selected as the ''best'' level of control, including an explanation of its decision to reject the other control technologies identified in the BART determination.

In the final guidelines, EPA ''decided that States should retain the discretion to evaluate control options in whatever order they choose, so long as the State explains its analysis of the CAA factors.'' 70 FR 39130. The BART Guidelines state that we ''have discretion to determine the order in which you should evaluate control options for BART'' and that we ''should provide a justification for adopting the technology that you select as the ''best'' level of control, including an explanation of the CAA factors that led you to choose that option over other control levels.'' 70 FR 39170.

We explained our analysis of the five factors and explained that the CAA factors that led to our decision were cost-effectiveness and visibility improvement. The cost-effectiveness of SOFA + SCR was determined to be $4,491/ton and the visibility improvement at the most impacted Class I area, Washakie WA, was 0.264 deciview. The impact at additional Class I areas was shown in Tables 123 and 124. 77 FR 24042. When we weighed the costs against the anticipated visibility improvement for Corette the cost of controls was not justified by the limited visibility improvement. 77 FR 24043.

With regard to WEG's claim that SCR would result in a visibility improvement of 264%, WEG used a fundamentally flawed approach to calculate visibility improvements. Using WEG's approach, a 0.1 deciview change would produce a 1000% improvement in visibility compared to a 0.01 deciview change. In fact, the change would be 0.09 deciview or about 1% relative to natural visibility conditions. The approach that WEG used to calculate percent visibility improvement is mathematically incorrect. WEG compared a 0.264 deciview change to a zero deciview change and arbitrarily called this a 264% improvement in visibility. To get a more accurate estimate, you can use the rule of thumb that 0.5 deciview is approximately equivalent to a 5% change in perceived visibility. The 0.264 deciview change would be approximately a 2.6% improvement in visibility relative to natural visibility conditions. WEG makes the same mistake on page 3 in the comment on Colstrip where they state: ''with the use of SCR, visibility improvements in the most impacted Class I areas would be around 50% greater than with the use of SNCR.'' Here they compared 0.784 deciview with SCR to 0.518 deciview with SNCR, and concluded that SCR provides a 50% visibility improvement over SNCR. Again, using the rule of thumb, this would be about a 2.6% difference in perceived visibility between SCR and SNCR relative to natural visibility conditions.

The BART Guidelines state that to make the net visibility improvement determination you should, ''assess the visibility improvement based on the modeled change in visibility impacts for the pre-control and post-control emission scenarios. 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.'' 70 FR 39170. The BART Guidelines also state that, ''Comparison thresholds can be used in a number of ways in evaluating visibility improvement (e.g. the number of days or hours that the threshold was exceeded, a single threshold for determining whether a change in impacts is significant, or a threshold representing an x percent change in improvement.'' 70 FR 39170. Our proposal shows the baseline visibility impact in deciviews, the visibility improvement in deciviews, the number of Class I areas impacted within 300 km, and fewer days impacted more than 0.5 deciview in Tables 123 and 124 and these are more appropriate metrics for evaluating visibility impact.

We disagree with WEG's statement that the FIP will fail to achieve meaningful reasonable progress in attaining natural visibility conditions in Class I areas in Montana and that given the prospect of such dismal progress in achieving natural visibility, it is reasonable to presume that any improvement in visibility, no matter how small, would be significant. We have explained in other responses that 40 CFR 51.308(d)(1)(ii) states that, ''if the State establishes a reasonable progress goal that provides for a slower rate of improvement in visibility that the rate that would be needed to attain natural conditions by 2064, the State must demonstrate, based on the factors in paragraph (d)(1)(i)(A) of this section, that the rate of progress for the implementation plan to attain natural conditions by 2064 is not reasonable; and that the progress goal adopted by the State is reasonable. The State must provide the public for review as part of its implementation plan an assessment of the number of years it would take to attain natural conditions if visibility improvement continues at the rate of progress selected by the State as reasonable.'' We explained in other responses how we have met those requirements.

I. Comments on Reasonable Progress and Long Term Strategy

Comment: A commenter stated that based on the WRAP emissions inventory and air quality modeling, EPA proposed reasonable progress goals for the 20% worst visibility days for the Montana Class I areas that are significantly less (16–51%) than the uniform rate of progress by 2018 and that no Montana Class I area is projected to achieve natural visibility conditions by 2064. The commenter stated that EPA projects that, at best, the national goal will not be met for 135 years at Cabinet Mountains WA and, at worst, for 437 years at the Medicine Lake WA.

The commenter stated that the WRAP inventory indicates that point sources contribute 71% of Montana's total SO_2 emissions, yet point source SO_2 emissions in Montana are projected to be reduced by less than 1% by 2018 (this includes SO_2 reductions for BART for Colstrip Units 1 and 2). This change in point source emissions inventory is considerably less than projected by other states in Region 8, yet EPA has determined that no additional SO_2 controls are reasonable. The commenter stated that the WRAP inventory projects that point source NO_X emissions would be reduced by 3% (23,000 tons per year), primarily due to estimated NO_X reductions at Colstrip and that EPA's RP analyses determined that $282 per ton for NO_X reduction at Devon Energy was cost effective, but NO_X controls for all

other facilities were not cost effective. Several controls were below the cost of $4,659 for SO_2 controls at Corette Generating Station that EPA determined were cost effective for BART. Given the lack of progress in improving visibility at the Class I areas, EPA needs to reconsider the cost effectiveness of point source SO_2 and NO_X controls.

Response: We disagree that we should reconsider the cost effectiveness of point source controls given the lack of progress in improving visibility at the Class I areas. In determining the measures necessary to make reasonable progress and in selecting RPGs for mandatory Class I areas within Montana, we took into account the following four factors into consideration: costs of compliance; time necessary for compliance; energy and nonair quality environmental impacts of compliance; and remaining useful life of any potentially affected sources. CAA section 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A). In the FIP, we demonstrated how these four factors were considered. 40 CFR 51.308(d)(1)(ii) allows for a slower rate of improvement in visibility than the URP, as long as it is demonstrated that based on these four factors, it is not reasonable to achieve the URP and that the selected RPG is reasonable. CAA section 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A). We respond to specific critiques of our four-factor analyses elsewhere. To the extent that the commenter is stating that cost-effectiveness is a fixed value and must be the same whether a source is subject to BART or RP, we disagree. While the Regional Haze Rule may allow us to establish a bright line for some of the factors such as cost-effectiveness and visibility, we are not required to do so, and have not done so for this action.

Comment: A commenter stated that oil and gas development has increased markedly in Montana and neighboring states since the initial inventory projections provided by the WRAP in 2007 and that EPA should compare the most recent (Phase III) oil and gas emissions inventory to that used in the WRAP source apportionment modeling and discuss the implications of future oil and gas development for visibility at Montana Class I areas.

Response: We disagree that we should reevaluate the oil and gas inventory and discuss the implications of future oil and gas development for visibility at Montana Class I areas at this time. 40 CFR 51.308(d)(3)(iii) requires us to document the technical basis, including modeling, monitoring and emissions information on which we relied. It also requires that we identify the baseline emission inventory on which our

strategies are based. As stated in the proposal, an emissions inventory for each pollutant was developed by WRAP for Montana and these inventories were used as inputs to photochemical modeling that was used to determine the 2018 reasonable progress goal. 77 FR 24047 and 77 FR 24054. 40 CFR 51.308(d)(3)(iii) allows us to rely on the technical analysis developed by the WRAP, which we have done. We recognize that emission inventories are dynamic, but at this time it is not necessary to reevaluate the emission inventories. The Regional Haze Rule recognizes the need for periodic progress evaluation and requires progress reports to be submitted every five years. 40 CFR 51.308(g)(4) requires this report to include, "[A]an analysis tracking the change over the past five years in emissions of pollutants contributing to visibility impairment from all sources and activities within the state." As we explained in our proposal, we will update the statewide emissions inventories periodically or as necessary and review emissions information from other states and future emissions projections.

Comment: MDEQ stated that EPA fails to consider the potential benefits of the Mercury Air Toxics Standard, the new NO_X and SO_2 NAAQS, the forthcoming Boiler MACT, and other rules that will significantly impact $PM_{2.5,}$ SO_2 and NO_2 emissions in its LTS.

Response: We are sensitive to the challenges of coordinating compliance with a variety of rules. However, to the extent that MDEQ is implying that we should have considered the potential benefits of possible future regulations in our LTS, we disagree. As explained in our proposed FIP, in order to establish RPGs for the Class I areas in Montana and to determine the controls needed for the LTS, we followed the process established in the Regional Haze Rule. The anticipated visibility improvement in 2018 in all Montana Class I areas accounting for all existing enforceable federal and state regulations already in place was considered. 77 FR 24055. With regard to regulations that are not yet final, we cannot speculate on unknown reductions from anticipated future federal or state regulations prior to those actions completing the full regulatory process. None of the Montana sources have notified us that they will be reducing emissions as a result of future regulation and we have no basis for estimating what those emissions may be. Without an enforceable commitment, we cannot assume that additional reductions will be achieved and we cannot account for them in our LTS for the Regional Haze FIP. MDEQ

has not provided information to indicate that anything in the Regional Haze FIP will interfere with the requirements of other regulations. In fact, where additional controls are required, we would expect that the lower emission limit would make it easier to comply with future regulations that also require lower emission limits. We note that the Regional Haze FIP requires compliance with a specific emission limit and not necessarily the installation of a specific control technology and that sources have a full five years after the finalization of the FIP to comply with any emission limit that would require the installation of additional control technology.

Comment: MDEQ suggested that we include all smoke emissions from open burning and wildfires in the natural background estimates and recalculate URP and RPGs in each of the State's Class I areas with these adjusted background levels. MDEQ perceived fire to be the major contributing factor to the State's visibility impairment, and claimed that EPA does not make a realistic allowance for smoke contributions to haze in Montana.

Response: We agree that industrial facilities are not the only causes of haze, but we disagree that we should make adjustments to the inventories, the URP, or the RPGs. Our action considered the many contributors to haze including industrial facilities. It is not appropriate to consider open burning as natural background because open burning is anthropogenic. In our proposal, the emissions inventory appropriately included natural (non-anthropogenic) wildfire and anthropogenic sources such as open burning. 77 FR 24093. In developing a LTS, 40 CFR 51.308(d)(3)(iv) requires us to consider all anthropogenic sources. More specifically, 40 CFR 51.308(d)(3)(v)(E) requires the LTS to address smoke management techniques for agricultural and forestry management techniques. We note that our proposed action also proposed to approve the revisions to the paragraph titled "Smoke Management" of Title 17, Chapter 8, Subchapter 6, Open Burning as meeting the requirement in 40 CFR 308(d)(3)(v)(E) because the plan control emissions from these sources by requiring BACT and takes into consideration the visibility impacts on mandatory Class I areas.

Regardless of the contribution from smoke emissions, 40 CFR 51.308(d)(3)(iv) states, "The State must identify all anthropogenic sources of visibility impairment considered by the State in developing its long-term strategy. The State should consider major and minor stationary sources,

mobile sources, and area sources.'' In this case, we acted in the place of Montana and were required to abide by the same requirement to consider point sources. 40 CFR 51.308(d)(1)(ii) states that, ''if the State establishes a reasonable progress goal that provides for a slower rate of improvement in visibility that the rate that would be needed to attain natural conditions by 2064, the State must demonstrate, based on the factors in paragraph (d)(1)(i)(A) of this section, that the rate of progress for the implementation plan to attain natural conditions by 2064 is not reasonable; and that the progress goal adopted by the State is reasonable. The State must provide the public for review as part of its implementation plan an assessment of the number of years it would take to attain natural conditions if visibility improvement continues at the rate of progress selected by the State as reasonable.'' In this case, we are acting in the place of Montana. In determining the measures necessary to make reasonable progress and in selecting RPGs for mandatory Class I areas within Montana, we evaluated major and minor point sources according to the four factors required by 40 CFR 51.308 (d)(1)(i)(A) (costs of compliance; time necessary for compliance; energy and nonair quality environmental impacts of compliance; and remaining useful life of any potentially affected sources CAA section 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A)). In addition, 40 CFR 51.308(e) requires states to make a BART determination for each BART-eligible source and in that determination, the state must consider the five statutory factors.

The requirements of 40 CFR 51.308(d)(3)(iv) and 40 CFR 51.308(e) are not dependent on the showing of a certain amount of impairment from point sources.

EPA recognized that variability in natural sources of visibility impairment causes variability in natural haze levels as described in its ''Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule.'' [54] The

preamble to the BART Guidelines (70 FR 39124) describes an approach used to measure progress toward natural visibility in Mandatory Class I areas that includes a URP toward natural conditions for the 20% worst days and no degradation of visibility on the 20% best days. The use of the 20% worst natural conditions days in the calculation of the URP takes into consideration visibility impairment from wild fires, windblown dust and other natural sources of haze.[55] 70 FR 39124. The Guidance for Estimating Natural Visibility Conditions also discusses the use of the 20% best and worst estimates of natural visibility, provides for revisions to these estimates as better data becomes available, and discusses possible approaches for refining natural conditions estimates.[56]

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

Comment: MDEQ insisted that visibility issues in the Western U.S. are less stationary source driven than in the Eastern U.S., and that greater understanding of this difference has developed since Congress passed the Visibility Protection Act of 1977 and the visibility statute of the CAA Amendments of 1990.

Response: To the extent that MDEQ is implying that we are not required to analyze controls for stationary sources,

we disagree. As explained in other responses, 40 CFR 51.308(d)(3)(iv) requires us to identify all anthropogenic sources of visibility impairment considered in developing our long term strategy. It specifically states that we should consider major and minor stationary sources, mobile sources, and area sources. Please see the language of 40 CFR 51.308(e) in the response to the previous comment. The requirements of 40 CFR 51.308(d)(3)(iv) and 40 CFR 51.308(e) are not dependant on the showing of a certain amount of impairment from point sources.

Comment: A commenter stated that BART sources such as Corette should also be considered under reasonable progress and that this would be consistent with actions EPA has approved in other SIPs. The commenter stated that EPA is using visibility improvement as measured by Q over D values as an indirect measure of the benefit of additional controls under reasonable progress and that it is their understanding that this is not supported under the Regional Haze Rule as reasonable progress decisions do not consider visibility improvement. The commenter requested that control options considered technologically feasible and cost effective under BART also be considered under reasonable progress.

Response: We disagree that BART sources need to be re-evaluated for the purposes of reasonable progress and that, under the Regional Haze Rule, reasonable progress determinations may not consider visibility improvement. Our RP Guidance states, ''Since the BART analysis is based, in part, on an assessment of many of the same factors that must be addressed in establishing the RPG, it is reasonable to conclude that any control requirements imposed in the BART determination also satisfy the RPG-related requirements for source review in the first RPG planning period. Hence you may conclude that no additional emissions controls are necessary for these sources in the first planning period.'' [57] The EPA has concluded that, based on the similarity of many of the same factors for both BART and reasonable progress, that no additional emissions controls are necessary for BART sources for this planning period. The commenter has given us no basis to change that conclusion: Regardless of whether any states have chosen to reevaluate BART sources for reasonable progress, the

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

the purpose of this guidance and implementation of the regional haze program, natural visibility conditions represents a long-term average condition analogous to the 5-year average best- and worst-day conditions that are tracked under the regional haze program.''

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

[56] Guidance for Estimating Natural Visibility Conditions, p.3–1 to 3–4.

[57] Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program, U.S. Environmental Protection Agency, (''Reasonable Progress Guidance'') (June 1, 2007) p.4–2—4–3.

Regional Haze Rule does not require states to do so. With regard to the statement about using visibility improvement to evaluate additional controls under reasonable progress, EPA's reasonable progress guidance states: "In determining reasonable progress, CAA section 169A(g)(1) requires States to take into consideration a number of factors. However, you have flexibility in how to take into consideration these statutory factors and any other factors that you have determined to be relevant." [58] The potential reduction in quantity over distance (Q/D) is a factor that we consider to be relevant because the goal of the Regional Haze Rule is to improve visibility. The commenter has not cited any authority supporting the position that visibility improvements may not be considered in reasonable progress determinations and therefore has given us no basis to change our use of this factor.

Comment: A commenter stated that the proposal fails to achieve reasonable progress. The commenter explained that the proposal will leave visibility in the parks and WAs that are affected by Montana sources impaired for hundreds of years into the future, nonetheless, we propose no additional emission reductions from Montana's stationary sources.

Response: We disagree that the FIP fails to achieve reasonable progress. 40 CFR 51.308(d)(1)(ii) states:

If the State establishes a reasonable progress goal that provides for a slower rate of improvement in visibility than the rate that would be needed to attain natural conditions by 2064, the State must demonstrate, based on the factors in paragraph (d)(1)(i)(A) of this section, that the rate of progress for the implementation plan to attain natural conditions by 2064 is not reasonable; and that the progress goal adopted by the State is reasonable. The State must provide the public for review as part of its implementation plan an assessment of the number of years it would take to attain natural conditions if visibility improvement continues at the rate of progress selected by the State as reasonable.

In determining the measures necessary to make reasonable progress and in selecting RPGs for mandatory Class I areas within Montana, we took into account the following four factors into consideration: Costs of compliance; time necessary for compliance; energy and nonair quality environmental impacts of compliance; and remaining useful life of any potentially affected sources. CAA section 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A). In the FIP, we demonstrated how these four factors

were considered and we also provided, in Table 197, an assessment of the number of years it would take to attain natural conditions if visibility improvement continues at the rate of progress that we selected was reasonable. We respond to specific critiques of our four-factor analyses elsewhere.

Comment: A commenter stated that EPA failed to evaluate controls on all BART-subject sources to meet reasonable progress requirements and that EPA stated that the BART analyses for these facilities are similar to the requisite reasonable progress analysis. 77 FR at 24059. The commenter stated that EPA has ensured that Montana will not achieve reasonable progress toward natural visibility conditions at Class I areas affected by Colstrip and Corette and that EPA's approach is flawed legally and factually. The commenter stated that EPA's approach fails to distinguish between the purposes of BART and the long-term strategy under the Regional Haze Rule and that while both are mechanisms to help states achieve reasonable progress, BART is applied to a given source—for the purpose of eliminating or reducing visibility impairment caused or contributed to by that source. 42 U.S.C. section 7491(b)(2)(A). The commenter stated that rather than focusing on specific sources, the development of a long-term strategy requires EPA to look at existing visibility impairment—after emissions reductions due to BART and other strategies are accounted for—and attribute responsibility for eliminating that impairment among sources and categories. 40 CFR 51.308(d)(1). The commenter stated that in this way, the states and EPA maintain flexibility to determine the most effective and efficient way to eliminate haze pollution when technology mandates on specified sources have not done the job. The commenter stated that therefore, measures within a long-term strategy are required to achieve reasonable progress above and beyond BART and that by categorically eliminating all BART-subject sources from its reasonable progress analysis, EPA has failed to meet its obligation to determine whether emissions reductions from these sources beyond those required by BART are necessary to achieve the national goal of eliminating visibility impairment.

Response: We disagree that BART sources need to be re-evaluated for the purposes of reasonable progress. Our reasonable progress guidance states:

Since the BART analysis is based, in part, on an assessment of many of the same factors that must be addressed in establishing the RPG, it is reasonable to conclude that any

control requirements imposed in the BART determination also satisfy the RPG-related requirements for source review in the first RPG planning period. Hence you may conclude that no additional emissions controls are necessary for these sources in the first planning period.[59]

The commenter has given no reason for us to change this position.

Comment: A commenter stated that EPA's approach essentially duplicates all of the errors from its BART analysis in its reasonable progress analysis and that in particular, EPA's incremental visibility justification for dismissing the most stringent pollution control technologies is especially inappropriate in the reasonable progress framework. The commenter stated that incremental visibility improvement is not included among the four factors to be considered in establishing reasonable progress measures. 40 CFR 51.308(d)(1)(i)(A). The commenter stated that if this justification is applied to eliminate the most effective pollution-reduction measures at every source—especially the largest and oldest sources that are subject to BART—then Montana may never make reasonable progress toward achieving natural visibility conditions.

Response: We disagree that there are errors in our approach for BART and reasonable progress for the same reasons we have discussed previously. Pursuant to 40 CFR 51.308(e)(A) for our BART analyses, we considered the following five factors in our analysis: The appropriate level of BART control; the cost of compliance; the energy and nonair quality environmental impacts; any pollution control equipment in use at the source; the remaining useful life of the source; and the degree of improvement which may be reasonably anticipated to result from the use of such technology. We agree that visibility improvement is not one of the four factors required by CAA section 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A), however, it (along with other relevant factors) can be considered when determining controls that should be required for reasonable progress. Our reasonable progress guidance states: "In determining reasonable progress, CAA section 169A(g)(1) requires States to take into consideration a number of factors. However, you have flexibility in how to take into consideration these statutory factors and any other factors that you have determined to be relevant." [60] For certain potentially affected sources, we considered Q/D and potential reductions in Q/D, which are relevant to

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[58] Reasonable Progress Guidance, p.5–1.

[59] Reasonable Progress Guidance, p. 4–2—4–3.
[60] Reasonable Progress Guidance, p. 5–1.

the goal of the Regional Haze Rule, improving visibility.

Comments: A commenter stated that EPA failed to require that Colstrip Units 1 and 2 and Corette make emissions reductions that were relied upon by the WRAP, EPA, and states neighboring Montana in establishing reasonable progress goals, and that if EPA fails to revise its BART determinations for Colstrip Units 1 and 2 and Corette, EPA must require additional reductions of visibility-impairing pollutants in its long-term strategy. Another commenter stated that EPA should have required SCR+SOFA as BART for Colstrip Units 1 and 2 and should have required SOFA+SCR and a dry scrubber/baghouse for Corette, but even if EPA were to justify its contrary BART finding in response to these comments, EPA should have required SCR+SOFA and a dry scrubber/baghouse at these units as part of its long term strategy. The commenter explained that where sources within a state contributes to visibility within another state's Class I area or areas, the state has an obligation to adopt controls necessary to ensure it achieves its share of the pollution reductions that are required to meet the reasonable progress goals set for the subject Class I area.

Response: We do not agree that we must revise our BART determinations for Colstrip Units 1 and 2 and Corette. We have stated in other actions addressing regional haze that a plan that provides for emission reductions consistent with the assumptions underlying the WRAP modeling will ensure that a State is not interfering with measures designed to protect visibility in other states. See e.g. 76 FR 491, 496–497 (Jan. 5, 2011). Similarly, a plan that is consistent with the assumptions underlying the modeling used to establish RPGs in a state likely will include the measures necessary to achieve those RPGs. However, there is no requirement that a SIP (or FIP) adopt the assumptions underlying the models as enforceable requirements. The air quality models used to support the regional haze SIPs are extremely complex, and due to the time consuming nature of performing the modeling, this work was performed early in the process. The emissions projections by the RPOs, relied upon in the air quality modeling, incorporated the best available information at the time from the states, and utilized the appropriate methods and models to provide a prediction of emissions from all source categories into the future. There is an inherent amount of uncertainty in the assumed emissions from all sources, including emissions

from BART-eligible sources, as the final control decisions by all of the states were not yet complete. The WRAP used their best estimates of what regional haze SIPs would achieve as inputs for the modeling. In the end, reductions resulting from BART determinations based on the statutory factors may differ from those estimates.

One relevant requirement cited by the commenter, at 40 CFR 51.308(d)(3)(ii), is that EPA must demonstrate that it has included all measures necessary to obtain its share of the emission reductions needed to meet the RPGs for Class I areas where it causes or contributes to impairment. Montana's neighboring Class I states originally set the reasonable progress goals in their SIP based on emission reductions expected to be achieved through application of presumptive BART and other emission reductions qualified for that purpose. These neighboring states had the opportunity to comment on the regional haze FIP, and did not ask for additional emission reductions. We also note that the RPGs are not enforceable goals. Neighboring states will have the responsibility to consider whether other reasonable control measures are appropriate to ensure reasonable progress during subsequent periodic progress reports and regional haze SIP revisions as required by 40 CFR 51.308(f)–(h), and may at that time consider asking EPA for additional emission reductions.

With respect to Colstrip Units 1 and 2, we note that our FIP achieves SO_2 emissions reductions well beyond those assumed in the WRAP PRP18b emissions inventory. Specifically, at Units 1 and 2, assuming operation at 85% of capacity, our FIP achieves reductions of 7,538 tpy of SO_2, which is 1,504 tpy better than indicated by the PRP18b projections. By way of comparison, again assuming operation at 85% of capacity, our FIP achieves reductions of 6,652 tpy of NO_X for Colstrip Units 1 and 2, which is 1,709 tpy below that indicated by the PRP18b projections. Because the additional SO_2 reductions are close to the shortfall in NO_X reductions at Colstrip Units 1 and 2, and as SO_2 may have a greater impact than NO_X on visibility in Montana, we find that the overall emissions reductions achieved at Colstrip Units 1 and 2 will result in similar visibility improvement to the emissions reductions assumed in the WRAP PRP18b projections.

With respect to Corette, the commenter has overstated the discrepancy between the emissions associated with our BART determination and the PRP18b

projections, because the commenter has compared WRAP projections based on annual emissions with emissions limits that are on a 30-day rolling average. In addition, we note that we have revised the NO_X and SO_2 emission limits for Corette in our FIP to be somewhat more stringent than what we proposed (and more reflective of actual emissions with existing controls). Finally, the WRAP projections do not reflect application of SOFA+SCR or a dry scrubber/baghouse to Corette. Therefore, the projections do not support the commenter's position that these controls are required.

Moreover, there are NO_X reductions at other BART sources that are greater than assumed by WRAP. At Ash Grove and Holcim, the total reductions from our FIP are significantly more relative to the PRP18b projections that the WRAP used. In conclusion, our FIP contains additional emission reductions at BART sources that largely offset any shortfall at Colstrip Units 1 and 2 and Corette.

Comment: A commenter stated that our reasonable progress goals are unreasonable, unsupported, and effectively contrary to the CAA's requirements that we assure reasonable progress in achieving natural visibility conditions in Class I areas. The commenter stated that the proposed RPGs, at a minimum, double the timeframe required to achieve natural visibility conditions for every Class I area in Montana and that this is not reasonable. The commenter also stated that the reasonable progress goals are unreasonable based on the statutory factors that must be considered by EPA under 42 U.S.C. 7491(g)(1), and that we provided two reasons for asserting that the reasonable progress goals are reasonable: That our four factor analyses resulted in limited opportunities for reasonable progress controls for point sources and that significant visibility impairment is caused by non-anthropogenic sources in and outside Montana. The commenter stated that with regard to the latter issue of non-anthropogenic sources in and outside of Montana, this is not a statutory factor that EPA is allowed to consider in establishing RPGs.

Response: We disagree. It is not necessarily unreasonable for the RPGs to reflect a longer period of time than the URP. The URP is simply calculated by dividing the difference between the present visibility conditions and natural visibility conditions by the number of years between the baseline and 2064. It assumes a steady rate of progress and does not take into account the four statutory factors for determining reasonable progress or any additional factors that warrant consideration. As a

result, the RPGs, which do reflect consideration of these factors, may well vary from the URP.

In determining reasonable progress controls, EPA did consider the statutory factors for determining reasonable progress set out in 42 U.S.C. 7491(g)(1). To the extent that the commenter argues with our evaluation of these factors, we respond to specific comments on our evaluation of these factors elsewhere.

The commenter is correct that consideration of non-anthropogenic sources in and outside of Montana is not one of the statutory four factors that must be considered under 42 U.S.C. 7491(g)(1). However, EPA's reasonable progress guidance states: ''In determining reasonable progress, CAA section 169A(g)(1) requires States to take into consideration a number of factors. However, you have flexibility in how to take into consideration these statutory factors and any other factors that you have determined to be relevant.'' [61] The data demonstrating that significant visibility impairment is caused by non-anthropogenic sources in and outside Montana is relevant because it diminishes the potential improvement that might be realized through controlling an individual point source within Montana. Therefore, it was proper for EPA to consider this additional factor.

Comment: A commenter stated that based on the four factors set forth under the CAA, it appears that EPA grossly overstated its assertion that there are only limited opportunities for reasonable controls for point sources. The commenter stated that this is particularly the case with regard to NO_X emissions from coal-fired EGUs in Montana. The commenter stated that our proposal disclosed that for every coal-fired EGU assessed under the four-factor analysis for determining RPGs, including Colstrip units 3 and 4, Colstrip Energy, and the Lewis and Clark Station, that cost-effective SCR control technology could achieve greater NO_X emissions reductions and greater visibility improvements than under our FIP. The commenter stated that despite this, we rejected SCR as a control option and ultimately adopted no NO_X emission controls for these four sources. The commenter stated that we also rejected SCR as BART for Colstrip Units 1 and 2 and the Corette coal-fired EGUs, even though we found SCR to be a cost-effective and reasonable technology, we rejected it in favor of weaker controls. The commenter concluded that we did not show that any of the four factors would mitigate against additional

control and stronger RPGs. The commenter stated that our assertion that there would be no degradation is not reasonable or legally justified and that we must establish our reasonable progress goals based on all coal-fired EGUs using SCR to reduce NO_X emissions.

Response: We disagree that the four factor analyses for EGUs that are potentially affected reasonable progress sources mandate the addition of SCR and that visibility, although not one of the four statutory factors that are required to be considered, cannot be considered in determining appropriate controls under reasonable progress. EPA's reasonable progress guidance states: ''In determining reasonable progress, CAA section 169A(g)(1) requires States to take into consideration a number of factors. However, you have flexibility in how to take into consideration these statutory factors and any other factors that you have determined to be relevant.'' [62] For example, the potential reduction in Q/ D is a factor that we consider to be relevant because the goal of the Regional Haze Rule is to improve visibility at Class I areas. We note that the commenter, in citing potential visibility improvement at the facilities mentioned, undercuts their own argument that the four statutory RP factors by themselves, without consideration of other factors, demonstrate that EPA ''grossly overstated'' its conclusion that there are only limited opportunities for reasonable controls for point sources. Commenter misstated EPA's conclusions by stating that EPA ''found SCR to be a cost-effective and reasonable technology'' for the BART EGUs. While we did state that the cost on a dollars per ton basis was cost-effective, we also explained that the cost of SOFA + SCR was not justified by the visibility improvement. 77 FR 24027, 77 FR 24035, and 77 FR 24043. The commenter misstated the requirements of the Regional Haze Rule. In examining potentially affected sources for possible controls and setting RPGs, EPA is not required to ''show that any of the four factors would mitigate against additional controls and stronger reasonable progress goals.'' Instead, EPA is required to consider the four statutory reasonable progress factors. In addition, EPA may consider additional, relevant factors such as visibility improvement from controls. To the extent that the comment argues with our determinations for particular potentially affected sources, we respond to specific

criticisms elsewhere. With regard to commenter's statement that our basis for determining there would be no degradation on the least impaired days was unreasonable and not legally justified, we note that the commenter did not identify any flaw in our data or methodology in deriving Table 198 in the proposal. We therefore disagree with the statement.

Comment: PPL commented that to try to address visibility impairment only within the universe of point sources subject to potential EPA regulation within the United States is not reasonable and will not lead to achievement of Reasonable Progress Goals (RPGs). PPL stated further that EPA, in conjunction with other federal and state agencies and the FLMs, should re-evaluate some of the conclusions as to the uncontrollable nature of several listed significant contributors of SO_2 and NO_X. PPL stated that application of the BART analysis excludes consideration of a number of factors, including outside domain sources. PPL pointed out that the RPGs in the proposed FIP do not take into account the contribution of international emissions to the visibility, and do not address challenges faced by the state of Montana.

Response: To the extent that PPL commented that we are addressing visibility impairment only within the universe of point sources subject to potential EPA regulation within the United States, that we did not consider other sources of emissions, we disagree. As explained elsewhere, our action considered the many contributors to haze including all anthropogenic sources as required by 40 CFR 51.308(d)(3)(iv) and smoke management techniques for agricultural and forestry management techniques as required by 40 CFR 51.308(d)(3)(v)(E). In our proposal, the emissions inventory appropriately included natural (non-anthropogenic) wildfire and anthropogenic sources such as open burning and international emissions. We proposed approve the revisions to the smoke management section of Montana's Visibility SIP as meeting the requirement in 40 CFR 308(d)(3)(v)(E).

Comment: The NPS commented that EPA used inconsistent criteria in selecting reasonable progress controls.

Response: We disagree. As explained in other responses, in determining the measures necessary to make reasonable progress and in selecting RPGs for mandatory Class I areas within Montana, we took the following four factors into consideration: costs of compliance; time necessary for compliance; energy and nonair quality

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[61] Reasonable Progress Guidance, p. 5–1.

[62] Reasonable Progress Guidance, p.5–1.

environmental impacts of compliance; and remaining useful life of any potentially affected sources. CAA section 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A). As also explained in other responses, we also considered potential visibility improvement in a general sense by considering the potential reduction in haze causing pollutants and also the distance from the source to the nearest Class I area. For Colstrip 3 and 4, we also considered visibility modeling results and have explained the reasoning for that decision in another response.

J. Comments on Colstrip Units 3 and 4

Comment: Some commenters agreed with EPA's conclusion not to require additional emissions controls at Colstrip Units 3 and 4. Commenters asserted that, given the aggressive pollution control technologies already in place, EPA properly concluded that additional controls for Reasonable Progress are not appropriate.

Response: We acknowledge the commenters' support for our decision not to require additional emission controls on Colstrip Units 3 and 4 in this planning period. Whether additional emission reductions from reasonable progress sources, including Colstrip Units 3 and 4, are necessary will be re-evaluated in subsequent planning periods.

Comment: Various commenters stated that we underestimated the costs of SNCR for Colstrip Units 3 and 4.

Response: We disagree that we underestimated the costs of SNCR for Colstrip Unit 3 and 4. For a further explanation, see our response to similar comments made in relation to SNCR costs for Colstrip Unit 1 and 2.

Comment: Commenters stated that they disagree with EPA's cost analysis for NO_X control technologies for Colstrip Units 3 and 4. In particular, commenters stated that we underestimated the capital costs and cost-effectiveness of these controls. Commenters referenced cost estimates submitted by PPL in September 2011 and February 2012, which show much higher capital costs and cost-effectiveness than those estimated by EPA.

Response: We disagree. We have rejected PPL's cost estimates for NO_X control options for Colstrip Units 3 and 4 for the same reasons that we rejected them for Colstrip Units 1 and 2. See previous responses to comments.

Comment: NPS stated that EPA modeled baseline visibility impacts at five Class I areas from Colstrip Units 3 & 4 using 2008–2010 emissions, while PPL modeled visibility impacts using 2001–2003 emissions. NPS agreed with the PPL modeling approach because it is consistent with EPA guidance to use the 2001–2003 pre-control emissions.

Response: See our response to a similar comment made in regard to the baseline emissions used for Colstrip Units 1 and 2.

Comment: NPS stated that after EPA concluded its statutory four-factor analysis of Colstrip 3 and 4, it created a new, ''Optional Factor: Modeled Visibility Impacts'' fifth factor, only for Colstrip 3 & 4. NPS further stated that this ''optional'' fifth factor is not required by statute or regulation, and that EPA only used it on one reasonable progress source (2 units) and did not explain what criteria it used to evaluate it.

Response: As we explained elsewhere, our RP Guidance allows for consideration of additional factors such as visibility impacts or benefits. Given the large annual emissions of NO_X and SO_2 from Colstrip Units 3 and 4 compared to other reasonable progress sources, we found that it was reasonable to model the visibility benefits and consider them when evaluating controls.

Comment: NPS stated that EPA has not provided criteria used in making the determination of what ''Costs of Compliance'' are reasonable, and its determinations vary significantly across Montana facilities.

Response: As we have explained elsewhere, while the Regional Haze Rule and BART Guidelines allow states to establish thresholds for cost-effectiveness, we are not required to do so and have not done so for this action. Also, our Reasonable Progress determinations were made based not just on the cost of compliance, but with consideration of the four factors along with additional information that was pertinent.

Comment: EarthJustice stated that EPA must set NO_X emission limits for Colstrip Units 3 and 4 based on SCR to help achieve reasonable progress. EarthJustice stated that EPA's analysis is skewed to underestimate the benefits of SCR, both in terms of control effectiveness and visibility improvement, and overestimates the costs. EarthJustice made claims regarding our cost analysis for Colstrip Units 3 and 4 that were very similar to the claims they made regarding Colstrip Units 1 and 2.

Response: We disagree. Below we address each of EarthJustice's arguments that support their assertion that SCR must be required for Colstrip Units 3 and 4.

Comment: EarthJustice stated that EPA underestimated the control effectiveness of SCR.

Response: See our response to similar comment made by EarthJustice in regard to Colstrip Units 1 and 2.

Comment: EarthJustice stated that EPA overestimated the cost of SCR.

Response: See our response to similar comment made by EarthJustice in regard to Colstrip Units 1 and 2.

Comment: EarthJustice claimed that the visibility benefit of SCR on Units 3 and 4 is substantial and therefore SCR should be required. EarthJustice noted that EPA modeled visibility benefits of SNCR and SCR and found a visibility benefit of 0.273 dv per unit from application of SCR. EarthJustice stated that application of SCR at both units would approximately halve the units' emissions of visibility impairing pollutants and would reduce the number of days of visibility impairment at Theodore Roosevelt NP to just 2 days and would eliminate visibility impairment caused by Units 3 and 4 at four other Class I areas. EarthJustice stated that, in light of this, we lacked a basis for our determination to not impose SCR at Colstrip Units 3 and 4. EarthJustice noted that, in North Dakota, we imposed LNB on two units at Antelope Valley Station based on a combined visibility benefit of 0.39 deciview, which we stated was significant even on a unit-by-unit basis of 0.2 deciview.

Response: We disagree that SCR should be required based solely on the modeled visibility benefits. As we explained in our proposal, we considered the four factors and the modeled visibility benefits of controls and determined that no additional controls should be required for this planning period. 77 FR 24066. Also, we stated that specifically, for SCR, the modeled visibility benefits (0.273 deciview and 0.260 deciview) were not sufficient for us to consider it reasonable to impose SCR in this planning period. 77 FR 24066. In making this determination, we noted that SCR was the more expensive option ($4,574/ton at Unit 3 and $4,607/ton at Unit 4). The cost of compliance is one of the four statutory factors, and EarthJustice has not provided a reason why it should be ignored. For the same reason, we reject the comparison with our North Dakota action. There, the cost-effectiveness of LNB at Antelope Valley Station was $586/ton for Unit 1 and $661/ton at Unit 2. 76 FR 58631. We explicitly considered these costs in making our determination to impose LNB. Here, the cost-effectiveness of SCR at Colstrip Units 3 and 4 is far above the

cost-effectiveness of LNB at Antelope Valley Units 1 and 2. Thus, the comparison gives us no basis to change our determination that SCR should not be required in this planning period.

Comment: EarthJustice stated that EPA should set more stringent SO_2 emission limits at Colstrip Units 3 and 4 to help achieve reasonable progress. EarthJustice stated that EPA incorrectly found that no additional upgrades are feasible and that 98% SO_2 removal to meet an SO_2 emission limit of 0.05 lb/ MMBtu at Units 3 and 4, which is readily achievable at little expense using MEL.

Response: EarthJustice cites a 1984 paper presented at the American Power Conference to support their argument of a lower emission rate. Colstrip 3 had only started operation in 1984 and Colstrip 4 did not commence operation until 1986,[63] the data cited by EarthJustice cannot be more than short-term tests of Unit 3 that are not representative of longer term performance. Annual emissions from 1985 and 1990 emissions from CAMD can be found in the docket. At the time these scrubbers were built, wet MEL scrubbers and wet caustic scrubbers were the only scrubbers that could deliver high capture rates (over 90%) with reasonable reliability. Scrubber technology has improved and other, less expensive, reagents are now preferred. Although Colstrip Units 3 & 4 used MEL in the past, MEL is not readily available in the region near the Colstrip plant. MEL is produced from a blending of dolomitic lime with high calcium lime to achieve a lime with a magnesium content of 3–6% or so. The lime is produced by calcination of limestone. Dolomitic limestone is limestone with a significant amount of dolomite, or calcium magnesium carbonate. Because there are no dolomitic limestone deposits near the Colstrip plant, the dolomitic lime must be sourced from remote locations. This increases the cost of the lime (that is made from the dolomitic limestone). According to Carmeuse, a supplier of MEL, the closest source of dolomitic lime is 1,000 miles away from the Colstrip plant and transportation would cost $0.12 per mile per short ton plus a 24% fuel surcharge to transport,[64] or close to $150/short ton just for transportation of the reagent. Because the lime would be blended in closer to the plant with high calcium lime at perhaps an 8:1 ratio (reducing magnesium content from about 40% to about 4–5% this would

result in an increased reagent cost of $15–$20 per ton. Assuming a high-calcium lime cost of about $95/ton,[65] this raises the cost of reagent by close to 20% assuming constant reduction. Reagent use might be improved somewhat for a given reduction level, but considering this is a unique scrubber design, it is difficult to assess what the impact may be. Regardless, reliance on a reagent source that is 1,000 miles away may cause operating risks during the winter months if delivery was interrupted.

We also note that EarthJustice did not provide site-specific cost information, for us to evaluate MEL. The cost of compliance is one of the factors required to be considered by CAA section 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A). Based on all four factors, we continue to find that the level of performance of the current SO_2 removal system for Colstrip Units 3 and 4 is satisfactory for this planning cycle. We will re-evaluate additional SO_2 controls for Colstrip Units 3 and 4 in the next planning cycle.

Comment: PPL stated that EPA properly concluded that RPGs do not require additional emissions controls on Colstrip Units 3 and 4 and that existing emissions controls at Units 3 and 4 already limit emissions to levels below the presumptive BART limit. PPL stated that EPA's RP conclusion should not be affected by EPA's ultimate determination with respect to BART requirements for Colstrip Units 1 and 2 and that no further controls are warranted based on conclusions regarding the extent of existing emissions controls and the cost-ineffectiveness of further controls.

Response: PPL did not provide specific information for us to consider in making a change to our FIP. In any case, we have not required additional controls for Colstrip Units 3 and 4 in our final FIP.

K. Comments on Devon Energy

Comment: MDEQ stated that we failed to provide information or analysis of any visibility benefit that would result from the application of NSCR for Devon Energy. MDEQ suggested that we must consider visibility benefits as part of the Devon Energy reasonable progress analysis, as the BART Guidelines include evaluation of visibility impacts "which would also appear to be required under the reasonable progress guidelines."

Response: The four reasonable progress factors are the costs of compliance, the time necessary for compliance, the energy and nonair quality environmental impacts of compliance, and the remaining useful life of any potentially affected sources CAA section 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A). Our Reasonable Progress Guidance states: "In determining reasonable progress, CAA section 169A(g)(1) requires States to take into consideration a number of factors. However, you have flexibility in how to take into consideration these statutory factors and any other factors that you have determined to be relevant." [66] As stated in our proposal at 77 FR 24069, for Devon, we considered Q/D and potential reductions in Q/D, which are relevant to the goal of the Regional Haze Rule, improving visibility.

Comment: MDEQ commented that EPA should review the NO_X limit for Devon with respect to its averaging time and compliance determining method for practical enforceability.

Response: In the final FIP, we have made changes to the language in 40 CFR 52.1396 to clarify the requirements for Devon Energy.

L. Comments on Montana-Dakota Utilities

Comment: Montana-Dakota Utilities (MDU) commented that the company did not disagree with our Reasonable Progress determination. MDU stated that, for EPA's reference, paragraph 3 on page 1 of the Sargent & Lundy IPM model method document cautions as follows with respect to the application of the model to smaller units:

The costs for retrofitting a plant smaller than 100 MW increase rapidly due to the economy of size. The older units which comprise a large proportion of the plants in this range generally have more compact sites with very short flue gas ducts running from the boiler house to the chimney. Because of the limited space, the SCR reactor and new duct work can be expensive to design and install. Additionally, the plants might not have enough margins in the fans to overcome the pressure drop due to the duct work configuration and SCR reactor and therefore new fans may be required.

MDU stated that Lewis & Clark Station is a small, 52 MW net capacity unit. In addition, MDU believes that the fan margin is not present at Lewis & Clark Unit 1 to overcome the pressure drop as discussed in the Sargent & Lundy guidance.

Response: MDU has not provided the information that would be necessary for

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[63] See EIA Form 860 data.

[64] Email from Bob Roden, Carmeuse, to Jim Staudt, Andover Technologies, July 31, 2012.

[65] Sargent & Lundy, "IPM Model—Revisions to Cost and Performance for APC Technologies, SDA FGD Cost Development Methodology FINAL", Prepared for US EPA, August 2010 see table 2.

[66] Reasonable Progress Guidance, p. 5–1.

us to determine whether or not to agree with the implied point of this comment, which seems to be that EPA underestimated the cost of SCR. First, MDU has not indicated whether there are, in fact, space limitations at Lewis & Clark Station that would cause installation of an SCR reactor and associated ductwork to be more expensive than the cost estimate in our analysis. Second, MDU has not indicated whether the additional pressure drop from installation of SCR at Lewis & Clark Station would, in fact, require installation of new fans, and if so, whether or not our cost analysis failed to factor in the cost of new fans.

Comment: MDU indicated that EPA uses a Retrofit Factor value of 1 for Lewis & Clark Station Unit 1 in the IPM Model calculation (factor B in the EPA cost sheets) which indicates an average retrofit cost, however, a higher value would be expected for Lewis & Clark since it is a small facility (as discussed/cautioned above by Sargent & Lundy) and could be difficult to retrofit. A more appropriate value between 1.3 and 2.0 is therefore recommended.

Response: We disagree. MDU has not provided any data or information to substantiate that a retrofit factor other than 1 is warranted for Lewis & Clark Station. The IPM capital cost calculations for retrofits already account for unit size. We note that capital cost does not vary linearly with size in IPM. Instead, in the capital cost formula in IPM, the cost varies exponentially with unit size (a least squares fit). The IPM document states, ''The least squares curve fit was based upon an average of the SCR retrofit projects.'' IPM Model— Revisions to Cost and Performance for APC Technologies, SCR Cost Development Methodology, Final, Sargent & Lundy, August 2010, Chapter 5, Appendix 5–2A, page 4–5.

We also disagree with the statement that a more appropriate retrofit factor should be 1.3 to 2.0. The aforementioned IPM document states that, ''Retrofit difficulties associated with an SCR may result in capital cost increases of 30 to 50% over the base model.'' Therefore, the highest retrofit factor that might be considered would be 1.5.

This comment has not resulted in any change to our FIP proposal or to our cost calculations for SCR.

Comment: MDU stated that the model ''Type of Coal'' input indicates ''PRB'', but should be ''Lig,'' since Lewis & Clark burns lignite coal. That stated, the ''Coal Factor'' value in the cell below ''Type of Coal'' indicates lignite coal was actually considered. As such, this recommendation is clerical in nature.

Response: As shown in the ''Given/Assumptions'' spreadsheet in our SCR cost analysis, we used a heating value of 6,714 Btu/lb, which we considered to be representative of lignite coal. PRB coal would have a much higher heating value.

Comment: MDU stated that EPA used a NO_X input emission rate to the SCR of 0.26 lb/MMBtu, which is the low load emissions rate of low NO_X burners (LNB) and Separated Overfire Air (SOFA) that MDU estimated in Table C.2–1 of Appendix C.2 of the Emissions Control Analysis for Lewis & Clark Station Unit 1. The 0.25 lb/MMBtu for LNB/SOFA at high load is a more appropriate rate to use as the inlet to an SCR. While this does not result in a significant change to the overall conclusions in the report, it is nonetheless important because the EPA-derived cost was based on full load operation, as opposed to lower load.

Response: We disagree with the statement that we obtained the emission rate of 0.26 lb/MMBtu from the low-load scenario presented in Table C.2–1 of Appendix C.2 of MDU's Emissions Control Analysis. Instead, as indicated in the ''Given/Assumptions'' spreadsheet of our SCR cost analysis, we obtained the rate of 0.26 lb/MMBtu from Table C.2–6 of MDU's analysis. Table C.2–6 is not identified by MDU as a low-load scenario.

Comment: MDU stated that, from the IPM model guidance, EPA did not include factors N through V in the model calculations for operating costs for Lewis & Clark Station's evaluations. Although factors N through R and T through V are utility costs that were not needed in EPA's evaluation, the catalyst cost (factor S) was applied based on an alternative source. EPA references ''Cichanowicz (Jan 2010)'' with a cost of $170/ft³ as compared to the IPM value of $8,000/m³ ($226.53/ft³ in 2009$) and MDU's value of $214.29/ft³. MDU recognized that a range of potential costs exist, and believes that either the IPM value or the value MDU provided would be more appropriate for EPA to use since they are based on industry and vendor data respectively and are expected to represent a more site specific value as opposed to a literature based value.

Response: We disagree. The Cichanowicz document we used provided actual catalyst costs observed over time. It demonstrates that catalyst costs continue to decline. In fact, based on the trend displayed in the graph on page 6–6 of the document, it is likely that catalyst costs in upcoming years will be even lower than the $6,000/m³ assumed in our FIP proposal. Current

Capital Cost and Cost-Effectiveness of Power Plant Emissions Control Technologies, J. Edward Cichanowicz, Prepared for Utility Air Regulatory Group, January 2010, page 6–6, Figure 6–6. This comment has not resulted in any change to our FIP proposal or to our cost calculations for SCR.

Comment: Similarly, to item e above, MDU noted that the cost EPA associated with aqueous ammonia ($0.12/lb) is lower than the cost MDU estimated of $0.70/lb. MDU recognized that a range of ammonia costs exists, that the price of ammonia fluctuates over time, and that the price is related to natural gas prices. As such, if SCR were to be considered in the future, MDU would ask that site specific, local, as delivered cost be evaluated at that time.

Response: We disagree. In its own SCR cost spreadsheet, MDU did not indicate the basis for its estimate of $0.70/lb. We used $0.12/lb based on data provided to us by control technology vendors on cost of aqueous ammonia. This comment has not resulted in any change to our FIP proposal or to our cost calculations for SCR.

Comment: MDU stated that, through the FR correction, EPA changed the language on 77 FR 24071 to state that an 85% control efficiency was used instead of the initially quoted 95% control efficiency for SDA and baghouse. MDU believes this correction was in error. Table 172 in the FR lists the control efficiency as 85% for SDA and baghouse and this value should be corrected to 95% control efficiency for SDA and baghouse as the textual representation in the FR was correct.

Response: We disagree. We made the correction from 95% to 85% because MDU's Emissions Control Analysis dated June 2011, at Table 1 on page 14, shows an expected SO_2 emission reduction of 850.3 tons per year, for SDA with baghouse. The baseline SO_2 emissions listed in the table are 1,002.1 tons per year. This amount of reduction represents 85% control efficiency. We presented these figures at 77 FR 24071, Table 172. MDU later wrote to us on February 10, 2012, to say that 70–90% control is the generally anticipated range of SO_2 control for this control option, and that 95% control was also assumed and represented a screening level assumption for a high degree of SO_2 control. In its February 10, 2012 submittal, MDU did *not* indicate that Table 1 of their June 2011 submittal should be revised, so we used the figures presented in MDU's Table 1.

Comment: In Table 172 of the proposed FIP (77 FR 24071), EPA provides a 10% control effectiveness for

both DSI with baghouse and existing scrubber mod; however, MDU stated that this value should be changed to 70% to reflect the overall reduction and not the incremental reduction as shown in Table 1 of MDU's Emissions Control Analysis for Lewis & Clark Station Unit 1.

Response: We disagree. We stated that we did use 70% overall SO_2 control effectiveness for DSI with baghouse, as well as for existing scrubber mod, in our analysis. 77 FR 24071. However, we also stated that existing SO_2 controls at Lewis & Clark Station, consisting of a flooded disc wet scrubber, have achieved up to 60% control under certain operating conditions. 77 FR 24070. We obtained this information from MDU's analyses. 77 FR 24070, footnote 265. MDU's Emissions Control Analysis dated June 2011, at Table 1 on page 14, lists an expected emissions reduction of 100.2 tons per year for DSI with baghouse, and the same amount of reduction for existing scrubber mod. This is a 10% reduction from the baseline emissions of 1,002.1 tons per year listed in that table. We relied on these figures from MDU in listing a control effectiveness of 10% for DSI with baghouse, as well as a control effectiveness of 10% for existing scrubber mod. For all control options analyzed in our FIP proposal, we present control effectiveness in terms of the reduction that might be achieved from baseline emissions. In this case, the baseline emissions already reflected a 60% level of SO_2 control.

Comment: EarthJustice argued that EPA should require Lewis and Clark to switch from lignite fuel to natural gas as a reasonable progress measure. The unit already uses natural gas for startup, there is a natural gas supply close by, and thus switching to natural gas is, in commenter's view, quite feasible and cost effective for Lewis and Clark station. Switching to natural gas should be required in the FIP to help achieve reasonable progress, as this measure would virtually eliminate the unit's SO_2 and PM emissions and would also reduce NO_X emissions. Although EPA dismissed fuel switching as not cost effective, commenter argues that EPA vastly understated the cost effectiveness of this measure.

Commenter first stated that EPA has overstated the costs of switching to natural gas, in large part because it has underestimated, and in some cases ignored, the tremendous cost savings that would result from not operating the facility's scrubber, multi-cyclone dust collector, and coal preparation systems. EPA also relied on inflated estimates for natural gas and natural gas supply

pipelines provided by MDU, which owns Lewis and Clark.

Commenter also stated that EPA has improperly calculated the emissions reductions achievable from fuel switching. EPA failed to take into account the fact that the use of natural gas would replace the existing SO_2 and PM controls. Commenter stated that, in view of the 54 kilometer distance from Lewis and Clark to the closest Class I area, filterable PM must be considered. Thus, EPA should have accounted for the pollution reductions that would be achieved with natural gas from uncontrolled levels of SO_2 and PM. Properly calculated, fuel switching would eliminate 24,000 tons per year of SO_2, NO_X and filterable PM. As EPA noted, Lewis and Clark's remaining emissions would be ''negligible.''

Commenter concluded that, even using EPA's inflated cost estimate, when uncontrolled rates of SO_2 and PM are used as the baseline, the cost effectiveness of switching to natural gas at Lewis and Clark station is $909/ton of SO_2, NO_X and PM removed. This measure is highly cost effective and should be required to help achieve reasonable progress.

Response: We disagree. Although we do not believe it was necessarily an error for us to rely on MDU's estimate of the price of natural gas, we acknowledge that price estimates for natural gas can vary, and that the $3.07/Mscf price of natural gas cited on page 129 of the commenter's Technical Support Document, obtained from the Energy Information Administration (EIA), is substantially lower than MDU's estimate of $7.91/Mscf. However, even if we rely on the price cited by the commenter, the cost of a fuel switch would still be excessive. Using $3.07/Mscf, along with MDU's estimate of 3,282,876 Mscf of natural gas which would be needed to fuel Lewis and Clark station year-round solely on natural gas (not disputed by the commenter), we calculate the annual cost of natural gas at $10,078,429. MDU estimated the annual cost of coal at $5,754,732. The annual fuel cost differential would therefore be $4,324,197. To this result we add the annualized cost of constructing a natural gas pipeline ($1,699,200), as we did in our FIP proposal.[67] This yields a total annual cost of $6,023,397. Dividing this result by an expected SO_2 emission

reduction of 1,002 tons per year yields cost effectiveness of $6,011/ton. Based on this cost and other factors for Lewis and Clark station described in our FIP proposal at 77 FR 24072, we would still eliminate fuel switching as a control option for $SO_2.$

We disagree with the statement that a fuel switch would yield ''tremendous'' cost savings from not operating the facility's scrubber, multi-cyclone dust collector, and coal preparation systems. Commenter has not quantified the cost savings. We have no reason to believe they would be ''tremendous.'' We believe the cost savings would be minimal in comparison to other components of our cost calculations for a fuel switch. The cost savings would likely consist primarily of avoidance of electricity and maintenance costs for the equipment cited by the commenter.

Also, we disagree with the statement that we should have calculated reductions from uncontrolled levels of SO_2 and PM. In every cost analysis of control options for our FIP, we calculate reductions from an emissions baseline which is the current actual annual emissions, consistent with the approach laid out in the 2005 Regional Haze Rule, at 70 FR 39167, for calculating cost effectiveness of control options. Commenter's citation to a 2008 letter sent by EPA in the course of developing initial information for a FIP ignores the basis for the action we actually proposed.

We also disagree with the statement that a ''proper cost analysis'' would result in cost-effectiveness of $909/ton. Commenter apparently calculated $909/ton based on reduction from uncontrolled emissions, for the sum of three pollutants (PM, SO_2 and NO_X). We have explained above why we do not use uncontrolled emissions as the baseline. We also explained in our proposal that, in our reasonable progress determinations, we were not evaluating controls for PM for potentially affected sources, based on our analysis of the emissions inventory and results from BART modeling. 77 FR 24055–56. Commenter has not disputed those bases; commenter merely notes the 54 kilometer distance to Theodore Roosevelt NP. Given these flaws, the commenter's cost analysis provides no basis for us to reconsider our decision.

Comment: Commenter noted that, although MDU proposed upgrades to its existing SO_2 and NO_X pollution controls, EPA failed even to require these measures to help achieve reasonable progress. See 77 FR 24074. Commenter stated that MDU's proposal is vastly inferior to fuel switching at reducing haze pollution, but MDU's

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[67] Commenter's speculation that the existing pipeline could be upgraded does not provide sufficient basis for us to supplant MDU's estimated cost for a new pipeline with some other cost. We note that, even if the upgrade were feasible and had zero cost, the cost effectiveness of the SO_2 reductions would still be well over $4,000/ton.

proposed controls are the bare minimum that EPA should have required for reasonable progress.

Commenter noted that MDU proposed to improve SO_2 removal to 70% by optimizing the existing particulate scrubber and lime injection system with a proposed limit of 0.45 lb/MMBtu. EPA estimated the cost effectiveness of this modification at $1,383/ton SO_2 removed. MDU also proposed SOFA and low NO_X burners (upgraded) to achieve a NO_X emission rate of 0.25 lb/MMBtu. EPA estimated the cost effectiveness of this option as $1,213/ton of NO_X removed. Commenter stated that, although the emissions reductions from these measures are modest, they are highly cost effective and are the minimum that EPA should have required from Lewis and Clark to achieve reasonable progress.

Response: We disagree. MDU's proposal to improve SO_2 and NO_X emission control was contained in its June 2011 Emissions Control Analysis, which was submitted in response to a CAA section 114 information request from us. Under the Regional Haze Rule, we are not bound by controls that a source has proposed when we make our reasonable progress determination based on the four statutory factors.

With regard to the statement that cost-effectiveness of $1,383/ton for SO_2 and $1,213/ton for NO_X is ''highly cost-effective'' and should result in a requirement for emissions reductions, commenter has not provided a basis for this conclusion. As explained in our FIP proposal at 77 FR 24072 (for SO_2) and 24074 (for NO_X), in making our reasonable progress determination for Lewis and Clark Station, we considered the following four reasonable progress factors: cost of compliance, the time necessary for compliance; the energy and nonair quality environmental impacts of compliance; and the remaining useful life of the source. We also took into account the following additional factors: size of the facility, the baseline Q/D of the facility, and the potential reduction in Q/D from the controls. Commenter has not disputed the appropriateness of using the four reasonable progress factors and other factors in our proposal.

Comment: WEG commented that the determination in the proposed rule that no additional SO_2 controls are required on Lewis & Clark Station is unreasonable. WEG notes that two highly effective control options are available (fuel switch to natural gas at 99% control effectiveness and SDA with baghouse at 85% control effectiveness) and should be further considered.

Response: We disagree. EPA did not evaluate control options for Regional Haze FIP development solely based on emission control effectiveness. As indicated in EPA's analysis, the cost of fuel switching is estimated at $21,875 per ton of pollutant removed and the cost of SDA with baghouse is estimated at $11,825 per ton of pollutant removed. 77 FR 24072, Table 173. EPA has already explained that this cost is excessive. WEG has not provided a reason to not consider the cost excessive. Besides the cost of compliance, EPA also explained that other factors were taken into consideration in determining whether additional SO_2 controls should be required at Lewis & Clark Station, those being the time necessary for compliance, the energy and nonair quality environmental impacts of compliance, the remaining useful life of the facility, the size of the facility, the baseline Q/D of the facility, and the potential reduction in Q/D from the controls. WEG did not provide a reason to re-evaluate these other factors.

Comment: WEG comments that EPA should re-examine its decision to eliminate all control options for NO_X and move to require HDSCR + SOFA/LNB at Lewis & Clark Station. WEG notes that this control option has a high control effectiveness of 87.5% and considers the cost of $4,853 per ton of pollutant removed to be reasonable. To rule it out alongside a fuel switch to natural gas, which has a much higher cost of $41,934 per ton of pollutant removed, lacks reason. WEG stated that the cost and visibility benefits of HDSCR + SOFA/LNB should be considered individually, and the control option should be implemented because of the great emissions reduction it achieves, and because the FIP is far from attaining a Uniform Rate of Progress (URP) akin to the regulatory rate. WEG also stated that the final analysis of control options took into account only ''the most cost effective option (SOFA/LNB)'' when weighing cost against overall reductions in emissions.

Response: We disagree. EPA did consider control options individually. At Step 5 of its NO_X analysis, EPA mentioned cost of HDSCR + SOFA/LNB in the same sentence as cost of a fuel switch only because those two options happened to be the most expensive. 77 FR 24074. Besides the cost of compliance, EPA also explained that other factors were taken into consideration in determining whether additional NO_X controls should be required at Lewis & Clark Station, those being the time necessary for compliance, the energy and nonair

quality environmental impacts of compliance, the remaining useful life of the facility, the size of the facility, the baseline Q/D of the facility, and the potential reduction in Q/D from the controls. At Step 5, EPA explained how these factors were considered with respect to all control options, not just SOFA/LNB. In the case of HDSCR + SOFA/LNB, EPA explained that this control option was eliminated on the basis of not only cost, but also on the basis of the small size of the facility and the relatively small baseline Q/D of the facility. WEG has not provided a reason to re-evaluate these other factors. With regard to URP, that comment was addressed in a previous response.

M. Comments on Montana Sulphur and Chemical Company

Comment: MSCC commented that the company agrees with the conclusion in the proposed FIP that additional controls are not required at this time. MSCC also stated it does not believe we should have considered it to be a BART-eligible source. The company referenced several letters and discussions with MDEQ that were previously submitted and had as part of development of the regional haze plan for Montana.

Response: Because the commenter ultimately agrees with the final conclusion and controls are not required for MSCC, at this time, we find the comment to be non-substantive.

N. Comments on Health, Ecosystem Benefits, Other Pollutants, and Coal Ash

Comment: Several commenters stated that haze pollution significantly impacts human health and ecosystem health. Specifically, commenters asserted that haze pollution, including haze pollutants NO_X, SO_2 and PM, contributes to heart attacks, asthma attacks, chronic bronchitis and respiratory illness, decreased lung function, increased hospital admissions, and even premature death. Another commenter stated that NO_X and SO_2 can combine to create photochemical smog and ozone, which can exacerbate health problems.

Some commenters cited a 2010 Clean Air Task Force report in stating that the Colstrip coal-fired power plant put 31 people at risk of premature death, 48 people at risk of a heart attack, 47 people at risk of acute bronchitis, and 534 at risk of an asthma attack each year.[68] Several commenters encouraged EPA to finalize the regional haze proposal citing their own health

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[68] Several commenters cited numbers that were similar to these, but did not match them exactly.

problems, or the health problems of family members.

Some commenters stated that the negative health impacts of this pollution disproportionately harm vulnerable populations, specifically the young and elderly, and that this disproportionate harm potentially makes this a case of environmental justice. A commenter claimed that Colstrip causes a dark shadow on snow and takes human lives. One commenter stated the rate of asthma in children in Rosebud County is the third highest of all counties in the State, while another stated the rate of birth abnormality in the area downwind of Colstrip is much higher (34%) than in most other counties in Montana (10%). One commenter stated that over 10% of Montana high school students were estimated to have asthma in 2009. A commenter surmised that a 50% reduction in pollution from Colstrip would help human health more than eliminating pollutants from all other Montana sources.

Some commenters expressed a willingness to pay more for power in support of pollution control technology, with others stating that we should all pay the full cost of energy and not pass it on as healthcare costs. Another commenter stated that the cost of pollution controls, especially at Colstrip, was small when compared to the health-related benefits. Other commenters stated that the sources should not be allowed to externalize the costs of their pollution onto the people, who must pay for them in the form of health-related costs.

Some commenters stated that haze pollution negatively impacts ecosystem health. Commenters expressed concern for the effects of haze pollution on plants and water bodies. Some commenters specifically expressed concern over acid deposition from SO_2 and NO_X emissions, which they argued can leach into drinking water sources and harm crops. One commenter attributed high levels of mercury in some Montana back country lakes to coal-fired power plant emissions.

Other commenters supported EPA's position that consideration of health benefits is not relevant under the regional haze program.

One commenter stated that we should regulate coal ash at Colstrip. Another commenter expressed concern about acid rain, and one commenter stated that various pollutants such as dioxin and formaldehyde were byproducts of coal pollution.

Response: We acknowledge the commenters' concerns regarding the negative health impacts of haze-causing emissions. We agree that the same $PM_{2.5}$ emissions that cause visibility impairment can cause respiratory problems, decreased lung function, aggravated asthma, bronchitis, and premature death. We also agree that the same NO_X emissions that cause visibility impairment also contribute to the formation of ground-level ozone, which has been linked with respiratory problems, aggravated asthma, and even permanent lung damage. We agree that these pollutants may have negative impacts on vegetation, and reduce crop yields. However, for purposes of this action, we are not authorized to consider these impacts in promulgating our FIP, and we have not done so. However, to the extent that this FIP will lead to reductions in these pollutants, there will be co-benefits for public health.

We recognize the importance of considering environmental justice; for this action, we are finalizing emission limitations that will result in emissions reductions that will benefit potential environmental justice communities. Therefore, this action will have no high adverse and disproportionate impact on potential environmental justice communities.

Mercury is not a visibility impairing pollutant, and was therefore not included in our analysis. We also are not authorized to regulate coal ash in this action.

Comment: Some commenters noted that regional haze is not a health-based standard, and that there are other recently enacted rules that protect human health.

Response: We agree that the Regional Haze Rule was not intended to address health concerns. Regional Haze is not a health-based standard.

O. General Comments Supporting Our Proposal or for Stricter Controls

Comment: NPCA and MATB commended EPA's required controls for the Ash Grove and Holcim cement kilns. The Northern Cheyenne Tribe expressed support of our proposal as a whole.

Response: We acknowledge the support provided by these commenters.

Comment: Overall, we received more than 47,000 comment letters from members representing various organizations and concerned citizens requesting that EPA mandate more stringent and effective controls, most notably SCR, on eligible Montana sources. These comments were received at the public hearings in Billings and Helena, Montana, by Internet, and through the mail. Many of these commenters argued that SCR is required at over 200 facilities in the U.S., and that SCR should therefore also be required at the coal-fired plants in Montana. A mass mailer from WEG claimed that SCR was shown to be cost-effective, but is not required. Several comments more generally stated that EPA should require the most modern, effective pollution controls on Montana sources, but did not specifically discuss the desired requirements. The Montana Conservation Voters pointed out that pollution from Colstrip will be three times higher than if SCR were required.

Response: Although we acknowledge the commenters' encouragement that we adopt even stricter standards, the standards discussed in our proposal are appropriate considering the costs and visibility improvement.

Comment: One commenter pointed out that Colstrip emits more pollutants than the nine next largest haze producers, combined.

Response: The commenter did not explain specifically what they were requesting.

Comment: A commenter pointed out that Colstrip 3 and 4 are as highly polluting as Colstrip 1 and 2, and thought that Colstrip 3 and 4 should also be required to install additional controls.

Response: As explained in our proposal, the modeled visibility benefits are not sufficient for us to consider it reasonable to impose additional controls for Colstrip units 3 and 4 for this planning period. 77 FR 24066 and 77 FR 24067.

Comment: One commenter stated that the upgrading of pollution controls on coal-burning facilities also helps mitigate the effects of climate change. A separate commenter requested that EPA's plan consider CO_2 because of its impacts on climate change, while another stated that coal should no longer be burned, as such action would slow global climate change.

Response: While we understand the commenters' concerns with respect to climate change, consideration of climate change is outside the scope of this action. CO_2 is a greenhouse gas (GHG) and is not considered a visibility impairing pollutant. However, EPA implements regulations that address GHGs in order to protect the public and the environment from the negative impacts of climate change.

P. General Comments That the Proposal Is Too Stringent

Comment: Various commenters generally stated they did not support the proposed rulemaking. Their reasons included: It will negatively affect the local economy; it will negatively affect the coal power plant industry; electricity costs will increase; health

concerns are exaggerated; direct and indirect jobs/businesses would be adversely affected; the costs outweigh the benefits; Colstrip is already significantly regulated; there are no air quality issues in Colstrip; and it will not result in noticeable visibility improvements. One commenter insisted our proposal is part of a broader anti-coal plan to shut down coal plants, while another stated that Congress should legislate national energy policy rather than involving federal agencies. One commenter stated that PPL is very committed to clean air and environmental stewardship and another stated that Colstrip is already heavily regulated and additional controls are unnecessary. One commenter stated that mismanagement of forests causes more haze and that Colstrip provides good jobs and has a good compliance record.

Response: We acknowledge these general comments that opposed our proposed action as being too stringent. We provide responses that address some of these issues elsewhere in this action. This action is based on the statutory and regulatory requirements for regional haze which we have followed.

Q. General Comments on Visibility Improvement and Other Causes of Haze

Comment: Some commenters stated that any controls required by our action must demonstrate a perceptible visibility improvement and some stated that the reductions in the proposal will not produce perceptible visibility improvement. Other commenters said that there were no haze issues in Montana and that the change in visibility is subjective. The Montana Chamber of Commerce commented that our FIP is not based on sound science, accurate measures, or proven measures that will solve the problem.

Some commenters stated that gravel roads and forest fire are the real causes of haze.[69] WETA commented that under the FIP, haze would not be effectively reduced and EPA's regional haze plan should consider all established sources of emissions and not just industrial facilities. Another commenter suggested that money to clean up pollution should be spent in urban areas where there are real problems, not in rural areas like Montana. An individual submitted information comparing Montana emissions from different sources.

One commenter noted that the proposed rule delays, by hundreds of years, in some cases, achievement of the 2064 natural visibility goal. Numerous commenters stated that EPA should not

forego cost-effective pollution controls when more progress is clearly needed to protect air quality. Some commenters stated that there is currently haze at Yellowstone that was not visible years ago.

With regard to Colstrip, a commenter said that shutting down Colstrip would not clear the haze and that areas outside Montana, including Oregon, Washington, and China influence the haze at Yellowstone. Another commenter stated that there is no haze in the town of Colstrip and that the wind does not blow in the directions of Yellowstone and Roosevelt.

Response: We disagree that any controls required by our action must demonstrate a perceptible visibility improvement. In a situation where the installation of BART may not result in a perceptible improvement in visibility, the visibility benefit may still be significant. The Regional Haze Rule states "even though the visibility improvement from an individual source may not be perceptible, it should still be considered in setting BART because the contribution to haze may be significant relative to other source contributions in the Class I area. Failing to consider less-than-perceptible contributions to visibility impairment would ignore the CAA's intent to have BART requirements apply to sources that contribute to, as well as cause, such impairment." 70 FR 39129. Visibility impacts below the thresholds of perceptibility cannot be ignored because regional haze is produced by a multitude of sources and activities which are located across a broad geographic area.

We agree that industrial facilities are not the only causes of haze. Our action considered the many contributors to haze including industrial facilities. In this action, we also proposed changes to Montana's Visibility SIP that would require BACT for open burning.

Even though some Class I areas will not attain natural visibility conditions by 2064, our action requires the controls that were determined to be effective according to our evaluation. For those sources subject to BART, we evaluated: (1) Cost of compliance, (2) the energy and nonair 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 and we determined which controls should be required according to that evaluation. In determining the measures necessary to make reasonable progress and in

selecting RPGs for mandatory Class I areas within Montana, we took into account the following four factors: (1) Costs of compliance, (2) time necessary for compliance, (3) Energy and nonair quality environmental impacts of compliance; and (4) remaining useful life of any potentially affected sources. CAA section 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A).

For Colstrip, we evaluated visibility improvement at all Class I areas within 300 km. As stated above we evaluated other sources of haze, including but not limited to, gravel roads and forest fires. The most impacted Class I areas were Theodore Roosevelt NP and UL Bend WA. While sources outside Montana do contribute to haze in the Class I areas within Montana, that does not preclude our obligation to evaluate Colstrip Units 1 and 2 according to the five BART factors and to evaluate Colstrip Units 3 and 4 according to the four reasonable progress factors and to require additional controls where necessary.

R. Comments on Cost, Economic Impact, Jobs and Price to Consumers

Comment: Some commenters stated that the proposed rule would have a negative economic impact and a negative impact on job creation and growth. Some commenters stated that PPL might shut down Colstrip Units 1 and 2 as a result of this action. One commenter explained that shutting down power plants removes jobs, and prevents other businesses from using the energy from the power plant, causing a domino effect. A commenter submitted documents describing Colstrip's positive economic and community impact. Another commenter said that specifically, Montana has a large percentage of low income and senior citizens who would be majorly burdened by an increase in utility cost and another commenter said that the cost would also be very burdensome for the small business community in the area. The Southeastern Montana Development Corporation stated that the economic impact of this action would be devastating to consumers. One commenter said that the costs were prohibitively expensive and another said that the costs could put the plants at risk for future investments due to lack of economic viability. A commenter suggested that the initial cost of investment at Colstrip 1 and 2, including the cost of debt and capital, would be in excess of $82 million and that the capital cost, plus operating cost of $377 million could result in a 19.6% increase in the cost of production. Another commenter suggested that the cost of electricity could increase by a

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[69] One commenter also mentioned idling trucks, oil refineries and farms as causes of haze.

factor of 20 in 3–4 years. One commenter urged us to consider the indirect ways that controls on Colstrip 3 & 4 could affect electric rates. Numerous commenters stated that the reason EPA was not requiring SCR was to save polluters money.

Other commenters said that the health costs of pollution and economic benefit from tourism should be considered. One commenter said that the health related costs from Colstrip are estimated to be $230 million annually. Another commenter stated that air pollution controls are cost effective based on an EPA report. One commenter said that pollution hinders the Billings economy because the city's economic vitality is linked to high quality life-styles, while another noted that haze diminishes tourists' scenic vistas.

Some commenters pointed out that the proposed rule would create jobs. One commenter stated that complying with the rule would create good, high-paying jobs for Montana's skilled work force, including boilermakers, laborers and pipefitters. Numerous commenters stated that nearly 1,000 full-time jobs could be created at Colstrip from installing pollution control equipment. One commenter said that the Colstrip plant will not shut down just because added technology is required.

Many commenters expressed a willingness to pay more for power in support of pollution control technology. Others similarly stated that we should all pay the full cost of energy and not pass it on to healthcare. Some commenters stated that they thought PPL could afford to pay for additional controls based on the company's profit. A report submitted by Power Consulting, Inc. found that the typical residential customer's bill would increase by 55 to 89 cents if SCR were required on Colstrip unit 4. The overall conclusion from that report was that the impact of a required SCR retrofit on customer's rates would be small enough that it would not disrupt household budgets nor cause a significant impact on the Montana economy.

Response: EPA's evaluation of capital and annual expenses associated with implementation of the FIP shows such expenses to be justified by the degree of improvement in visibility in relationship to the cost of implementation. BART requires that we evaluate: (1) Cost of compliance, (2) the energy and nonair 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. In determining the measures necessary to make reasonable progress and in selecting reasonable progress goals for mandatory Class I areas within Montana, we must take into account the following four factors: (1) Costs of compliance, (2) time necessary for compliance, (3) Energy and nonair quality environmental impacts of compliance; and (4) remaining useful life of any potentially affected sources. CAA section 169A(g)(1) and 40 CFR 51.308(d)(1)(i)(A). The cost of electricity to consumers and the overall impact on the economy is outside the scope of our evaluation for this action.

Although we did not consider the potential positive benefits to local economies in making our decision, we do expect that improved visibility would have a positive impact on tourism-dependent local economies. Also, the retrofits required are large construction projects that will take up to five years to complete. These projects will require well-paid, skilled labor which can potentially be drawn from the local area and support local growth.

Comment: A commenter stated that EPA should have included, as associated per-unit costs, consideration of the "wider market consequences" of a potential shutdown of generating capacity at Colstrip 1 and 2. The commenter says that, "[i]f the cost of production resulting from this rule * * * exceeds the market value of power, PPL may make a decision to shutter the plant." The commenter also states that, "[b]ased on an analysis of production cost data, there is at least some chance that Colstrip Units 1 and 2 would become uneconomical as a result of mandated upgrades." Specifically, commenter estimated that the "all-in" cost of production of electricity post-controls is $25.591 per megawatt-hour, a 19.6% increase over the current $21.40 per megawatt-hour cost of production reported in Federal Regulatory Commission filings. Commenter stated that, compared to current market prices from a regional trade publication,[70] Colstrip 1 and 2 would often be uneconomical at that estimated cost.

The commenter also argued that a closure at Colstrip 1 and 2 would decrease available electrical generation in the northwestern U.S. The commenter stated that we wrongly failed to consider these factors of potential plant closure and the

[70] Commenter cited the trade publication "Clearing Up," which commenter stated reports on prices at the Mid-Columbia trading club.

subsequent constriction of power supply in our analyses.

Response: Analyzing the wider market consequences of a potential shutdown of generating capacity at Colstrip 1 and 2 involves many complicated factors and it is unclear from the information provided by the commenter that Colstrip Units 1 and 2 would, in fact, shut down. As noted previously, we have received conflicting information regarding potential rate increases. Specifically, a report submitted by Power Consulting, Inc. found that the typical residential customer's bill would increase by 55 to 89 cents if SCR were required on Colstrip unit 4. The BART Guidelines allow for the consideration of unusual circumstances that justify taking into consideration the conditions of the plant and the economic effects of requiring the use of a given control technology. The BART Guidelines state:

[t]hese effects would include effects on product prices, the market share, and profitability of the source. Where there are such unusual circumstances that are judged to affect plant operations, you may take into consideration the conditions of the plant and the economic effects of requiring the use of a control technology. Where these effects are judged to have a severe impact on plant operations you may consider them in the selection process, but you may wish to provide an economic analysis that demonstrates, in sufficient detail for public review, the specific economic effects, parameters, and reasoning.

70 FR 39171. The commenter has not provided any basis that unusual circumstances exist here. Nor has the commenter providing any information that indicates a shutdown will occur that we could have taken into account in our analysis. The owners of Colstrip Units 1 and 2 have made no indication that there are unusual circumstances present that warrant taking wider market consequences into consideration.

S. Comments About Other Forms of Energy

Comment: We received comments regarding alternative forms of energy. Some commenters believed that wind energy would create more jobs while others believed that it would not create as many jobs compared to coal fired power plants. Some commenters stated that wind energy was cheaper to produce while one commenter pointed out that the government subsidizes wind energy. One commenter believed that the wind farm in Judith Gap produces energy more cheaply compared to the Colstrip coal plant. One commenter stated that our energy

should be focused on renewable sources rather than coal and another commenter stated that the most important thing we can do to slow global warming is to stop burning coal.

Response: While we do generally acknowledge that many kinds of renewable energy do not produce haze-causing pollutants, and transitioning to those sources of energy could lead to visibility improvements. In this action we are required to review specific retrofit options for specific sources subject to BART or the sources analyzed under reasonable progress. Renewable energy technology is not a retrofit option for these sources and is outside the scope of our determinations and regulatory requirements in this action.

T. Other Miscellaneous Comments

Comment: One commenter asked whether EPA was concerned that requiring these facilities to install emissions control equipment to address fine particles and precursors might impact the effectiveness of equipment installed to address other pollutants.

Response: The control technologies that are required will not negatively impact the effectiveness of equipment installed to address other pollutants.

Comment: One commenter asked whether the agency was concerned that the technologies prescribed to address particles and precursors might also impact the efficiency and reliability of kilns, boilers, generators and other essential equipment.

Response: The control technologies required will not negatively impact the efficiency and reliability of kilns, boilers, generators and other essential equipment. As required under BART, we evaluated the energy impacts for each control option considered. 70 FR 39168 and 70 FR 39169. These impacts are discussed in the relevant sections of the proposed rule and in all cases are minor. In addition, as required under BART, we evaluated the technical feasibility for each control option considered. Where we have selected additional controls, the controls are shown to be technically feasible at similar facilities. Issues associated with the reliability of the emission units, if any, are resolvable.

Comment: MDEQ requested that EPA extend the comment period to sixty days from the date of the publication of corrections, or July 16, 2012.

Response: The comment period for our proposal closed on June 19, 2012. We carefully considered the request for an extension to the comment period. We took into consideration how an extension might affect our ability to consider comments received on the

proposed action and still comply with our consent decree deadlines. We do note that our May 1, 2012, public hearing in Helena, Montana and May 2, 2012, public hearing in Billings, Montana were well attended and provided an opportunity for people to comment on our proposal. We also note that the corrections published May 17, 2012, (77 FR 29270) primarily amended typographical errors.[71]

Comment: MDEQ suggested that EPA issue a request for additional comment to clarify the scope of the proposed FIP. MDEQ asserted that such a clarification is necessary to prevent confusion among the public regarding the Regional Haze Rule's prevention and correction of adverse health effects, about which EPA received multiple comments. MDEQ warned that ''the level of this misperception threatens to pervert not only the National Goal, but, ostensibly, the public health goals of Section 110.''

Response: We do not agree that the scope of the proposed FIP requires clarification. At no point in the proposed FIP did we discuss public health impacts as a consideration in our analyses, as they were not. As stated elsewhere, we agree that the Regional Haze Rule is not a health-based standard, and that we are not authorized to consider public health impacts in promulgating our FIP for purposes of this action. However, we have not been presented any information from the public to indicate that there is confusion that that reduction of visibility impairing pollutants also provides health benefits.

Comment: One commenter stated that the Cheyenne Reservation was given Class I air quality designation and that according to that designation there is not supposed to be any degradation of that air.

Response: The Regional Haze Rule requires analysis for the 156 mandatory Class I areas listed at 40 CFR Part 81. The Cheyenne Reservation is not one of these federally mandated Class I areas.

Comment: WEG stated that EPA overlooked, in two respects, the requirement of section 110(l) of the Act to prevent interference with attainment or maintenance of the NAAQS. First, WEG stated that EPA has not demonstrated that this FIP adequately safeguards the 2006 $PM_{2.5}$ NAAQS, the 2008 ozone NAAQS, the 2010 1-hour NO_2 NAAQS, and the 2010 1-hour SO_2 NAAQS. In particular, WEG noted that the FIP emissions limitations are generally expressed as 30-day rolling averages, which, in WEG's view, do not

adequately protect short-term NAAQS such as the 2010 1-hour SO_2 and $NO_2.$ Second, WEG argued that several BART emissions limitations are relaxations that may impact the NAAQS. As an example, WEG cited another portion of its comments in which WEG argued that the BART emissions limitations for Corette will allow actual emissions from Corette to increase. WEG concluded that EPA must conduct a 110(l) demonstration in order to protect public health and not interfere with maintenance and attainment of the NAAQS.

Response: EPA disagrees with WEG. In relevant part, section 110(l) provides that EPA shall not approve a revision of a plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress or any other applicable requirement of the CAA. First, WEG does not explain how section 110(l) applies to EPA's initial promulgation of a FIP for certain regional haze requirements when there is no existing SIP to meet those requirements. Second, to the extent that section 110(l) applies, EPA's promulgation of this FIP satisfies its requirements. It is EPA's consistent interpretation of section 110(l) that a SIP revision does not interfere with attainment and maintenance of the NAAQS if the revision at least preserves the status quo air quality by not relaxing or removing any existing emissions limitation or other SIP requirement. EPA does not believe that a full attainment or maintenance demonstration for each NAAQS is required for every SIP revision under section 110(l).

In this case, the FIP imposes new emissions limitations on a number of existing sources, and it does not relax any existing emissions limitations or other SIP requirements. WEG's statement that actual emissions at Corette and other BART sources might rise to the BART limit misses the point: In the absence of the BART limit (or any other limit), those actual emissions could increase much more. In other words, imposing an emissions limitation where one did not exist before is necessarily a more stringent requirement, regardless of actual emissions. Nor does WEG explicitly identify any existing emissions limitation or other SIP requirement that is relaxed by the FIP. For that matter, nothing in the proposal, or in the preamble or regulatory text for this rule, purports to modify any existing SIP-approved emissions limitation or other SIP requirement. Thus, even if there were such a requirement—and WEG has identified none—it would not be

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[71] We corrected some technical information in the Holcim SO_2 BART analysis. See 77 FR 29270.

relaxed by this FIP. EPA therefore concludes that, to the extent that section 110(l) is applicable to this FIP, its requirements are satisfied.

Comment: Commenter stated that the input of Montana residents should be given more weight than the input of special interest groups that receive support from outside the State. Commenter also requested that future hearings be held in areas of impact.

Response: Any commenter who submits a comment on the proposed FIP, either orally or written, during the public comment period is entitled to do so. EPA takes all comments into consideration in making its final decision on the FIP. If future hearings are required for any reason, we will do the best we can to ensure access is available to all those who wish to participate.

V. Changes From Proposed Rule and Reasons for the Changes

A. Emission Limits for Corette

We proposed a PM emission limit of 0.10 lb/MMBtu for Corette at 40 CFR 52.1396(c). We inadvertently stated that we were imposing an emission limit of 0.10 lb/MMBtu in the preamble to our proposed FIP (77 FR 24047) and also at 40 CFR 53.1396(c)(1). PPL commented that the emission limit in the proposed FIP was flawed and PPL provided additional information indicating that over the past five years, stack test results have shown that PM emissions have ranged from 0.059 lb/MMBtu to 0.252 lb/MMBtu. We have changed the emission limit in the final regulatory requirements at 40 CFR 1396(c)(1). In the final FIP, we are establishing a PM emission limit of 0.26 lb/MMBtu.

We proposed a SO_2 emission limit of 0.70 lb/MMBtu and a NO_X emission limit of 0.40 lb/MMBtu for Corette at 40 CFR 52.1396(c). In the final FIP, we are establishing a SO_2 emission limit of 0.57 lb/MMBtu and a NO_X emission limit of 0.35 lb/MMBtu. We have made this change as a result of the comments we received. One commenter stated that EPA must increase the limits to no less than 0.81 lb/MMBtu for SO_2 and 0.46 lb/MMBtu for NO_X in order to account for compliance over a 30-day rolling average. By contrast, another commenter stated that our proposed emission limits were too high and would actually result in increased emissions.

Based on these comments, we have reassessed the SO_2 and NO_X emission limits for Corette. In order to establish appropriate emission limits, we conducted a statistical analysis of the monthly emissions data contained in the CAMD emissions system. For the

period 2000–2010, the 99th percentile monthly SO_2 emission rate was 0.548 lb/MMBtu. Similarly, the 99th percentile monthly NO_X emission rate was 0.335 lb/MMBtu. In our final action, we are establishing emission limits slightly above these 99th percentile emission rates in order to allow a sufficient margin for compliance. This is because the emission limits must apply at all times, including during startup, shutdown, and malfunction. The revised emission rates are 0.57 lb/MMBtu for SO_2 and 0.35 lb/MMBtu for NO_X, both on a 30-day rolling average. We have revised the emission limits for Corette contained in section 52.1396(c)(1) accordingly.

B. Changes to 40 CFR 52.1396(c)(2)— Emission Limitations for Cement Kilns

In response to a comment from Holcim that EPA failed to consider the NO_X control technology already installed at the Trident cement plant, and that EPA failed to give proper weight to the excessively high average cost-effectiveness ($4,279/ton) and incremental cost-effectiveness ($8,029/ton) of a switch to indirect firing and a Low-NO_X Burner (LNB), we have removed switching to indirect firing and a LNB from consideration as an option for further reducing NO_X emissions and are treating any NO_X emission reduction that may have been achieved from installation of a new burner as part of the emissions baseline. We have recalculated the BART limit for NO_X to reflect a 50% reduction in NO_X emissions from that baseline by addition of SNCR alone, rather than the 58% reduction we previously used, which reflected a switch to indirect firing and LNB plus SNCR. The recalculated NO_X BART limit is 6.5 lb/ton clinker. We have replaced the NO_X emission limit of 5.5 lb/ton clinker from our proposal with 6.5 lb/ton clinker, on a 30-day rolling average.

Also, during our evaluation of comments on PM BART from Ash Grove, we found that the table of emission limits for cement kilns, at section 52.1396(c)(2) of our proposal, needed to clarify that the PM emission limit for Ash Grove is in lb/hr, not lb/ton clinker. Only the PM emission limit for Holcim is in lb/ton clinker. The column header for PM emission limits for both cement kilns erroneously said ''lb/ton clinker.'' We have corrected this error by changing the header from ''PM Emission Limit (lb/ton clinker)'' to ''PM Emission Limit.'' We did not change the text of the PM emission limit for Ash Grove, as it is already clear in that text that the limit is in lb/hr. However, at the bottom of the column, we have clarified

the PM emission limit for Holcim to say ''0.77 lb/ton clinker'' rather than ''0.77 lb/ton.''

C. Change to 40 CFR 52.1396(d)— Compliance Date

In response to a comment from Ash Grove which identified the failure of our regulatory text at 40 CFR 52.1396(d) to specify the SO_2 and PM compliance dates described in the preamble to our proposed rule, we have revised 40 CFR 52.1396(d) to read as follows:

The owners and operators of the BART sources subject to this section shall comply with the emissions limitations and other requirements of this section as follows, unless otherwise indicated in specific paragraphs: Compliance with PM limits is required within 30 days of the effective date of this rule. Compliance with SO_2 and NO_X limits is required within 180 days of the effective date of this rule, unless installation of additional emission controls is necessary to comply with emission limitations under this rule, in which case compliance is required within five years of the effective date of this rule.

D. Change to 40 CFR 52.1396(e)(3)— CEMS for Cement Kilns

In response to a comment from Ash Grove Cement that this section should be revised to include an exception from CEMS data collection during CEMS breakdowns, repairs, calibration checks and zero and span adjustments, we have added the following language from 40 CFR part 60, subpart F, New Source Performance Standards for cement kilns, at 40 CFR 60.63(b):

You must operate the monitoring system and collect data at all required intervals at all times the affected source is operating, except for periods of monitoring systems malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

Also, during our evaluation of comments from Ash Grove on CEMS requirements, we found that section 52.1396(e)(3) inadvertently failed to cross-reference the requirements for CEMS for cement kilns at 40 CFR 60.63(g). Section 52.1396(e)(3) only cross-referenced 60.63(f). There are important requirements for cement kiln CEMSs at 40 CFR 60.63(g), as well as important CEMS requirements at 60.63(h) which are cross-referenced only by 60.63(g) and not by 60.63(f). We have therefore added ''and (g),'' such that the first sentence of section 52.1396(e)(3) now reads as follows:

At all times after the compliance date specified in paragraph (d) of this section, the owner/operator of each unit shall maintain,

calibrate, and operate a CEMS, in full compliance with the requirements found at 40 CFR 60.63(f) and (g), to accurately measure concentration by volume of SO_2 and NO_X emissions into the atmosphere from each unit.

E. Change to 40 CFR 52.1396(e)(4)(ii)— Compliance Determination Methods for SO_2 and NO_X at Cement Kilns

In response to a comment from Ash Grove that the formula at section 52.1396(e)(4)(ii) of our proposal incorrectly expresses the concentrations of SO_2 and NO_X in grains per dry standard cubic foot, rather than in parts per million, we have deleted the equation E = (CsQs)/(PK) from this section, as well as the definitions of terms in that equation, and replaced it with the following equation, which appears in the proposed amendments to 40 CFR part 60, subpart F, New Source Performance Standards for cement kilns, published in the **Federal Register** on July 18, 2012:

$$E_D = k \frac{1}{(n)} \sum_{i=1}^{n} C_i Q_i / P_i$$

Where:

E_D = 30 kiln operating day average emission rate of NO_X or SO_2, lb/ton of clinker;
C_i = Concentration of NO_X or SO_2 for hour i, ppm;
Q_i = volumetric flow rate of effluent gas for hour i, where
C_i and Q_i are on the same basis (either wet or dry), scf/hr;
P_i = total kiln clinker produced during production hour i, ton/hr;
k = conversion factor, 1.194×10^{-7} for NO_X and 1.660×10^{-7} for SO_2
n = number of kiln operating hours over 30 kiln operating days, n = 1 to 720.
For each kiln operating hour for which you do not have at least one valid 15-minute CEMS data value, use the average emissions rate (lb/hr) from the most recent previous hour for which valid data are available.

F. Change to 40 CFR 52.1396(f)(1) and (f)(2)—Compliance Determinations for PM BART Limits at EGUs and Cement Kilns

In response to a verbal comment from Holcim, in a meeting with EPA in June of 2012 on the proposed FIP, that BART sources should be allowed to retain the PM stack testing schedule already established under State permits, we have added the following sentence, after the sentence in sections 52.1396(f)(1) and (f)(2) that requires the first annual PM performance stack test for PM within 60 days after the PM compliance deadline:

The results from a stack test meeting the requirements of this paragraph that was completed within 12 months prior to the

compliance deadline can be used in lieu of the first stack test required. If this option is chosen, then the next annual stack test shall be due no more than 12 months after the stack test that was used.

The meeting between Holcim and EPA is documented in the docket for this rulemaking.

G. Change to 40 CFR 52.1396(f)(2)— Compliance Determinations for Cement Kiln PM BART Limits

Consistent with our clarification of the table of PM emission limits for cement kilns at 40 CFR 52.1396(c)(2), we have clarified 40 CFR 52.1396(f)(2), to indicate that the emission rate of PM shall be reported in lb/hr for Ash Grove and in lb/ton clinker for Holcim. We have also clarified that the average of the results of three test runs for PM shall be used for demonstrating compliance. Specifically, we have added the following language after the third sentence of section 52.1396(f)(2):

The average of the results of three test runs shall be used for demonstrating compliance. For Ash Grove, the emission rate of particulate matter shall be computed for each run in pounds per hour (lb/hr). For Holcim, the emission rate (E) of particulate matter shall be computed for each run in lb/ton clinker, using the following equation: * * *

We have also revised section 52.1396(f)(2) in response to a comment from Ash Grove that the equation at 40 CFR 52.1396(e)(4)(ii), cross-referenced by this section 52.1396(f)(2), for calculating emissions in lb/ton clinker, is not valid for calculating SO_2 and NO_X emissions, but is only valid for calculating PM emissions. Therefore, we have moved this equation from section 52.1396(e)(4)(ii) to section 52.1396(f)(2). We have also changed the pollutant in the equation to PM. We have also clarified (as explained above) that the equation is to be used for calculating PM in lb/ton clinker only for Holcim, not for Ash Grove (which, as explained above, is subject to a PM emission limit in lb/hr, not in lb/ton clinker). Below is the equation we have now inserted into section 52.1396(f)(2), immediately after the revised text described above:

E = (CsQs)/(PK)

Where:

E = emission rate of PM, lb/ton of clinker produced
Cs = concentration of PM in grains per standard cubic foot (gr/scf)
Qs = volumetric flow rate of effluent gas, where Cs and Qs are on the same basis (either wet or dry), scf/hr
P = total kiln clinker production rate, tons/hr, and
K = conversion factor, 7000 gr/lb

We have also deleted the cross-reference to section 52.1396(e)(4)(ii) for this equation.

H. Change to 40 CFR 52.1396(h)(6)— Recordkeeping Requirements for Cement Kilns

In response to a comment from Ash Grove that the reference to ''40 CFR Part 75'' should be deleted because Part 75 applies only to electrical generating units, not to cement kilns, we have deleted that reference. We note that since the monitoring requirements for cement kilns in the FIP, at 40 CFR 52.1396(e)(3) and (4), and at 40 CFR 52.1396(f)(2), do not cross-reference Part 75, there are no applicable Part 75 recordkeeping requirements in the FIP. Section 52.1396(h)(6) now reads as follows:

Any other records required by 40 CFR part 60, subpart F, or 40 CFR part 60, Appendix F, Procedure 1.

I. Changes to 40 CFR 52.1396(i)— Reporting

In response to a comment from Ash Grove that the first sentence of this section mistakenly references 40 CFR 53.1395(n) and (o), rather than 52.1396(n) and (o), we have made the correction.

J. Change to 40 CFR 52.1396(i)(1) and (i)(2)—Reporting for CEMS for SO_2 and NO_X

In response to a comment from Ash Grove that the reporting frequency for CEMS excess emission reports and CEMS performance reports for cement kilns should be changed from quarterly to semiannual, because reporting requirements under other programs (Title V and NESHAP) only require semiannual reporting, we have changed the frequency to semiannual, but have kept the frequency at quarterly for EGUs.

We note that the general provisions of NSPS subpart A, at 40 CFR 60.7(c), which we used as a template for our FIP provisions for CEMS reporting, require semiannual excess emission reports and monitoring system performance reports, except when more frequent reporting is specifically required by an applicable subpart, or if the Administrator, on a case-by-case basis, determines that more frequent report is necessary to accurately assess the compliance status of the source. NSPS subpart F for cement kilns does not specify more frequent reporting.

Therefore, we have deleted ''quarterly'' from the first sentence of section 52.1396(i)(1) and from the first sentence of section 52.1396(i)(2). After the first sentence in each of those

sections, we have inserted the following sentence: ''Reports shall be submitted quarterly for EGUs and semiannually for cement kilns.''

K. Changes to 40 CFR 52.1396 for Devon Energy, Blaine County #1 Compressor Station

In the final FIP, we are clarifying testing requirements, monitoring, recordkeeping and reporting requirements, and emission limitations for Devon Energy, Blaine County #1 Compressor Station. We made these changes in response to a comment stating that the requirements for this source were not practically enforceable.

We have changed the text at 40 CFR 52.1396(c)(3) to read, ''The owners/operators of LP, Blaine County #1 Compressor Station shall not emit or cause to be emitted from each 5,500 horsepower Ingersoll Rand 616 natural gas-fired compressor engine installed at the facility, total NO_X in excess of 21.8 lbs/hr (average of three stack test runs).'' We have made this change to clarify that the emission limit of 21.8 lbs/hr applies to each of the 5,500 horsepower Ingersoll Rand 616 natural gas-fired compressor engines installed at the facility and that the emission rate will be determined by averaging the results of three stack test runs.

We have changed the text at 40 CFR 52.1396(e)(5) to read, ''The owner/operator of Blaine County #1 Compressor Station shall install a temperature-sensing device (i.e. thermocouple or resistance temperature detectors) before the catalyst in order to monitor the inlet temperatures of the catalyst for each engine. The owner/operator shall maintain the exhaust temperature at the inlet to the catalyst for each engine at a minimum of least 750 °F and no more than 1250 °F in accordance with the catalyst manufacturer's specifications. Also, the owner/operator shall install gauges before and after the catalyst for each engine in order to monitor pressure drop across the catalyst, and that the owner/operator maintain the pressure drop within ± 2'' water at 100% load plus or minus 10% from the pressure drop across the catalyst measured during the initial performance test. The owner/operator shall follow the manufacturer's recommended maintenance schedule and procedures for each engine and its respective catalyst. The owner/operator shall only fire each engine with natural gas that is of pipeline-quality in all respects except that the CO_2 concentration in the gas shall not be required to be within pipeline-quality.'' We have made this change to clarify that it is the exhaust

temperature that must be maintained at a minimum of at least 750 °F and no more than 1250 °F in accordance with the catalyst manufacturer's specifications, and not the engine temperature that must be kept within this temperature range. We are also making this change to clarify that the temperature range must be kept in accordance with the catalyst manufacturer's specifications and not the engine manufacturer's specifications.

We have added a new section, 40 CFR 52.1396(j) which includes testing requirements for Blaine County #1 Compressor Station. This section was inadvertently omitted from the proposed FIP, but is necessary to ensure adequate testing is performed to ensure compliance with the NO_X emission limit for Blaine County #1 Compressor Station.

We have changed 40 CFR 52.1396(k)(1) to read: ''The owner/operator shall measure NO_X emissions from each engine at least semi-annually or once every six-month period to demonstrate compliance with the emission limits. To meet this requirement, the owner/operator shall measure NO_X emissions from each engine using a portable analyzer and a monitoring protocol approved by EPA.'' We have changed the first sentence from referring to engines to refer to each engine to clarify that NO_X emissions must be measured from each engine.

We have added a new paragraph at 40 CFR 52.1396(k)(9) to read, ''The owner/operator shall keep records of all deviations from the emission limit or operating requirements (e.g., catalyst inlet temperature, pressure drop across the catalyst) for each engine. The records shall include: The date and time of the deviation, the name and title of the observing employee and a brief description of the deviation and the measures taken to address the deviation and prevent future occurrences.'' We have made this change to ensure that adequate records are kept by the owner or operator of Blaine County #1 Compressor Station to demonstrate compliance with the required emission limit and appropriate operation of the NSCR system.

We have changed the text of 40 CFR 52.1396(k)(10) to correct a typographical error and to add to the requirements that the owner/operator of Blaine County #1 Compressor Station must maintain records of deviations from operating requirements for a period of at least five years and that these records must be made available upon request by EPA.

VI. Statutory and Executive Order Reviews

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

This action will finalize a SIP approval for a revision to Montana's Smoke Management plan and a source-specific Regional Haze FIP for imposing federal controls to meet BART requirements for PM, NO_X and SO_2 emissions on five specific units at four sources in Montana (Ash Grove, Holcim, Colstrip Units 1 and 2, and Corette) and imposing controls to meet RP requirements for NO_X emissions at one additional source (Devon) in Montana. The net result of the FIP action is that EPA is proposing direct emission controls on selected units at five sources. The sources in question are two large electric generating plants (one plant includes two units), two cement plants, and one gas compressor station. This action also imposes notification requirements on CFAC and M2Green Redevelopment LLC. This type of action is exempt from review under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011).

B. Paperwork Reduction Act

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

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

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

C. Regulatory Flexibility Act

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

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

After considering the economic impacts of this action on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. The Regional Haze FIP that EPA is finalizing consists of imposing federal controls to meet BART and RP requirements for PM, NO$_X$ and SO$_2$ emissions on specific sources as described above in section A. None of these sources are owned by small entities, and therefore are not small entities.

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. Table 1 notes that the cumulative total annual costs for this action are $13.7 million. 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.

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, because it merely addresses the State of Montana not meeting its obligation to adopt a SIP that meets the regional haze requirements under the CAA. Thus, Executive Order 13132 does not apply to this action. 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 this rule from state and local officials. A summary of each comment and EPA's response to those comments is provided in section IV of this preamble.

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

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This action applies to only seven sources in Montana. Thus, Executive Order 13175 does not apply to this rule. Although Executive Order 13175 does not apply to this action, EPA did send letters, dated October 7, 2011, to each of the Montana tribes explaining our regional haze FIP action and offering consultation. We did not receive any written or verbal requests from the Montana tribes for more information or for consultation. As a follow-up to our letter, we invited all of the tribes to a January 5, 2012 conference call. The call was attended by tribal Air Program Managers and one Environmental Director from tribes from four reservations. We also met with the Montana tribes prior to the start of the public hearings held in Helena and Billings, Montana. EPA specifically solicited additional comment on this rule from tribal officials and we received comments and responded to them in section IV of this preamble.

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

Executive Order 13045: *Protection of Children from Environmental Health Risks and Safety Risks* (62 FR 19885, April 23, 1997), applies to any rule that: (1) Is determined to be economically significant as defined under Executive Order 12866; and (2) concerns an environmental health or safety risk that we have reason to believe may have a disproportionate effect on children. EPA interprets EO 13045 as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the EO has the potential to influence the regulation. This action is not subject to EO 13045 because it implements specific standards established by Congress in statutes. However, to the extent this rule limits emissions of NO$_X$, SO$_2$, and PM, the rule will have a beneficial effect on children's health by reducing air pollution.

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

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

I. National Technology Transfer and Advancement Act

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

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

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

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

We have determined that this rule will not have disproportionately high and adverse human health or environmental effects on minority or

low-income populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population. This rule limits emissions of NO_X, SO_2, and PM from five sources in Montana.

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. Section 804 exempts from section 801 the following types of rules (1) rules of particular applicability; (2) rules relating to agency management or personnel; and (3) rules of agency organization, procedure, or practice that do not substantially affect the rights or obligations of non-agency parties. 5 U.S.C 804(3). EPA is not required to submit a rule report regarding today's action under section 801 because this action is a rule of particular applicability. This rule finalizes a FIP for seven sources.

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 November 19, 2012. Pursuant to CAA section 307(d)(1)(B), this action is subject to the requirements of CAA section 307(d) as it promulgates a FIP under CAA section 110(c). Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. See CAA section 307(b)(2).

List of Subjects in 40 CFR Part 52

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

Dated: August 15, 2012.

Lisa P. Jackson,
Administrator.

40 CFR part 52 is amended as follows:

PART 52—[AMENDED]

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

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

Subpart BB—Montana

■ 2. Section 52.1370 is amended by revising paragraph (c)(27)(i)(H) to read as follows:

§ 52.1370   Identification of plan.

*   *   *   *   *
  (c) * * *
  (27) * * *
  (i) * * *
  (H) Appendix G–2, Montana Smoke Management Plan, effective April 15, 1988, is removed and replaced by § 52.1395.

*   *   *   *   *

■ 3. Add section 52.1395 to read as follows:

§ 52.1395   Smoke management plan.

The Department considers smoke management techniques for agriculture and forestry management burning purposes as set forth in 40 CFR 51.308(d)(3)(v)(E). The Department considers the visibility impact of smoke when developing, issuing, or conditioning permits and when making dispersion forecast recommendations through the implementation of Title 17, Chapter 8, subchapter 6, ARM, Open Burning.

■ 4. Add section 52.1396 to read as follows:

§ 52.1396   Federal implementation plan for regional haze.

(a) *Applicability.* This section applies to each owner and operator of the following coal fired electric generating units (EGUs) in the State of Montana:

PPL Montana, LLC, Colstrip Power Plant, Units 1, 2; and PPL Montana, LLC, JE Corette Steam Electric Station. This section also applies to each owner and operator of cement kilns at the following cement production plants: Ash Grove Cement, Montana City Plant; and Holcim (US) Inc. Cement, Trident Plant. This section also applies to each owner or operator of Blaine County #1 Compressor Station. This section also applies to each owner and operator of CFAC and M2 Green Redevelopment LLC, Missoula site.

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

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

Continuous emission monitoring system or CEMS means the equipment required by this section to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of SO_2 or NO_X emissions, other pollutant emissions, diluent, or stack gas volumetric flow rate.

Kiln operating day means a 24-hour period between 12 midnight and the following midnight during which the kiln operates.

NO_X means nitrogen oxides.

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

PM means filterable total particulate matter.

SO_2 means sulfur dioxide.

Unit means any of the EGUs or cement kilns identified in paragraph (a) of this section.

(c) *Emissions limitations.* (1) The owners/operators of EGUs subject to this section shall not emit or cause to be emitted PM, SO_2 or NO_X in excess of the following limitations, in pounds per million British thermal units (lb/ MMBtu), averaged over a rolling 30-day period for SO_2 and NO_X:

Source name	PM emission limit (lb/MMBtu)	SO₂ emission limit (lb/MMBtu)	NOₓ emission limit (lb/MMBtu)
Colstrip Unit 1	0.10	0.08	0.15
Colstrip Unit 2	0.10	0.08	0.15
JE Corette Unit 1	0.26	0.57	0.35

(2) The owners/operators of cement kilns subject to this section shall not emit or cause to be emitted PM, SO₂ or NO$_X$ in excess of the following limitations, in pounds per ton of clinker produced, averaged over a rolling 30-day period for SO₂ and NO$_X$:

Source name	PM emission limit	SO₂ emission limit (lb/ton clinker)	NO$_X$ emission limit (lb/ton clinker)
Ash Grove Cement	If the process weight rate of the kiln is less than or equal to 30 tons per hour, then the emission limit shall be calculated using E = 4.10p$^{0.67}$ where E = rate of emission in pounds per hour and p = process weight rate in tons per hour; however, if the process weight rate of the kiln is greater than 30 tons per hour, then the emission limit shall be calculated using E = 55.0p$^{0.11}$ − 40, where E = rate of emission in pounds per hour and P = process weight rate in tons per hour.	11.5	8.0
Holcim (US) Inc	0.77 lb/ton clinker	1.3	6.5

(3) The owners/operators of LP, Blaine County #1 Compressor Station shall not emit or cause to be emitted from each 5,500 horsepower Ingersoll Rand 616 natural gas-fired compressor engine installed at the facility total NO$_X$ in excess of 21.8 lbs/hr (average of three stack test runs).

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

(d) *Compliance date.* The owners and operators of Blaine County #1 Compressor Station shall comply with the emissions limitation and other requirements of this section as expeditiously as practicable, but no later than July 31, 2018. The owners and operators of the BART sources subject to this section shall comply with the emissions limitations and other requirements of this section as follows, unless otherwise indicated in specific paragraphs: Compliance with PM limits is required within 30 days of the effective date of this rule. Compliance with SO₂ and NO$_X$ limits is required within 180 days of the effective date of this rule, unless installation of additional emission controls is necessary to comply with emission limitations under this rule, in which case compliance is required within five years of the effective date of this rule.

(e) *Compliance determinations for SO₂ and NO$_X$.* (1) *CEMS for EGUs.* At all times after the compliance date specified in paragraph (d) of this section, the owner/operator of each unit shall maintain, calibrate, and operate a CEMS, in full compliance with the requirements found at 40 CFR part 75, to accurately measure SO₂, NO$_X$, diluent, and stack gas volumetric flow rate from each unit. The CEMS shall be used by the owner/operator to determine compliance with the emission limitations in paragraph (c) of this section for each unit.

(2) *Method for EGUs.* (i) For any hour in which fuel is combusted in a unit, the owner/operator of each unit shall calculate the hourly average SO₂ and NO$_X$ concentration in lb/MMBtu at the CEMS in accordance with the requirements of 40 CFR part 75. At the end of each boiler operating day, the owner/operator shall calculate and record a new 30-day rolling average emission rate in lb/MMBtu from the arithmetic average of all valid hourly emission rates from the CEMS for the current boiler operating day and the previous 29 successive boiler operating days.

(ii) An hourly average SO₂ or NO$_X$ emission rate in lb/MMBtu is valid only if the minimum number of data points, as specified in 40 CFR part 75, is acquired by the owner/operator for both the pollutant concentration monitor (SO₂ or NO$_X$) and the diluent monitor (O₂ or CO₂).

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

(3) *CEMS for cement kilns.* At all times after the compliance date specified in paragraph (d) of this section, the owner/operator of each unit shall maintain, calibrate, and operate a CEMS, in full compliance with the requirements found at 40 CFR 60.63(f) and (g), to accurately measure concentration by volume of SO₂ and NO$_X$ emissions into the atmosphere from each unit. The CEMS shall be used by the owner/operator to determine compliance with the emission limitations in paragraph (c) of this section for each unit, in combination with data on actual clinker production. The owner/operator must operate the monitoring system and collect data at all required intervals at all times the affected unit is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

(4) *Method for cement kilns.* (i) The owner/operator of each unit shall record the daily clinker production rates.

(ii) The owner/operator of each unit shall calculate and record the 30-operating day rolling emission rates of SO₂ and NO$_X$, in lb/ton of clinker produced, as the total of all hourly emissions data for the cement kiln in the preceding 30 days, divided by the total tons of clinker produced in that kiln during the same 30-day operating period, using the following equation:

$$E_D = k \frac{1}{(n)} \sum_{i=1}^{n} C_i Q_i / P_i$$

Where:
E_D = 30 kiln operating day average emission rate of NO$_X$ or SO₂, lb/ton of clinker;
C_i = Concentration of NO$_X$ or SO₂ for hour i, ppm;
Q_i = volumetric flow rate of effluent gas for hour i, where
C_i and Q_i are on the same basis (either wet or dry), scf/hr;
P_i = total kiln clinker produced during production hour i, ton/hr;
k = conversion factor, 1.194×10^{-7} for NO$_X$ and 1.660×10^{-7} for SO₂; and
n = number of kiln operating hours over 30 kiln operating days, n = 1 to 720.

For each kiln operating hour for which the owner/operator does not have at least one valid 15-minute CEMS data value, the owner/operator must use the average emissions rate (lb/hr) from the most recent previous hour for which valid data are available. Hourly clinker production shall be determined by the owner/operator in accordance with the requirements found at 40 CFR 60.63(b).

(iii) At the end of each kiln operating day, the owner/operator of each unit shall calculate and record a new 30-day rolling average emission rate in lb/ton clinker from the arithmetic average of all valid hourly emission rates for the current kiln operating day and the previous 29 successive kiln operating days.

(5) *Method for compressor station.* The owner/operator of Blaine County #1 Compressor Station shall install a temperature-sensing device (i.e. thermocouple or resistance temperature detectors) before the catalyst in order to monitor the inlet temperatures of the catalyst for each engine. The owner/operator shall maintain the exhaust temperature at the inlet to the catalyst for each engine at a minimum of least 750 °F and no more than 1250 °F in accordance with the catalyst manufacturer's specifications. Also, the owner/operator shall install gauges before and after the catalyst for each engine in order to monitor pressure drop across the catalyst. During the initial performance test the owner/operator maintain the pressure drop within ± 2″ water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured. The owner/operator shall follow the manufacturer's recommended maintenance schedule and procedures for each engine and its respective catalyst. The owner/operator shall only fire each engine with natural gas that is of pipeline-quality in all respects except that the CO_2 concentration in the gas shall not be required to be within pipeline-quality.

(f) *Compliance determinations for particulate matter.*

(1) *EGU particulate matter BART limits.* Compliance with the particulate matter BART emission limits for each EGU BART unit shall be determined by the owner/operator from annual performance stack tests. Within 60 days of the compliance deadline specified in paragraph (d) of this section, and on at least an annual basis thereafter, the owner/operator of each unit shall conduct a stack test on each unit to measure particulate emissions using EPA Method 5, 5B, 5D, or 17, as appropriate, in 40 CFR part 60, Appendix A. A test shall consist of three runs, with each run at least 120 minutes in duration and each run collecting a minimum sample of 60 dry standard cubic feet. Results shall be reported by the owner/operator in lb/MMBtu. The results from a stack test meeting the requirements of this paragraph that were completed within 120 days prior to the compliance date can be used by the owner/operator in lieu of the first stack

test required. In addition to annual stack tests, owner/operator shall monitor particulate emissions for compliance with the BART emission limits in accordance with the applicable Compliance Assurance Monitoring (CAM) plan developed and approved in accordance with 40 CFR part 64.

(2) *Cement kiln particulate matter BART limits.* Compliance with the particulate matter BART emission limits for each cement kiln shall be determined by the owner/operator from annual performance stack tests. Within 60 days of the compliance deadline specified in paragraph (d) of this section, and on at least an annual basis thereafter, the owner/operator of each unit shall conduct a stack test on each unit to measure particulate matter emissions using EPA Method 5, 5B, 5D, or 17, as appropriate, in 40 CFR part 60, Appendix A. A test shall consist of three runs, with each run at least 120 minutes in duration and each run collecting a minimum sample of 60 dry standard cubic feet. The average of the results of three test runs shall be used by the owner/operator for demonstrating compliance.

Clinker production shall be determined in accordance with the requirements found at 40 CFR 60.63(b). Results of each test shall be reported by the owner/operator as the average of three valid test runs. In addition to annual stack tests, owner/operator shall monitor particulate emissions for compliance with the BART emission limits in accordance with the applicable Compliance Assurance Monitoring (CAM) plan developed and approved in accordance with 40 CFR part 64.

(i) For Ash Grove Cement, the emission rate of particulate matter shall be computed by the owner/operator for each run in pounds per hour (lb/hr).

(ii) For Holcim, the emission rate (E) of particulate matter shall be computed by the owner/operator for each run in lb/ton clinker, using the following equation:

$$E = (C_sQ_s)/PK$$

Where:

E = emission rate of PM, lb/ton of clinker produced;
C_s = concentration of PM in grains per standard cubic foot (gr/scf);
Q_s = volumetric flow rate of effluent gas, where C_s and Q_s are on the same basis (either wet or dry), scf/hr;
P = total kiln clinker production, tons/hr; and
K = conversion factor, 7000 gr/lb,

(g) *Recordkeeping for EGUs.* The owner/operator shall maintain the following records for at least five years:

(1) All CEMS data, including the date, place, and time of sampling or

measurement; parameters sampled or measured; and results.

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

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

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

(5) All particulate matter stack test results.

(h) *Recordkeeping for cement kilns.* The owner/operator shall maintain the following records for at least five years:

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

(2) All particulate matter stack test results.

(3) All records of clinker production.

(4) Records of quality assurance and quality control activities for emissions measuring systems including, but not limited to, any records required by 40 CFR part 60, appendix F, Procedure 1.

(5) Records of all major maintenance activities conducted on emission units, air pollution control equipment, CEMS and clinker production measurement devices.

(6) Any other records required by 40 CFR part 60, Subpart F, or 40 CFR part 60, Appendix F, Procedure 1.

(i) *Reporting.* All reports under this section, with the exception of 40 CFR 52.1396(n) and (o), shall be submitted by the owner/operator to the Director, Office of Enforcement, Compliance and Environmental Justice, U.S. Environmental Protection Agency, Region 8, Mail Code 8ENF–AT, 1595 Wynkoop Street, Denver, Colorado 80202–1129.

(1) The owner/operator of each unit shall submit excess emissions reports for SO_2 and NO_X BART limits. Reports shall be submitted quarterly by the owner/operator for EGUs and semiannually for cement kilns, no later than the 30th day following the end of each calendar quarter or semiannual period, respectively. Excess emissions means emissions that exceed the emissions limits specified in paragraph (c) of this section. The reports shall include the magnitude, date(s), and duration of each period of excess emissions, specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the unit, the nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted.

(2) The owner/operator of each unit shall submit CEMS performance reports, to include dates and duration of each period during which the CEMS was inoperative (except for zero and span adjustments and calibration checks), reason(s) why the CEMS was inoperative and steps taken to prevent recurrence, and any CEMS repairs or adjustments. The owner/operator shall submit reports quarterly for EGUs and semiannually for cement kilns.

(i) *For EGUs:* The owner/operator of each unit shall also submit results of any CEMS performance tests required by 40 CFR part 75 (Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits).

(ii) *For cement kilns:* Owner/operator of each unit shall also submit results of any CEMS performance tests required by 40 CFR part 60, appendix F, Procedure 1 (Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits).

(3) When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted during the reporting period, the owner/operator shall state such information in the quarterly reports required by sections (h)(1) and (2) of this section.

(4) The owner/operator of each unit shall submit results of any particulate matter stack tests conducted for demonstrating compliance with the particulate matter BART limits in paragraph (c) of this section within 60 days after the completion of the test.

(5) The owner/operator of each unit shall submit semi-annual reports of any excursions under the approved CAM plan in accordance with the schedule specified in the source's title V permit.

(j) Testing requirements for Blaine County #1 Compressor Station:

(1) An initial performance test shall be conducted by the owner/operator for each engine for measuring NO_X emissions from the engines to demonstrate initial compliance with the emission limits. The initial performance test shall be conducted by the owner/operator as expeditiously as practicable, but no later than October July 31, 2018.

(2) Upon change out of the catalyst for each engine a performance test shall be conducted by the owner/operator for measuring NO_X from the engines to demonstrate compliance with the emission limits and re-establish temperature and pressure correlations. The performance test shall be conducted by the owner/operator within 90 calendar days of the date of the catalyst change out.

(3) The performance tests for NO_X shall be conducted by the owner/operator in accordance with the test methods specified in 40 CFR Part 60, Appendix A. EPA Reference Method 7E shall be used to measure NO_X emissions.

(4) All tests conducted by the owner/operator for NO_X emissions must meet the following requirements:

(i) All tests shall be performed at a maximum operating rate (90 to 110 percent of engine capacity at site elevation).

(ii) During each test run, data shall be collected on all parameters necessary to document how NO_X emissions in pounds per hour were measured or calculated (such as test run length, minimum sample volume, volumetric flow rate, moisture and oxygen corrections, etc.). The temperature at the inlet to the catalyst and the pressure drop across the catalyst shall also be measured and recorded during each test run for each engine.

(iii) Each source test shall consist of at least three 1-hour or longer valid test runs. Emission results shall be reported as the arithmetic average of all valid test runs and shall be in terms of the emission limits (pounds per hour).

(iv) A source test plan for NO_X emissions shall be submitted to EPA at least 45 calendar days prior to the scheduled performance test.

(v) The source test plan shall include and address the following elements:

(A) Purpose of the test;

(B) Engines and catalysts to be tested;

(C) Expected engine operating rate(s) during test;

(D) Schedule/date(s) for test;

(E) Sampling and analysis procedures (sampling locations, test methods, laboratory identification);

(F) Quality assurance plan (calibration procedures and frequency, sample recovery and field documentation, chain of custody procedures); and

(G) Data processing and reporting (description of data handling and quality control procedures).

(k) Monitoring, recordkeeping, and reporting requirements for Blaine County #1 Compressor Station:

(1) The owner/operator shall measure NO_X emissions from each engine at least semi-annually or once every six month period to demonstrate compliance with the emission limits. To meet this requirement, the owner/operator shall measure NO_X emissions from each engine using a portable analyzer and a monitoring protocol approved by EPA.

(2) The owner/operator shall submit the analyzer specifications and monitoring protocol to EPA for approval within 45 calendar days prior to installation of the NSCR unit.

(3) Monitoring for NO_X emissions shall commence during the first complete calendar quarter following the owner/operator's submittal of the initial performance test results for NO_X to EPA.

(4) The owner/operator shall measure the engine exhaust temperature at the inlet to the oxidation catalyst at least once per week and shall measure the pressure drop across the oxidation catalyst monthly.

(5) The owner/operator shall ensure that each temperature-sensing device is accurate to within plus or minus 0.75% of span and that the pressure sensing devices be accurate to within plus or minus 0.1 inches of water.

(6) The owner/operator shall keep records of all temperature and pressure measurements; vendor specifications for the thermocouples and pressure gauges; vendor specifications for the NSCR catalyst and the air-to-fuel ratio controller on each engine.

(7) The owner/operator shall keep records sufficient to demonstrate that the fuel for the engines is pipeline-quality natural gas in all respects, with the exception of the CO_2 concentration in the natural gas.

(8) The owner/operator shall keep records of all required testing and monitoring that include: The date, place, and time of sampling or measurements; the date(s) analyses were performed; the company or entity that performed the analyses; the analytical techniques or methods used; the results of such analyses or measurements; and the operating conditions as existing at the time of sampling or measurement.

(9) The owner/operator shall keep records of all deviations from the emission limit or operating requirements (e.g., catalyst inlet temperature, pressure drop across the catalyst) for each engine. The records shall include: The date and time of the deviation, the name and title of the observing employee and a brief description of the deviation and the measures taken to address the deviation and prevent future occurrences.

(10) The owner/operator shall maintain records of all required monitoring data, support information (e.g., all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required) and deviations from operating requirements for a period of at least five years from the date of the monitoring sample, measurement, or report and that these records be made available upon request by EPA.

(11) The owner/operator shall submit a written report of the results of the required performance tests to EPA within 90 calendar days of the date of testing completion.

(l) *Notifications.* (1) The owner/operator shall submit notification of commencement of construction of any equipment which is being constructed to comply with the SO$_2$ or NO$_X$ emission limits in paragraph (c) of this section.

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

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

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

(n) *Credible evidence.* Nothing in this section shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to

whether a source would have been in compliance with requirements of this section if the appropriate performance or compliance test procedures or method had been performed.

(o) *CFAC notification.* CFAC shall notify EPA 60 days in advance of resuming operation. CFAC shall submit such notice to the Director, Air Program, U.S. Environmental Protection Agency, Region 8, Mail Code 8P–AR, 1595 Wynkoop Street, Denver, Colorado 80202–1129. Once CFAC notifies EPA that it intends to resume operation, EPA will initiate and complete a BART determination after notification and revise the FIP as necessary in accordance with regional haze requirements, including the BART provisions in 40 CFR 51.308(e). CFAC will be required to install any controls that are required as soon as practicable, but in no case later than five years following the effective date of this rule.

(p) *M2Green Redevelopment LLC notification.* M2Green Redevelopment LLC shall notify EPA 60 days in advance of resuming operation. M2Green Redevelopment LLC shall submit such notice to the Director, Air Program, U.S. Environmental Protection Agency, Region 8, Mail Code 8P–AR, 1595 Wynkoop Street, Denver, Colorado 80202–1129. Once M2 Green Redevelopment LLC notifies EPA that it intends to resume operation, EPA will initiate and complete a four factor analysis after notification and revise the FIP as necessary in accordance with regional haze requirements including the ''reasonable progress'' provisions in 40 CFR 51.308(d)(1). M2 Green Redevelopment LLC will be required to install any controls that are required as soon as practicable, but in no case later than July 31, 2018.

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