

Additional Regional Haze Questions

August 24, 2006

Note: The following are questions EPA has received from various States and Regional Planning Organizations (RPOs) related to the submission of regional haze SIPs under the program described by 40 CFR 51.308. This document provides guidance to the State air pollution control agencies and the general public on meeting the regional haze SIP requirements. These requirements can be found in sections 169A and 169B of the Clean Air Act and 40 CFR 51.300-51.309. This document does not substitute for those provisions, nor is it a regulation itself. Thus, it does not impose binding, enforceable requirements on any party, nor does it assure that EPA may approve all instances of its application, and thus the guidance may not apply to a particular situation based upon the circumstances. The EPA and State decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. Any decisions by EPA regarding a particular SIP demonstration will only be made based on the statute and applicable regulations, and will only be made following notice and opportunity for public review and comment. Therefore, interested parties are free to raise questions and objections about the appropriateness of the application of this guidance to a particular situation; EPA will, and States should, consider whether or not the recommendations in this guidance are appropriate in that situation. This guidance is a living document and may be revised periodically without public notice. The EPA welcomes public comments on this document at any time and will consider those comments in any future revisions of this guidance document.

BART

1. Should a State promulgate a BART rule? Should a State's BART rule declare that VOC (and possibly ammonia) is/are not visibility impairing pollutant(s), or can this declaration be part of the SIP narrative?

The regional haze rule (RHR) does not require that States promulgate BART rules. States are, however, required under 40 CFR 51.230 to show they have the legal authority to carry out the SIP. To the extent a BART rule can aid in this requirement, then it should be considered. A State's regional haze (RH) SIP submittal must include source-specific BART emission limits and compliance schedules for each source subject to BART. See 40 CFR 51.308(e). All regulatory requirements must be approved into the SIP.

A State's BART rule should not declare that VOCs or ammonia are not visibility-impairing pollutants unless the State has evidence that VOCs (or ammonia) from its BART-eligible sources are not significant contributors to particle formation. Such a declaration must be substantiated in the SIP documentation. This declaration may be placed in the SIP narrative, which will be approved into the non-regulatory portion of the SIP following an opportunity for public review and comment on the State's conclusion. Furthermore, we recommend that prior to SIP submittal that collaboration between and among States and RPOs and Federal Land Managers (FLMs) occur such that the

application of exemptions or other principles used by a State/RPO is done with full knowledge among the affected States/RPOs/FLMs.

2. At sources that require BART but that have PTEs of less than 250 TPY for VOCs and ammonia, must the BART proposal analyze controls for VOCs and ammonia?

States must use their judgment to determine whether VOC or ammonia emissions from individual sources in their State are likely to have an impact on visibility in an area. For a source such as the one you have described, the State must consider whether its VOC or ammonia emissions are likely to have an impact on visibility at a Class I area. If so, the BART proposal must analyze controls for such VOCs and/or ammonia.

3. Should a State declare the exemption threshold value is 0.5 dv (or some other value) in their rule? EPA has simply set an upper bound.

The exemption threshold value selected by the State in determining whether a BART-eligible source can reasonably be anticipated to cause or contribute to visibility impairment must be specified in the SIP documentation, as must the basis for the States' selection of this threshold. The appropriateness of the threshold used by the State will be subject to public review and comment, and States should consult with the affected States/RPOs/FLMs in establishing this value.

4. How should a State document in the SIP that BART controls will be installed and in operation as expeditiously as practicable, but no later than 5 years after approval of the SIP? Must BART controls be housed in a Title V permit modification?

As specified in 40 CFR 51.308(e)(1)(v), States are required to ensure each source subject to BART install and operate BART *as expeditiously as practicable*, but in no event later than 5 years after approval of the implementation plan revision. States should ensure that BART requirements in a SIP are written in a way that clearly specifies the individual emission unit(s) subject to BART regulation and the time by which the emission unit(s) must begin to comply with the BART limit. Because the BART requirements are “applicable” requirements of the CAA, they must be included as title V permit conditions according to the procedures established in 40 CFR part 70 or 40 CFR part 71. Under 70.7(f)(1)(i) Title V permits must be reopened and revised to include new applicable requirements if the permit has three or more years of life. The reopening must be completed within 18 months after promulgation of the new applicable requirement and the reopening must follow the same procedures (public comment, etc) as apply to initial permit issuance. This may require that States provide commitments in the SIPs to ensure that all applicable construction permits under Title 1, and the operating permits under Title V are revised in time.

The following elements, at a minimum, must be addressed to ensure the BART controls are adopted into the State's SIP. These elements are discussed in detail with other circumstances in 40 CFR Part 51, Appendix Y – Section V.

- Name of source facility and the specific emission units and pollutants being controlled. (40 CFR 51.308(e)(1)(i) & (ii)).
- Specifics of the controls, control efficiency(ies), emissions reductions expected
- Enforceable emission limitations representing BART (40 CFR 51.308(d)(3);(e))
- Schedules for compliance with BART (40 CFR 51.308(d)(3);(e))
- A requirement that each source subject to BART maintains the control equipment and establish procedures to ensure such equipment is properly operated and maintained. (40 CFR 51.308(e)(v))
- Reporting, monitoring, and recordkeeping requirements adequate to determine the source's compliance (40 CFR Part 51, Appendix Y – V).
- Averaging times and reference methods to determine compliance (40 CFR Part 51, Appendix Y – V).

5. In the BART guidelines under step 4 of a BART determination is a discussion of average cost effectiveness, yet we don't see anything being averaged. If one were to average all the individual annual cost effectiveness over the remaining life of a plant, then we could see that we were averaging something. Can you explain this?

The term “average cost effectiveness” is a term that the Agency has long used to describe one method of looking at the costs of control when considering economic impacts. See e.g. New Source Review Draft Manual (Oct. 1990) at B. 36 describing the process for making best available control technology determinations (BACT). The Appendix at the end of this document contains equations that can be used for determining average cost effectiveness and should help you to understand how to estimate the “average cost effectiveness” of various control measures.

6. Is there a guideline on how to "annualize" costs (capital recovery factors and levelizing inflation adjusted operation & maintenance costs)?

Yes. The EPA *Control Cost Manual*, referenced in the final BART rule (see 70 FR 39104, 39163-39167 (July 6, 2005)). As noted in the Guidelines, the *Control Cost Manual* is updated periodically. This document is available at the following Web site: <http://www.epa.gov/ttn/catc/products.html>

7. In the BART guidelines under step 4 of a BART determination, "how do I calculate baseline emissions?" it would help if a method were suggested to depict anticipated annual emissions from the source. Otherwise, sources will do this in many different ways. Should States suggest facilities use a method similar to PSD - the highest 12 consecutive months in the past 120 months (or whatever it is for PSD)? If so, should it be different for EGUs as it is for PSD? Or, should a facility take the highest 24-hour actual rate and multiply it times their average utilization rate for the highest 2 of the past 5 years? In either case, if these cost effectiveness numbers are compared to the BACT/RACT/LAER clearinghouse, it will make a difference.

The BART Guidelines state that the baseline emissions used for estimating the average cost effectiveness of a control technology should represent a realistic depiction of

anticipated annual emissions for the source. The approach for making BACT determinations in the PSD program is similar. The methodology of looking at the annual average of the highest 24 consecutive months in the past 120 months is one approach that has been used in PSD when determining if there has been an emissions increase as a result of a modification. In some cases, this approach could be a reasonable method of estimating anticipated annual emissions for a source.

8. How do you address an issue in which the installation of a BART control causes an increase in another pollutant?

In some cases, the installation of controls to reduce emissions of a pollutant can result in collateral increases in another pollutant. For example, the use of low NO_x burners can result in an increase in CO emissions. If the increase in emissions of a collateral pollutant would trigger other requirements under the Clean Air Act, such as New Source Review, the State may include the costs, if any, of controlling emissions of a collateral pollutant to meet these other requirements in considering the economic impacts of a technology under consideration for BART.

9. How will EPA address the cost effectiveness of control options? If an option reduces more than one pollutant, how is that addressed?

If an option reduces more than one visibility-impairing pollutant, it could be justified in terms of the greater overall emission reduction. The State will need to evaluate the cost-effectiveness of controlling both pollutants in light of its evaluation of the other BART factors. In general, the greater the overall emissions from multiple pollutants, the more closely the State should consider controls on multiple pollutants.

10. It is unclear in the responses to the BART Q and A the meaning of some terms. Some appear to be interchangeable. It would be helpful to have definitions for source, site, unit, and plant-wide (as they pertain to BART).

General terms not defined in the BART Guidelines should be given the same plain language meaning that they have under other Clean Air Act programs. Terms which are defined in this and other CAA regulations, and in the statute, should retain those definitions; note however that the “BART-eligible source” refers only to stationary sources built within the BART time period (1962-77) comprised of the emissions units meeting all three BART-eligibility criteria. See 40 CFR 51.301 for definitions of “stationary source” and “BART-eligible source.” “Plantwide” means across the entire geographic entity, or across all “BART-eligible” sources at the geographic entity (depending on the context).

11. In the BART rule, are we to assume that de minimis levels for pollutants are only based on BART-eligible sources, even when the term “plant-wide” is used?

Generally yes. The approach used by EPA in the BART Guidelines for identifying a BART-eligible source begins with the identification of those emissions units at a plant

that fall within one or more BART categories and that were put into operation within the 1962-1977 timeframe. In 2004, after proposing that States be allowed to establish *de minimis* levels for pollutants at BART-eligible sources, EPA received comments suggesting that *de minimis* levels be applied on a unit by unit basis. EPA rejected this suggestion in the final rule; the regulations allow States to establish *de minimis* levels that apply to a BART-eligible source. In light of the comments received requesting that the *de minimis* exemption be applied on a unit by unit basis and its decision to reject this approach, EPA made the statement in the BART Guidelines that “[these *de minimis* levels may only be applied on a plant-wide basis.” This statement was intended to clarify that the State should consider the cumulative emissions from the units at a plant *that comprise the BART-eligible source* in determining whether the BART-eligible source meets the *de minimis* exemption requirements.

Note, however, that for category one (fossil fuel fired steam electric plants >250 million Btu/hour), our interpretation of the source category title is that the State should add all EGU emissions at a plant together when determining plant capacity, in order to see if the plant falls within category one. Once you have determined that the plant does fall within the category, the State would only consider those EGUs built within the 1962-77 timeframe to actually be BART-eligible.

12. If a State determines that a recent BACT determination on an emission unit is BART, then is a BART emission limit created that is the same as the BACT limit, and is the Title V permit changed so that BART is also listed as a basis for that emission limit?

Yes, if a State makes such a determination and includes it in its SIP, then a BART emission limit is created that is the same as the BACT limit. The Title V permit must be amended to “specify and reference the origin of and authority for” the emission limit. 40 CFR 70.6(a)(1)(ii).

13. Is EPA presuming a level of control for BART eligible sources in guidance to consider CAIR plus BART plus other "reasonable" measures?

Guidance on the level of BART controls is not being developed. BART can only be determined on a case-by-case-basis and source-by-source-basis using the modeling and statutory factors listed in 40 CFR 51.308(e)(1)(ii)(A). Sources have expressed concern that reasonable progress guidance might be interpreted to override BART guidance. The BART assessment is a separate requirement from the reasonable progress test. It may be that to meet reasonable progress, more controls are needed from certain sources which may or may not include those sources previously controlled under BART. There is no way for EPA or the States to determine the final strategy to comply with the reasonable progress demonstration until the BART assessment is completed and the suite of controls that are needed for RH is determined. There could also be additional controls that may be identified as needed to demonstrate compliance for the 8-hour ozone and PM_{2.5} NAAQS. This may or may not affect the control identified under BART or CAIR. The States have flexibility in determining the type, pollutants and mix of sources that could be

used in developing a strategy for attaining a NAAQS per the modeling guidance and implementation policy.

14. Can a source avoid BART by taking synthetic minor limits on the PTE of visibility-impairing pollutants? If so, by when do those limits need to be in place? What kind of mechanism must be in place to ensure those limits are met? For how long?

Yes, a source can opt to revise its Title I permit to provide for synthetic minor limits so that it falls under the BART eligibility threshold. The limitations of a source's potential to emit should be in place prior to the State's submission of its Regional Haze SIP to EPA and a description of the State's action should be included in the SIP narrative. To prevent circumvention of the BART requirements, it may be necessary to include a permit term or SIP provision that provides that changes at the BART-eligible source or in its permit that allow for increases in emissions would subject the source to BART review.

15. If the unit is already controlled (e.g., under MACT or BACT) and it is the best, the latest control technology, does the source still need to conduct a full blown BART analysis and control technology evaluation including the installed control device? Or, can the source just describe the control device on their BART-eligible source unit and make the case that it qualifies as BART, without having to evaluate other technologies?

If the unit has "best, latest...", then the source can just describe the control device on their BART-eligible source unit and make the case that it qualifies as BART, without having to evaluate other technologies. The streamlining of BART analyses in this situation is addressed in Section IV.C of the BART Guidelines, "How does a BART review relate to [MACT] Standards under CAA section 112, or to other emission limitations required under the CAA?"

16. A source is built prior to 1962. Between 1962 and 1977, it builds a new emission unit that otherwise meets BART eligible requirements. Is the new unit subject to BART?

If a State is following the approach for identifying BART-eligible units described in the BART Guidelines, the unit built between 1962 and 1977 is considered to be BART-eligible.

17. Although the rule in the Federal Register (FR), July 6, 2005 page 39107 and elsewhere indicates that the max 24 hour emissions should be used, would EPA approve using double the actuals instead for CALPUFF BART modeling?

As noted in the final BART rule, emissions from a source can vary widely on a day to day basis and the "24-hour actual emission rate could be *more than double the daily average*. See 70 FR at 39129. We recommend that States use the highest 24-hour average actual emission rate for the most recent three or five year period of meteorological data in the CALPUFF model. As EPA explained, "[t]he emission estimates used in the models are intended to reflect steady-state operating conditions during periods of high capacity utilization." *Id.* Given the potential variability in actual

emissions, use of actual emissions (even double actual emissions) does not necessarily represent this.

18. If a State participates fully in CAIR, and satisfies its BART obligation for EGUs for NO_x and SO₂, must the PM BART eligibility analysis consider whether all visibility impairing pollutants, summed across a facility, exceed 250 tpy, or must only the PM emissions be considered?

If at the final step of identifying the emission units that constitute a BART-eligible source, the State finds that a potential BART-eligible source has the potential to emit 250 tpy of *any* visibility-impairing pollutant, then the source is considered BART-eligible. For example, if a potential BART-eligible source has emissions of more than 250 tpy of SO₂ and meets the other applicable requirements, then it may be subject to BART review for its emissions of PM. However, if the source's emissions of PM₁₀ are less than 15 tpy (assuming the State has established a *de minimis* level of 15 tpy), then the source's PM₁₀ emissions need not be addressed in a BART determination.

19. An EGU has three boilers: a) coal boiler (5500 mmbtu/hr); and b) two auxiliary boilers (181.6 mmBtu/hr each). The State has determined the coal boiler to meet the first test for BART-eligibility. Since the two auxiliary boilers do not appear to fall under any of the 26 BART categories, would they pass the first test for BART-eligibility because they contribute to the "steam electric plant"?

As a general matter, all the emission units, including any auxiliary boilers, at a fossil-fuel fired steam electric plant of more than 250 million BTU/hour heat input would be considered part of the same stationary source. Under the RH regulations, BART applies to certain existing stationary sources; stationary sources, in turn, are defined to include "all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control)." 50 CFR 51.301. The regulations further provide that "[p]ollutant-emitting activities must be considered part of the same industrial grouping if they belong to the same Major Group (i.e. which have the same two-digit [SIC] code)." For most plants on the BART list, there will be only one 2-digit SIC code that applies to the entire plant. As you have described the source in your question, the auxiliary boilers would fall within the same 2-digit SIC code as the coal boiler; these units accordingly are part of the same stationary source as the coal boiler.

Note, however, that if the auxiliary boilers are only used during startup, then since we do not model startup conditions, those boilers would not contribute any emissions to the modeled visibility impact from the source; therefore those particular boilers may be exempted.

Reasonable Progress

1. Is there a metric for determining if controls required for PM_{2.5}, O₃, CAIR, or BART are "reasonable" without defining benefit of controls?

Unlike the technical demonstration for CAIR or BART, the reasonable progress demonstration involves a test of a strategy. The strategy includes a suite of controls that has been identified through the identification of pollutants and source categories of pollutants for visibility impairment - the possible controls for these pollutants (and their precursors) and source categories - the application of four statutory factors and how much progress is made with a potential strategy with respect to the glide path. Modeling occurs with a strategy and is not a source-specific demonstration like the BART assessment.

2. How can States demonstrate benefits of controls from a single source for RH without doing single source impact modeling, e.g. CALPUFF?

Reasonable progress is not required to be demonstrated on a source-by-source basis. It is demonstrated based on a control strategy developed from a suite of controls that has been assessed with the four statutory factors and the uniform rate of progress.

3. What if a State is on the glidepath, but can still install cost effective controls? Is it obligated to install those controls?

From the preamble to the Regional Haze Rule (64 FR 35732), EPA explained:

“If the State determines that the amount of progress identified through the analysis is reasonable based upon the statutory factors, the State should identify this amount of progress as its reasonable progress goal for the first long-term strategy, unless it determines that additional progress beyond this amount is also reasonable. If the State determines that additional progress is reasonable based on the statutory factors, the State should adopt that amount of progress as its goal for the first long-term strategy.

The statutory factors must be applied before determining whether given emission reduction measures are reasonable. For example, even if emissions reductions from one source category are projected to be enough to achieve the uniform rate of progress towards natural background in 60 years, States should not forego an analysis of what degradation is being caused by pollutants from other source categories, or what improvements could be made by controlling them.

4. A. What type of demonstration is acceptable to justify a reasonable progress goal (RPG) that is less than the glidepath? B. What if controls needed for other programs (e.g., PM2.5, ozone, CAIR) are installed?

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

slower rate is reasonable, and state the projected date for achieving natural background under this alternative rate of progress.

B. Existing controls that are installed as a result of other existing CAA programs can contribute to a State's ability to satisfy its RPG. However, the statutory factors must be applied before determining whether given emission reduction measures are reasonable. In particular, the State should adopt a rate of progress greater than the glidepath if this is found to be reasonable according to the statutory factors. See in particular the directive in the preamble to the RHR at 64 FR 35732.

5. Can a source commit to extra control of one visibility-impairing pollutant in exchange for doing less to control a less significant pollutant (inter-pollutant trading)?

The regulations require the States to adopt measures that will make reasonable progress toward the national goal. States have the flexibility in developing these measures to focus on those pollutants that have the most significant impact on visibility. A State could conclude that after application of the four statutory reasonable progress factors, it is "reasonable" to control one pollutant to a higher level than another pollutant.

In the context of BART, the RHR does not provide for inter-pollutant trading where the source is installing controls based on the State's BART determination. The regulations, however, do allow States to adopt alternative measures in lieu of BART, so long as the alternative measures provides for greater reasonable progress than would BART. Inter-pollutant trading is not allowed in a trading program alternative to BART, -- see 64 FR at 35743.

In addition, States may allow sources to "average" emissions across any set of BART-eligible emission units within a fenceline, so long as the emission reductions from each pollutant being controlled for BART would be equal to those reductions that would be obtained by simply controlling each of the BART-eligible units that constitute BART-eligible source (70 FR 39172).

Coordination with RPOs, States, and FLMs

1. What are EPA's expectations and the basis for consultation requirements regarding formal consultative procedures? What constitutes effective FLM communication? Can it be assumed that if the FLM attends the RPO meetings and calls and doesn't raise any concerns it has no problems with a State's SIP?

40 CFR 51.308(i) requires that States consult with FLMs before adopting and submitting their RH SIPs. These requirements are summarized as follows:

States must provide the FLM an opportunity for consultation, in person and at least 60 days prior to holding any public hearing on the SIP. The State must also provide the opportunity for the FLMs to discuss their: (i) assessment of impairment of visibility in any Class I area; and, (ii) recommendations on the

development of the RPG and on the development and implementation of strategies to address visibility impairment. Further, the State must include in the SIP a description of how it addressed any comments provided by the FLMs. Lastly, the SIP must provide procedures for continuing consultation between the State and FLMs on the implementation of 51.308, including development and review of SIP revisions and 5-year progress reports, and on the implementation of other programs having the potential to contribute to impairment of visibility in Class I areas.

This is a formal consultative process. The basis for requiring written consultation procedures is 40 CFR 51.308(i)(4). To satisfy this requirement, States should contact the FLMs to ensure their input to the RH SIP process is solicited and documented. While effective FLM consultation relies on both parties (States and FLMs) communicating early and often, the State is only required to meet the provisions of 40 CFR 51.308(i) and is not responsible if a FLM chooses not to participate in either the RPO activities or the SIP development and review process. In such cases, the State should document its outreach efforts to the FLM.

2. Is there a protocol for resolving disputes between States and RPOs regarding technical differences between upwind and downwind States on EI, modeling, natural background, apportionment, controls, etc.? How will EPA address States/RPOs adopting different IMPROVE algorithms (old vs. new) to look at the same Class I area?

EPA is developing a State and Federal Protocol which will describe the goals and objectives, consultation requirements, principles of collaboration, and process for collaboration for the RH process. While conceptual in nature, this document will be designed to form the basis for a common understanding, approach, process and expectations for consultation and consistency in developing the 308 Regional Haze SIPs. EPA is encouraging the early identification of any potential disputes. This will allow all parties ample opportunity to address and document any disagreements.

3. We understand that EPA is requiring each State with a Class I area to submit a SIP that addresses its obligations relative to that Class I area including establishment of a uniform rate of progress, imposition of requirements to install controls on sources in that State that are considered reasonable, documentation of its collaborative efforts with other States impacting that Class I area, and also documentation of interactions with surrounding States regarding that State's contributions to Class I areas in other States. The question is, "When is a State no longer obligated to consult with another State?"

States are required under 40 CFR 51.308(d)(3), to collaborate and develop coordinated emission management strategies to address RH visibility impairment not only for Class I areas within their own borders, but also for each Class I areas located outside their borders which may be affected by their emissions. The obligation for States to consult with each other ultimately remains in place for the period of time covered by 40 CFR 51.308. In practice, States will satisfy this obligation mainly during the preparation of the RH SIPs for the first planning period (2018), due by 12/17/07, and in the preparation

of the ten-year periodic revisions, and the five-year periodic reports described in 40 CFR 51.308(f) and (g), respectively.

4. A. Does a State have obligations under the RHR for reasonable progress to initiate discussions with another State whose sources impact one of its Class I areas if the projected interim visibility improvement in 2018 falls directly on the uniform rate of progress line for that area? Or can the State focus on defining reasonable progress for its sources without engaging other States with contributing sources in discussions?

B. Conversely, do States have obligations under the RHR to evaluate whether their sources are contributing to Class I areas in surrounding States even though the Class I areas surrounding it are achieving the uniform rate of progress?

A. Yes, a State must consult with States having sources reasonably anticipated to cause or contribute to visibility impairment in a Class I area to develop their RPGs pursuant to 40 CFR 51.308(d)(1)(iv) regardless of the uniform rate of progress for an area.

B. Yes, States must evaluate whether their sources are contributing to Class I areas in surrounding States even though the Class I areas surrounding it are achieving the uniform rate of progress as noted in answer 4.A. Note also that 40 CFR 51.308(d)(3)(i) specifically requires that States with emissions that are reasonably anticipated to contribute to visibility impairment in another State's Class I area consult with that State to develop coordinated emission management strategies.

5. For Class I areas that span two or more States, is there a requirement for establishing a "lead" State?

There is no requirement in the RH regulations nor in guidance documents to identify a "lead" State for shared Class I areas. However, states may choose to establish a "lead" state if it facilitates their collaboration and consultation. The RH rule relies on States collaborating and using the consultation process (RPOs) to address shared Class I areas. Also, we assume the technical work that is used as the basis would be the same for all SIPs. One may also want to take a look at where the IMPROVE monitor is located that "represents" the Class I area in question, as that location may also help define the "lead" State. Another option is the State with the largest portion of the Class I area in their State to be the "lead" State. These are ideas that could be used, but it is up to the States to work this out as part of the collaboration and consultation process. We view shared Class I areas similar to interstate NAAQS nonattainment areas. The States involved would collaborate to set one RPG for the area, and work together to define a consistent, coordinated approach to develop the long-term strategy for the area. As with interstate NAAQS nonattainment areas, each State has lead responsibility for developing, adopting and submitting its own SIP revisions affecting their portion of the Class I area.

6. What if one State with the Class I area sets an RP goal that requires an upwind State to make reductions that it won't make?

If a State with a Class I area determines that a contributing State is not doing what is reasonable to meet the RPG set for the area, and has attempted to resolve this issue, the State with the Class I area should notify EPA and document this issue in its initial RH SIP. For all revisions to the initial RH SIP revision, 40 CFR 51.308(h)(2) requires that the State with the Class I area provide notification to EPA and to the other States which participated in the regional planning process. This subsection further requires the State with the Class I area to collaborate with those States in the regional planning process to develop additional strategies. It is EPA's expectation that issues of communication/collaboration problems such as this be brought to our attention as early in the process as possible.

7. If State A is at or below the glide path for an area, and a neighboring State (State B) impacting State A's Class I area does not do all it can to meet that area's RPGs, what happens? Is State A responsible to file a 126 petition or other action? Could State A's Regional Haze SIP be disapproved because of State B? Are the answers to these questions any different if State A's RPG is above the glide path? In summary, if consultation does not work what happens and who is responsible?

State A is responsible for establishing RPGs for its Class I areas based on its consideration of the factors set forth in the statute and implementing regulations, in consultation with State B and other States that may be contributing to impairment in the area. See 40 CFR 51.308(d)(1). Each State, including State B, is required to submit a SIP with a long-term strategy that includes measures as necessary to achieve the RPGs established for the Class I areas. Where States have participated in a regional planning process, the State must ensure that its SIP includes all measures needed to achieve its share of emissions reductions agreed upon through that process. If there is a disagreement among States as to what constitutes reasonable progress, the question of whether State A's or State B's RH SIP could be disapproved will depend on the specific of the situation. Each State is also responsible for documenting its good faith attempt to consult with State B, as outlined in 40 CFR 51.308(d)(1)(iv). EPA will take this information into account in determining whether the State's goal for visibility improvement provides for reasonable progress towards natural visibility conditions. States are under no obligation to file petitions under Section 126 of the CAA to satisfy the reasonable progress requirement under the RH program.

8. What is necessary in a SIP/template to demonstrate "continuing consultation" under 51.308(i)(4)?

Most States are currently consulting with other States and with the FLMs by participating in an RPO. EPA anticipates that most States will address their future FLM consultation requirements by continuing to participate in an RPO that is engaged in an ongoing assessment of visibility issues. If a State demonstrates that it has met current consultation requirements through participation in an RPO that is engaging in the necessary consultations, and if the State intends to satisfy future consultation requirements (for periodic comprehensive SIP revisions or for other issues that arise) by continued participation in their RPO, then such a State need only commit to such participation.

For a State that has not fully engaged in the RPO process, the State must provide a description of the process by which it intends to consult with the FLMs in preparing future submittals and addressing issues that arise. Similarly, if a State has participated in an RPO but intends to discontinue this participation, the State must provide extensive description of the alternative means by which the State will engage in the required consultations.

9. To what extent does EPA expect RPOs to motivate States to communicate directly with and engage the FLMs, particularly for Class I areas where those FLMs have not been participating in the RPO's work?

EPA expects that the RPOs will serve as the coordinating entities to facilitate State-to-State and State-FLM consultation. To that end, EPA recommends that RPOs individually set up a formal process to encourage State-to-State and State-FLM consultation to take place, perhaps in the form of a coordinating workgroup. Through managing this process, RPO's can help identify areas where more FLM participation may be needed. However, RPO's are not responsible if a FLM opts not to participate in these consultation opportunities. Ultimately, it is the State's responsibility to ensure the FLM consultation requirements housed in 40 CFR 51.308(i) are satisfied.

10. What are EPA's expectations of an RPO for written consultation procedures with the other RPOs/States outside its jurisdiction? Given limited funds and much technical and policy work needed, it is suggested this be made as simple and straightforward as possible.

EPA expects that RPOs will serve as the facilitating entities for State-to-State resolution of issues relating to State apportionment of visibility impairment at Class I areas. RPOs should also assist States in the resolution of disputes over the levels of control required by upwind States that contribute to visibility impairment of downwind States' Class I areas. This process should begin by each RPO identifying Class I areas for which their member States individually cause or contribute to visibility impairment. Following this, the RPOs should meet to broker consensus between the States on the technical approaches to these issues.

There is no requirement for an RPO to establish written consultation procedures with the other RPOs/States outside its jurisdiction. EPA expects RPOs to facilitate and/or establish procedures in any format (informal or formal) as needed that works best for the parties involved.

11. Does section 169A(c)(3) of the CAA require a State to obtain FLM concurrence with a State's proposal to exempt sources from being subject to BART in its Regional Haze SIP submitted to EPA?

No. The CAA requires States to make BART determinations for BART-eligible sources that may reasonably be anticipated to cause or contribute to *any* impairment of visibility

in a Class I area. In the BART Guidelines, we provides States with an approach for exempting potential BART sources from BART by demonstrating that a source does not meet this threshold. In contrast, under section 169A(c)(1) of the CAA, the Administrator has the authority to exempt most sources from BART if he determines that the source is not reasonably anticipated to cause or contribute to *significant* impairment of visibility. Section 169A(c)(2) contains a similar provision for certain powerplants. The exemptions under section 169A(c), however, are effective only on concurrence by the FLM. In sum, while States must consult with FLMs as part of the SIP process, they are not required to obtain FLM concurrence with their determination that a BART-eligible source does not cause or contribute to *any* impairment.

Miscellaneous

1. On December 20, 2005, the IMPROVE Steering Committee approved a new algorithm for calculating current and natural background visibility. If states use the new equation in BART and reasonable progress analyses, will EPA accept it?

Yes, either the new IMPROVE extinction equation as recommended in 2005 by the IMPROVE Steering Committee or the original equation recommended by EPA in the "Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule" (September 2003, EOA-454/B-03-005) may be used to develop Regional Haze SIPs. Regardless of which algorithm is used for a Class I area, that methodology should be applied in a consistent manner. Consistency should be maintained across Regional Haze applications (i.e., BART and Reasonable Progress), across time (e.g., baseline and future calculation for natural conditions), and among the stakeholders involved who need to be consulted on the development of a LTS for a Class I Area (i.e., FLMs, states, industry). Specifically, we recommend that the same version of the IMPROVE equation be used by States/sources which are impacting the same Class I area to calculate visibility conditions for that area.

The current CALPUFF modeling system uses an approach that is similar to the original IMPROVE equation. Therefore, a method to apply the new equation with this model for a BART assessment is needed. Consultation with the EPA Regional Office and FLMs on proposals to use the new IMPROVE equation with CALPUFF for a BART assessment is recommended prior to its use in the modeling.

2. Instead of a single value, can the RPG be satisfied using a natural conditions range that captures the variability in year-year emissions of natural events?

The 1999 RHR states that in comparing "current conditions" against "natural conditions," natural conditions means "[t]he level of visibility (in deciviews) for the 20 percent most-impaired days, and for the 20 percent least-impaired days, that would exist if there were no manmade impairment." 64 FR at 35730. EPA issued a guidance document concerning this entitled, "Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule." Under this guidance, a single value for natural visibility for each class I area is calculated for each of the 20 percent most-impaired days and the 20 percent least-

impaired days. This guidance document describes “default” and “refined” approaches for estimating natural conditions. The EPA methodology that allows for the 20% best days and 20% worst days to calculate natural and background levels is designed to avoid a single value (i.e., the single best day or the single worst day). The single value that represents the 20% best days is considered representative of the range. Consequently, it would be redundant and unnecessary to further consider ranges of visibility values in determining natural and background levels.

3. What obligation does a downwind State have if it conducts modeling based on an upwind State’s emission inventory, and the upwind States subsequently changes its inventory? What is EPA’s expectation here?

EPA expects that States will continue to work together in addressing the problem of RH, both inside and outside the RPO context and that States will share pertinent aspects of their SIP planning with other States, as appropriate. Upwind States should use their best efforts to provide potentially relevant information, such as changes in emissions inventories, to downwind States in timely fashion. We are relying on the RPOs, in large part, to ensure this coordination takes place.

The Regional Haze Rule does not establish a deadline by which States should finalize their emission inventories for purposes of SIP planning. EPA recognizes that addressing visibility impairment is an iterative effort and that States will not always be capable of incorporating the most up-to-date information in their analyses for the SIPs due in 2007. If there is a lack of coordination on this issue that affects the integrity of a particular State’s SIP, EPA will examine it on a case-by-case basis and take into account the specifics of the situation in its review of the SIP.

4. How does the CAIR substitute for BART?

States subject to and participating in the CAIR cap and trade program for SO₂ and NO_x may treat the CAIR requirements for EGUs as a substitute for the application of BART controls for these pollutants. States do not need to require BART-eligible EGUs subject to the CAIR to install, maintain, and operate BART per 40 CFR 51.308(e)(4).

In addition, a State which is only subject to CAIR for NO_x, but which also chooses to participate in the CAIR trading program for both SO₂ and NO_x, may consider BART to be satisfied for both SO₂ and NO_x from EGUs. Because EPA modeled these States as controlling for both SO₂ and NO_x in the CAIR NFR, the better than BART demonstration presented in that action would be valid in that scenario. Conversely, if such States choose to participate only in the ozone season NO_x trading program, the updated projections presented in the BART rule (70 FR 39104) demonstrate that BART would be satisfied for NO_x, but such States would still need to address BART for SO₂ emissions from EGUs (70 FR 39143).

Also, EPA’s assessment that the CAIR cap and trade programs can substitute for BART controls does not extend to cases where a State has identified source-specific BART

requirements as a result of a reasonable attribution determination. In such cases, the source-specific BART requirements must be met at the source.

Finally, the CAIR does not address other potential visibility impairing pollutants such as PM, VOCs, and ammonia. Also, the determination that the CAIR makes greater reasonable progress than BART for EGUs is not a determination that the CAIR satisfies all reasonable progress requirements in CAIR affected States.

5. If a CAIR facility is found to be exempt from BART for SO₂ and NO_x, and the State does exemption modeling on PM₁₀ and concludes there is no impact on a Class I area, can the State totally exempt the utility from BART?

States subject to and participating in the CAIR cap and trade program for SO₂ and NO_x are allowed to treat the CAIR requirements for EGUs as a substitute for the application of BART controls per 40 CFR 51.308(e)(4). This does not mean EGUs are exempt for SO₂ and NO_x, only that CAIR satisfies the BART requirement for those pollutants.

The remaining visibility pollutants to consider for determining BART-eligible sources are PM, and, using judgment, VOCs, and ammonia. For PM, the July 6, 2005, final BART rule at 70 FR 39160 notes PM₁₀ may be used as an indicator for PM in this step of the determination and thus, PM₁₀ can be used for the exemption modeling.

6. What is the relationship of CAIR to reasonable progress? Does CAIR satisfy reasonable progress requirements for EGUs for NO_x and SO₂?

As discussed in the answer to the previous question, participation in the CAIR can substitute for a State's BART obligation in certain narrowly defined areas. However, for the purpose of satisfying the RPG, CAIR has no more applicability than does BART – it is a control that can be part of a State's RPG. The preamble to the 2005 BART Rule states that EPA's determination that participation in the CAIR trading program would provide for greater reasonable progress from EGUs than would BART "is not a determination that CAIR satisfies all reasonable progress requirements in CAIR affected States." (70 FR 39143). In other words, although EPA has determined that the CAIR trading program would provide greater reasonable progress than source specific BART controls for affected EGUs for SO₂ and NO_x, a State's reasonable progress analyses may indicate that additional controls beyond CAIR may be necessary to meet the RPGs set for one or more the Class I areas.

7. What is the relationship of RH BART to RAVI BART?

RAVI BART (Part I of the visibility program) is a separate regulatory requirement from RH BART (Part II of the visibility program). RAVI BART treats visibility impacts from one source or a small group of sources, as opposed to RH BART, which treats visibility impacts over a wide geographic area. EPA promulgated regulations addressing "reasonably attributable visibility impairment" or RAVI in 1980. Under these regulations, the requirement for a BART analysis is triggered where the FLM certifies

there exists reasonable attributable impairment of visibility. You may find this document a useful guide to understanding the RAVI process:

http://www.wrapair.org/forums/mtf/documents/ravi_bart/Final_RA_BART_Report.pdf

Once a State has met the requirements in the RH regulations for BART or implemented an alternative measure, then the BART requirements of the Act have been met and BART sources will be subject to regulation under the RH program in the same manner as other sources. 40 CFR 51.308(e)(3). Therefore, even though a State may satisfy BART via a 308 SIP, an FLM may still certify RAVI, thus triggering a RAVI BART attribution determination.

8. What happens if RH SIPs are late?

Section 110(m) of the CAA provides discretionary authority for EPA to impose sanctions for failure to submit a required plan.

9. What is EPA's position on the need to treat VOCs and ammonia as visibility-impairing pollutants? If a State wishes to address VOCs and/or ammonia as visibility impairing pollutants, what tools are available to do this?

The BART Guidelines direct that States should look at SO₂, NO_x, and direct PM emissions in determining whether sources cause or contribute to visibility impairment, including both PM₁₀ and PM_{2.5}. As stated in the BART Guidelines (70 FR 39160), "States should exercise their judgment in deciding whether [VOCs or ammonia] impair visibility in an area ... and in deciding whether VOCs or ammonia emissions from a source are likely to have an impact on visibility in an area." A formal showing of an individual decision that a source of VOC or ammonia emissions is not subject to BART review is not necessary.

10. 51.308(d)(3)(v)(B) requires that the State, in developing its LTS, consider measures to mitigate the impacts of construction activities. What should this include?

States should include construction activities in their emission inventories that are used for long-term strategy development. When EPA promulgated the RHR in 1999, emissions from construction activities, such as emissions from non-road diesel equipment, and large scale wind-blown dust from rapidly growing areas like Las Vegas and Phoenix, were a major concern. Subsequently, EPA has promulgated rules for on-road and non-road heavy duty diesel engines. States should include the emission reductions from those rules in their SIP planning. If States have areas where wind blown dust from human activities contributes to a reduction in visibility at Class I areas, they should consider measures to mitigate this source of visibility-impairment. The Western Regional Air Partnership (WRAP) has a number of products related to dust that can be downloaded from their site at: <http://www.wrapair.org>

11. What is EPA's expectation for filling missing data in the IMPROVE record? How many years are required to determine the baseline visibility if data is missing in the 2000-2004 record? Are 3 years sufficient (IMPROVE expectation)? Need to create 5 years ?

The "Guidance for Tracking Progress Under the Regional haze Rule" addresses this question in several areas. Five (5) years of data from the 2000-2004 period should be used. However, because of the deployment of monitors this length of data may not be available for all Class I areas. The Tracking guidance recognizes this and recommends that a minimum of three years of data should be used if more years do not exist (see pages 1-4, and 2-8).

All five years should be used if available and suitable per guidance recommendations. If not, then a minimum of three years is recommended. You should not recreate data for years that the monitor was not operational because of the further uncertainty that this data adds. If less than three years of complete data are not available, consultation with EPA is recommended. The Tracking guidance suggests that a case-by-case proposal on how this data should be processed should be developed in consultation with EPA OAQPS (and the Regional Office).

12. How are international emissions and natural events addressed in the RH SIPs?

EPA addressed the treatment of international emissions in the 1999 RHR in a discussion of the long-term strategy for making reasonable progress in section III.G of the preamble to the final regional haze rule as follows:

"The EPA agrees that the projected emissions from international sources will in some cases affect the ability of States to meet reasonable progress goals. The EPA does not expect States to restrict emissions from domestic sources to offset the impacts of international transport of pollution. We believe that States should evaluate the impacts of current and projected emissions from international sources in their regional haze programs, particularly in cases where it has already been well documented that such sources are important. At the same time, EPA will work with the governments of Canada and Mexico to seek cooperative solutions on transboundary pollution problems." 64 Fed. Reg. 35714, 35736 (July 1, 1999).

EPA provided additional clarification in the preamble to the 1999 RHR on how States should properly evaluate international emissions, when we discussed the States' obligation to submit five-year reports evaluating progress toward the RPG for each Class I area:

"If the State finds that international emissions sources are responsible for a substantial increase in emissions affecting visibility conditions in any Class I area or causing a deficiency in plan implementation, the State must submit a technical demonstration to EPA in support of its finding. If EPA agrees with the State's finding, EPA will take appropriate action to address the international emissions through available mechanisms. Appropriate mechanisms for addressing visibility-impairing emissions from international

sources are further discussed in unit III.G on the long-term strategy." 64 Fed. Reg. at 35747.

Both in explaining RPGs and in assessing whether current implementation plan strategies are achieving them, States can take into account the nature of international emissions. For instance, after having applied the four statutory factors and calculated their RPGs, states can at their discretion, quantify the effects of international emissions on their ability to reach RPGs. However, States should not directly consider the effects of international emissions when calculating their uniform rates of progress by either adding the effects of international emissions to their estimates of natural conditions, or by subtracting international emissions from current conditions. Either of these approaches conflicts with the basic definitions of "current conditions" (baseline conditions for the first SIP) and "natural conditions," as described in the 1999 RHR. 64 Fed. Reg. 35728, (July 1, 1999).

Those natural events most commonly linked to RH are wind blown dust and emissions from biomass burning. EPA has long recognized the natural role of fire in the ecosystem. Consequently, in determining natural background for a Class I area, EPA believes States should be permitted to consider some amount of fire in the calculation. If a State finds during the five year period review that an unusual natural event such as a large wildfire is affecting progress, this can be taken into account in its assessment of whether the current SIP are sufficient to meet the RPGs. The State should submit a technical demonstration showing its estimate of the wildfires' contribution to visibility impairment to support its conclusion.

APPENDIX: Question 5 cost equations

Average cost for an individual source

Average cost of control option A = annualized capital + operating and maintenance \$ option A / tons removed option A

Average cost of control option B = annualized capital + operating and maintenance \$ option B / tons removed option B

We use the following definitions for analyzing control options across a source category or subcategory:

Average of individual source costs:

Average of individual source costs of control option A =

$$\frac{\text{control costs}_{\text{source 1}} / \text{tons removed}_{\text{source 1}} + \text{control costs}_{\text{source 2}} / \text{tons removed}_{\text{source 2}} \dots}{\text{total number of sources}}$$

Average cost over the category:

Average cost over the category of control option A =

$$\frac{\text{control costs}_{\text{source 1}} + \text{control costs}_{\text{source 2}} \dots}{\text{tons removed}_{\text{source 1}} + \text{tons removed}_{\text{source 2}} \dots}$$