MANE-VU

Mid-Atlantic/Northeast Visibility Union

- regional planning for improved visibility

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July 15, 2004

The Honorable Michael O. Leavitt
Administrator
EPA EDOCKET
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460
Attention: Docket #OAR OAR-2002-0076

Re: Comments on Regulatory Text for Proposed 68 FR 25184, Docket # OAR 2002-0076

Dear Administrator Leavitt:

The Mid-Atlantic/Northeast Visibility Union (MANE-VU) appreciates this opportunity to submit comments to Docket ID No. OAR-2002-0076 in response to the U.S Environmental Protection Agency's (EPA's) proposed rule issued May 5, 2004 entitled "Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations."

MANE-VU is comprised of States and Tribes in the Mid-Atlantic/Northeast region of the United States, working in cooperation with Federal partners including the U.S. Environmental Protection Agency and Federal Land Managers from National Park Service, U.S Forest Service, and U.S. Fish and Wildlife. MANE-VU was established specifically to assist States and Tribes in their compliance efforts under the regional haze rule and thus takes a special interest in this proposal.

The proposed rule is significant because while states and tribes have broad and general authority to obtain emissions reductions from all source categories to achieve its reasonable progress objectives, Congress has provided explicit authority to regulate the potentially BART-eligible sources for the purposes of obtaining needed emissions reductions early in the 60-year program to ensure reasonable progress is achieved. It is therefore imperative that we maintain strong BART regulations for developing regional haze SIPs in 2008. While we support additional emission reductions through regional initiatives like cap and trade programs, we also believe that they should come on top of, rather than, supplanting basic controls like BART.

BART Eligibility

With respect to BART eligibility, the proposed rule requires that only individual sources greater than 250 MMBtu/hr are potentially BART-eligible rather than the aggregate of all fossil-fired units at a power plant. This would allow for the exemption of multiple, relatively large units . EPA should, in addressing the aggregation issue for fossil fuel-fired boilers, use the same interpretation that it adopted in the Prevention of Significant Deterioration (PSD) regulations. The PSD regulations require the aggregation of fossil-fuel boiler capacities at an industrial source to determine whether or not the 250 million BTU/hour threshold is met. However, EPA proposes to adopt differing interpretations of the fossil-fuel boiler category in the PSD and regional haze regulations even though the relevant sections of the Clean Air Act (sections 169(1) and 169A(g)(7), respectively) utilize the same language and structure in describing the categories subject to regulation. Under the plain language in both provisions, the terms major emitting facility or major stationary source are defined to include "boilers," providing strong justification for aggregation under the haze rule.

Regarding type of boilers covered by this rule, EPA unnecessarily excludes significant sources without justification. For example, there is no justification to exclude boilers burning less than 50% fossil fuel. If any fossil-fuel is burned, the source should be potentially BART-eligible. Additionally, there is no basis for requiring that only electrical generating units (EGUs) producing electricity for sale be included. This limitation is not included in the 1990 Clean Air Act.

We believe that ammonia should be included on the regulated pollutant list for determinations (*68 FR 25192*). While we believe that a de minimus threshold similar to those proposed for other visibility impairing pollutants may be appropriate for ammonia as well, we are concerned that certain large ammonia emission sources may have significant potential contributions to visibility degradation but would be exempt from installing control equipment if ammonia is not included.

Sources Reasonably Anticipated to Cause or Contribute to Visibility Impairment

We believe that the success of a retrofit program is based on nationally consistent, stringent, application of controls to similar sources. We believe that the starting point of contribution assessments should be the assumption that all sources are included rather than exempt. We understand that this was EPA's preferred approach in the 1999 regional haze rule and 2001 BART guidance but that you are now *required* to allow for individual state exemptions. Nonetheless, MANE-VU has concerns about the flexibility being offered in how to determine these individual exemptions.

The variety of alternative proposed approaches for exemption mechanisms included in your current proposal could create a great disparity in the level of control applied in one region versus another -- regardless of where the emissions ultimately impact visibility. If states are to have an exemption option, it should be clearly defined and not allow for disparate implementation region by region.

MANE-VU members feel strongly that all potentially BART-eligible sources should be considered subject to BART determinations. Regarding the proposal at *68 FR 25188* states have the discretion to determine that:

> a. All BART-eligible sources within the State are ``reasonably anticipated to cause or contribute'' to some degree of visibility impairment in a Class I area;
> b. the full group of BART-eligible sources in a State cumulatively do not cause or contribute to any visibility impairment in Class I areas; or
> c. an individual contribution of a BART-eligible source is causing or contributing to any impairment of visibility in any [Class I] area."

We feel that uniform application of BART guidelines across all eligible sources will create a level playing field and consistent application of control technology. We recommend that EPA provide clear and uniform guidelines for how options “b” and “c” would be determined. Providing many alternatives for the exemption mechanisms will present an impediment to nationally consistent implementation and potentially create economic disparity among the regions and particularly between neighboring states which may choose to apply the guidelines differently.

Specifically with regard to the exemption mechanisms, a threshold visibility impact – as modeled by CALPUFF – of 0.5 deciview (dv) relative to 24-hour average visibility under natural conditions has been (*68 FR 25193*) as well as several alternative approaches, including:

a. A simpler screening assessment using CALPUFF

b. Look-up tables (i.e., tables that require emissions and distance information for making an exemption determination)

c. Source ranking

c. Using Emissions divided by Distance, known as the Q/D method

If there is to be a threshold, it should be well below 0.5 dv. This is the level at which a just perceptible level of visibility improvement is apparent and would be entirely appropriate as a visibility threshold under section 169b of CAA (reasonably attributable visibility impairment). However, under 169a, we are to deal with regional haze. The statutory test we are to apply is whether a source is “reasonably anticipated to cause or contribute to visibility impairment.” To *cause* impairment would imply 0.5 dv, but we interpret the statute to suggest that several sources having individual impacts (relative to natural background visibility) of 0.1 or 0.2 dv would all *contribute* to a perceptible impairment and should meet the statutory criteria.

A detailed examination of the various exemption mechanisms and appropriate threshold values is presented in *Attachment 1* using CALPUFF modeled results for hundreds of presumably potentially BART-eligible and non BART-eligible sources in order to help guide the development of an appropriate exemption mechanism that could be applied in a consistent manner by all states that choose to take the exemption approach. Our conclusions lead us to recommend a threshold visibility value between 0.1 and 0.2 dv as a threshold for 24-hour visibility impact relative to natural background. This would correspond to a Q/d value of approximately 8-12.

We would like to reiterate our concern that cap and trade programs, such as that offered through the Clean Air Interstate Rule, should not be used to supercede the installation of control technology on all potentially BART-eligible sources (*68 FR 25204*). While there would likely be impressive reductions toward the 2018 visibility goals under a cap and trade program for SO_2 and NOx emissions, these reductions should happen in addition to, rather than in lieu of, installation of control technology at all eligible sources.

BART represents an important component of the overall emission reductions that will be needed to achieve reasonable progress -- it is not designed to be, nor has it been demonstrated to achieve all of the reductions needed to address interstate contribution of visibility degradation in Class I areas. This relationship is similar to Phase I of the OTC NOx Budget program which required the installation of RACT on EGUs and large industrial boilers greater than 250 MMBtu/hr to establish a benchmark control level. It was only after RACT was installed at all participating sources that additional reductions were pursued using the flexibility of a cap and trade program.

Similarly, it would be inappropriate now, to eliminate the BART provisions for EGUs in favor of a Cap and Trade program that does not yet exist. When CAIR is finalized, then States will be required to consider the emissions reductions that will accrue under this program before assessing the potential additional reductions that would result through installation of BART and what sort of trading program might achieve greater reasonable progress at the time SIPs are submitted.

BART Determinations

MANE-VU continues to strongly endorse the use of a "top-down BART" approach for performing BART engineering analyses (*see MANE-VU Comments on the 2001 BART proposal included as attachment 2*). EPA's proposal to amend the language in the BART guidelines to allow a state to begin the BART determination process by evaluating the least stringent technically feasible control option (*68 FR 25193*) is counter-intuitive. We recommend a top down analysis that would rank all available control technologies for a given source in descending order of control effectiveness. The most stringent alternative is selected as "best" unless it is demonstrated and documented that the alternative cannot be justified based upon technical considerations, costs, energy impacts and non-air quality environmental impacts. To consider alternative approaches for conducting a BART review, such as the consideration of least-stringent technologies first, would be counterproductive when the statutory objective is clearly aimed at identifying the best control options.

Increased specificity on statutory criteria

While the guidelines are clear regarding how to document control costs, energy impacts, and non-air quality environmental impacts, they fail to clearly define what cost would be considered unreasonable, what energy impact would be considered unacceptable or what threshold environmental impact would result in the elimination of a particular technology option. For the sake of a nationally consistent program, we feel that additional specificity is warranted in the guidelines as to what levels would prevent the most stringent controls from being considered. MANE-VU sees these criteria as extremely important in determining the effectiveness of the BART program. For example, there still does not appear to be any criteria outlined for the consideration of

non-air quality environmental Impacts. The guidelines appear to be the same as those outlined in the 2001 proposal.

We agree that the most stringent control technologies should not be selected as BART arbitrarily or capriciously, we contend that the economic and environmental impacts of specific control options must be weighed against the full range of expected benefits. This includes improvements in visibility, protection of public health, mitigation of acid deposition and ozone formation, and the restoration of marine ecosystem health. In addition, we propose that regulatory language be revised to indicate that only when "extraordinarily high cost, energy or non-air quality environmental impact relative to similar installations of a specific control option" can be documented for the public record should consideration of the next most stringent alternative become an option.

Also, the proposed guidelines allow "the remaining useful life" of an EGU to be considered in conducting a BART determination. If a power plant or industrial facility is determined to have little remaining useful life, then there should be a binding and federally enforceable commitment to retire the source on a date certain.

Degree of Visibility Improvement

With regard to documenting the degree of visibility improvement resulting from BART controls, the proposal would require that individual sources use CALPUFF, or another EPA-approved model, using site-specific data (*68 FR 25193*). Alternatively, EPA is requesting comment on the option of using the hourly modeled impacts from CALPUFF and assessing the improvement in visibility based on the number of hours above a visibility threshold for the pre- and post-control emission rates.

We agree with EPA's assertion that visibility improvements should be measured relative to *natural background* (*68 FR 25194*), and feel that this holds true when considering visibility improvements in the BART determination process. Measuring against natural background rather than relative to *baseline* conditions is a more appropriate approach given that our planning goal is to achieve natural background by the end of the program. There is a significant difference in PM mass reductions required for the same increment of "deciview improvement" depending upon the background level against which you compare that increment. Since we are required to consider the degree of visibility improvement that would result from application of BART controls and because we are not likely to revisit these same sources once BART is applied, we must ensure that the controls we install are appropriate to achieve our national visibility goals. Specific language relating to this issue should be included in the preamble (*68 FR 25203*) as it is included in the statutory language (*68 FR 25227*).

Presumptive Control Levels

We are very pleased at EPA's defining of presumptive control levels of SO_2 (*68 FR 25199*) and NOx (*68 FR 25201*) at 90-95% and 90% respectively. We also believe that it is practical to require sources already operating selective catalytic reducers (SCRs) during the 5-months ozone season to operate year round. However, we question the alternate control level of 0.20 lbs/MMBtu for currently uncontrolled NOx sources. We believe that greater control efficiency is achievable. For example, 0.08-0.10 lbs/MMBtu is demonstrably achievable for these types of sources given that post-

combustion controls are readily available and cost-effective for previously uncontrolled utility boiler applications (see references in attached 2001 comments).

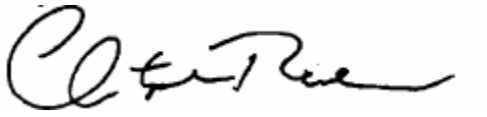
Also, there should be a provision to revisit appropriate BART control levels at a date certain. While it is appropriate to provide clarity and certainty to industry for the installation of retrofit controls, it is also important to provide for application of new controls with increased control efficiency due to technology improvements in order to meet the express requirements of the Clean Air Act to prevent any future and remedy any current impairment of visibility in Class I areas.

Reproposed Guidelines

We believe that use of the guidelines for BART implementation should be required for all the affected source categories listed in the regional haze rule. While fossil-fuel fired electric generating plants with a capacity greater than 750 megawatts represent a substantial fraction of the potential reductions under the BART program, emissions reductions that can be achieved by application of BART to plants with a capacity less than 750 megawatts and the remaining 25 BART-eligible sectors are expected to be significant and necessary to achieve the national visibility goals. Granting discretionary use of the BART guidelines will present an impediment to nationally consistent implementation and potentially raise issues of economic competitiveness between neighboring states which may choose to apply the guidelines differently. We encourage EPA to mandate use of the proposed BART guidelines consistently across all potentially BART-eligible sectors.

We appreciate EPA's efforts to move forward in this rulemaking and the establishing of more aggressive presumptive levels of control for sulfur dioxide and nitrogen oxides. However, in providing multiple options for BART exemption and determinations, EPA has provided an exit ramp to avoid installation of these controls and a lost opportunity for a level playing field amongst regional planning organizations. We encourage EPA to provide fair and consistent criteria for an inclusive, top-down approach to BART.

Respectfully Submitted,



Christopher Recchia
Executive Director

Attachment 1: BART Exemption Mechanism Analysis

MANE-VU Position on Exemption Options for BART-Eligible Sources

MANE-VU feels strongly that all sources eligible for BART should be subject to a BART determination which would include requisite consideration of statutory factors including cost of controls, useful remaining life of the source, energy and other non-air quality environmental impacts and the degree of visibility improvement expected to result. Therefore it is likely that MANE-VU states and tribes will find *all* BART-Eligible sources under the regional haze rule "subject" to BART and will pursue BART determinations for each eligible facility. MANE-VU recognizes the additional burden this places on state staff required to conduct engineering reviews for each BART-eligible facility, however, we are committed to seeking the emissions reductions necessary to achieve reasonable progress and see BART as an important element in that process. Notwithstanding this position, MANE-VU remains very interested in the BART exemption mechanisms which are being proposed by EPA and considered by other RPOs given the nature of regional haze which stems from the combined contribution of many sources over large geographical regions.

We present here a BART exemption screening analysis for some Class I areas in the MANE-VU area to identify principles for exemption mechanisms that are consistent with our present understanding of which sources are reasonably anticipated to cause or contribute to visibility impairment at MANE-VU sites.

Screening analysis for Brigantine and Lye Brook Wilderness Areas

Following the proposed screening approach recommended by EPA in the proposed rule, 2002 annual emissions and facility-Class I area distances were calculated for 211 power plants in the Eastern U.S. preliminarily assessed to be BART-eligible by MANE-VU (NESCAUM, 2001; BART eligible source lists were not available for other sectors outside of the MANE-VU region).

Table 1 (presented at the end of attachment 1) provides a list of 211 BART-Eligible plants, their 2002 annual SO_2 emissions, the source-receptor distance, and Q/d impact (using SO_2 emissions alone). All facilities with a source-receptor distance greater than 500 km are shown with bold print.

Ranking these sources by Q/d (annual emissions divided by distance) shows many sources beyond 500 km which potentially have substantially greater impact than some sources which are within that distance.[1] This raises the question of whether a distance threshold makes sense for an exemption test when visibility impact is the appropriate metric.

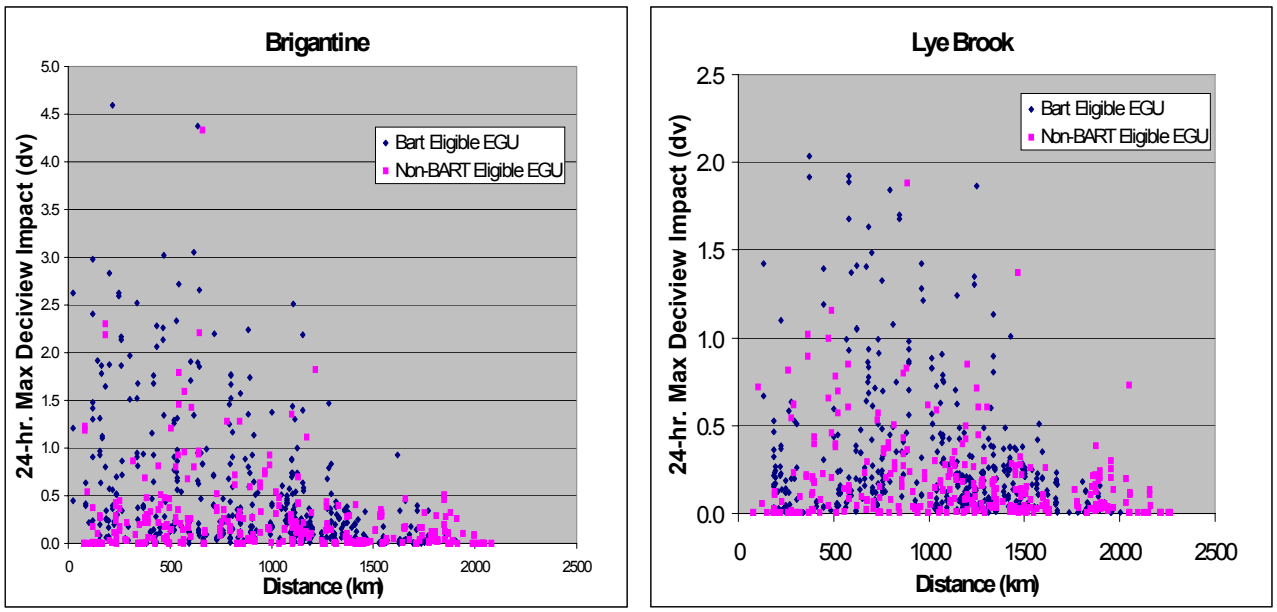
In order to establish that this is a legitimate concern, VT DEC conducted CALPUFF modeling for 818 individual stacks.[2] Many of these emission units are not BART-Eligible,

[1] The example lookup table presented by EPA in their March 12 memorandum to the docket on alternative exemption approaches suggests that significant impacts do not occur beyond 500 km.
[2] A total of 778 CEMS IDs are listed in U.S. EPA's CEMS database within the CALPUFF domain that had SO_2 emissions during all four calendar quarters. Emissions information for the remaining sources in the 818 total were drawn from the 1999 NEI.

but the analysis remains informative as to whether visibility impacts beyond 500 km are significant and what relationship exists between SO_2 emissions divided by distance relative to visibility impact.

Many of the power plants located more than 500 km from our Class I areas (some of which had large Q/d impact) were modeled to have a greater than 0.5 dv threshold visibility impact (maximum 24-hr impact) during 2002 based on their SO_2 emissions alone (See Figure 1).[3] This further substantiates the position that little relationship exists between visibility impact and distance and thus distance, by itself, is not an appropriate determinant of BART status.

Figure 1. CALPUFF modeled maximum 24-hr impact (plotted as a change in dv relative to annual average estimates of natural visibility conditions) of 818 stacks in the Eastern U.S. on Brigantine and Lye Brook Wilderness Areas



We see in Figure 2, however, that the ratio of SO_2 emissions to distance (Q/d) *is* directly related to visibility impact and may be an appropriate determinant of BART status.[4] Figure 2 shows modeled maximum 24-hour impact versus 2002 annual SO_2 emissions divided by distance at Brigantine and Lye Brook for the 818 stacks modeled by CALPUFF.

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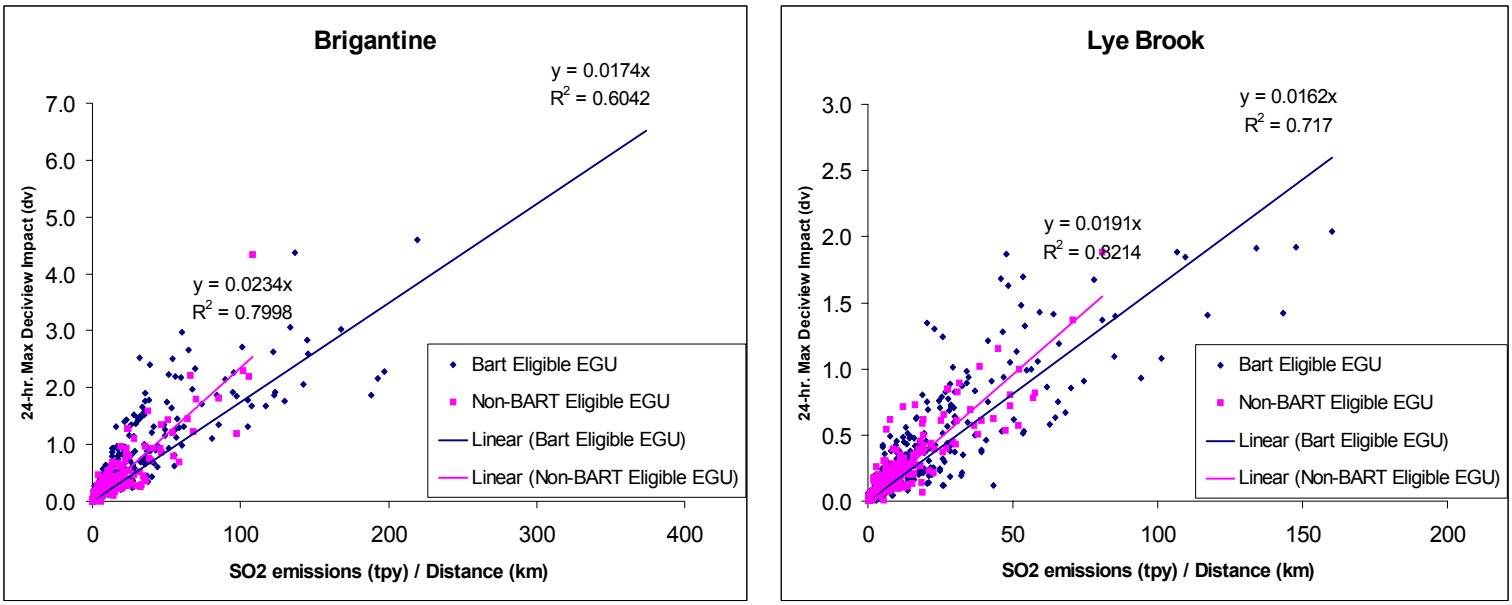
[3] Maximum 24-hr dv impacts were calculated for Brigantine by multiplying CALPUFF modeled maximum SO_4 ion mass concentrations by 1.375 to account for ammonium mass, 3 to account for dry scattering efficiency and 2.91 to account for relative humidity adjustment factor. This extinction increment is added to the annual average natural background extinction estimate converted to dv and then subtracted from annual average dv estimate to arrive at a 24-hr maximum dv impact.

[4] SO_2 emissions are considered independent of NOx and PM emissions because these other pollutants are not expected to exhibit the same relationship to visibility impairment as SO_2. Adding these other pollutant emissions directly to SO_2 emissions only serves to make the Q/d metric less directly related to visibility impact (as measured by correlation).

While this relationship can be used to establish the sort of look-up table described in EPA's memorandum on alternative approaches to exemption tests, we must look at the population of BART-eligible facilities or some other statistically complete sample in order to determine an appropriate threshold value based on this relationship.

Figure 2. Correlation between CALPUFF modeled maximum 24-hour visibility impact (dv) and the ratio of SO_2 emissions divided by distance (Q/d) for 818 EGUs. Separate correlations have been performed for the subset of BART eligible and non-BART eligible EGUs.



Visibility Impact Threshold Analysis

We examine CALPUFF results for 201 of the BART-eligible power plants identified by MANE-VU for which results have been calculated. In order to provide a complete sample, we use the relationship derived in Figure 2 – based on the 201 modeled BART-eligible units and their 2002 NEI emissions information – to estimate appropriate values for the remaining 10 facilities that were not located in the CALPUFF modeling domain and for which CALPUFF results are therefore not available. Within this sample, we find that a threshold of 0.5 dv would result in the identification of approximately 105 facilities with a maximum 24-hour impact at Brigantine greater than this threshold during 2002. These facilities contribute only 90 percent of the cumulative "frequency" impact on visibility at Brigantine. This implies that 106 facilities (comprising almost 10 percent of the cumulative "frequency" impact on Brigantine) might be exempted from BART engineering reviews on the basis of their impact at Brigantine.

For Lye Brook, we find that the 0.5 threshold would include only 79 facilities that contribute 81% of the cumulative "frequency" visibility impact, suggesting that up to 19% of the visibility impact might be exempted using such a threshold.

The EPA memorandum (see footnote 1) suggests that at least 95 percent of the cumulative frequency impact should be required to complete BART determinations (i.e. *not* exempted) (although 98% is indicated by EPA to represent a statistical threshold for outliers as defined by two standard deviations above the mean). The decision to exempt up to five percent of BART eligible source impact seems somewhat arbitrary. In

addition, a fixed percent of the cumulative frequency impact at one site is likely to represent a very different level of stringency relative to other sites. For example, using the CALPUFF maximum 24-hour impact just at these two eastern sites would imply an impact threshold at the 98th percentile of 0.12 dv at Lye Brook and 0.22 at Brigantine. Thus a fixed percentage of frequency impact could lead to two different levels of control stringency. In order to maintain national consistency, it seems more appropriate to use an absolute threshold which could be based cumulative frequency percentages at representative sites.

EPA has also proposed 0.5 dv maximum 24-hour visibility impact as derived using the CALPUFF model over 5 years. This level is supposed to represent the threshold at which a facility is reasonably anticipated to cause or contribute to visibility impairment. Given that several sources taken together with a maximum 24-hour impact of 0.5 dv can cause perceptible visibility impairment, each facility contributes to visibility impairment at levels below the 0.5 dv level. Based on our analysis of CALPUFF modeling results at Brigantine and Lye Brook, a threshold level that is protective at all of our Class I areas appears to be significantly lower than 0.5 dv. A threshold value of 0.12 dv would capture 98 percent of the cumulative frequency EGU impact of BART-eligible power plants at Lye Brook and seems like a more reasonable level to consider for BART exemption. Similarly, 0.22 dv is closer to the value that would capture 98 percent of the cumulative EGU impact at Brigantine. Using the relationships established in Figure 2 for the BART-Eligible sources, these values correspond to threshold Q/d values of about 7.4 and 12.4 tpy/km, respectively.

Therefore, MANE-VU recommends that EPA adopt an exemption approach with a CALPUFF threshold of 0.1 to 0.2 dv and an absolute Q/d threshold of approximately 10. This is half the Q/d value that was suggested in the March 12 memo (based on a previous analysis performed by the North Carolina Department of Natural Resources), but seems to allow exemptions only for those sources which would be considered statistical outliers relative to the total population of BART-eligible EGUs affecting a specific Class I area.

Other BART-Eligible Source Categories

MANE-VU has conducted additional CALPUFF modeling for BART-eligible refineries, industrial boilers, and BART-eligible and non-BART-eligible cement plants and paper and pulp facilities to try and assess whether the relationships between emissions, distance and source impact that are appropriate to the EGU sector are appropriate for other source categories as well.

Figure 3. Correlation between CALPUFF modeled maximum 24-hour visibility impact (dv) and the ratio of SO_2 emissions divided by distance (Q/d) for non-EGU BART-eligible sources within MANE-VU. Sources affecting Lye Brook have very small impact and Q/d, resulting in very poor correlations.

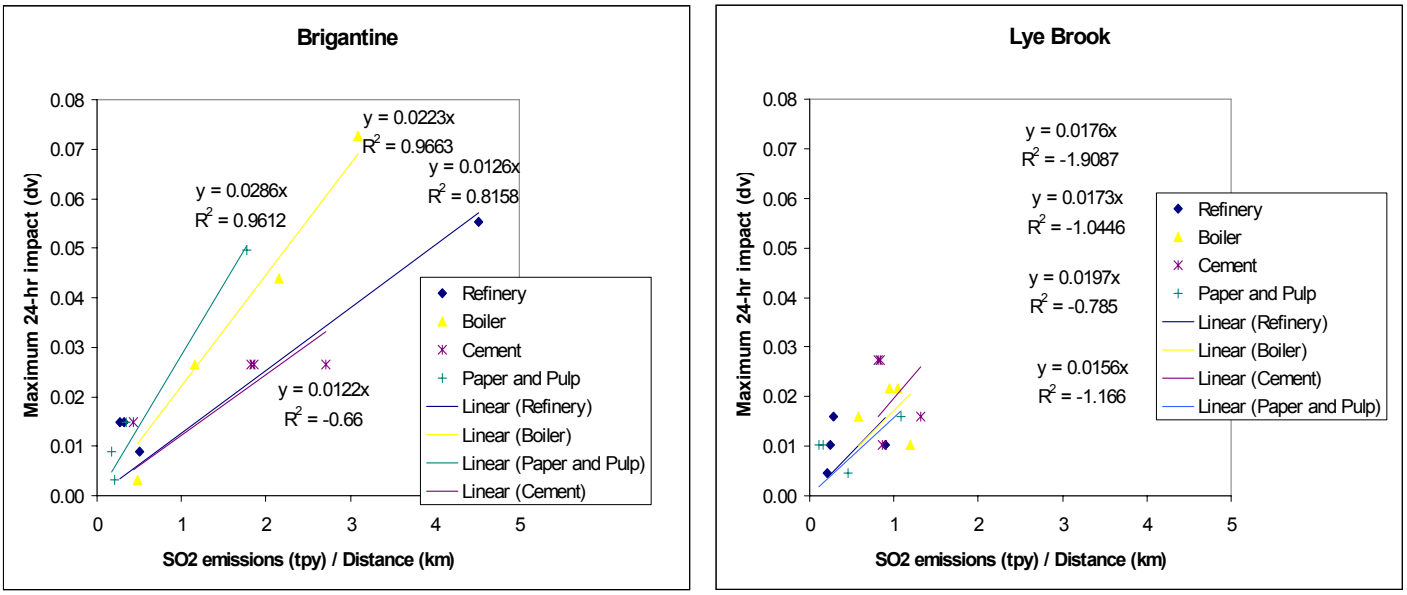


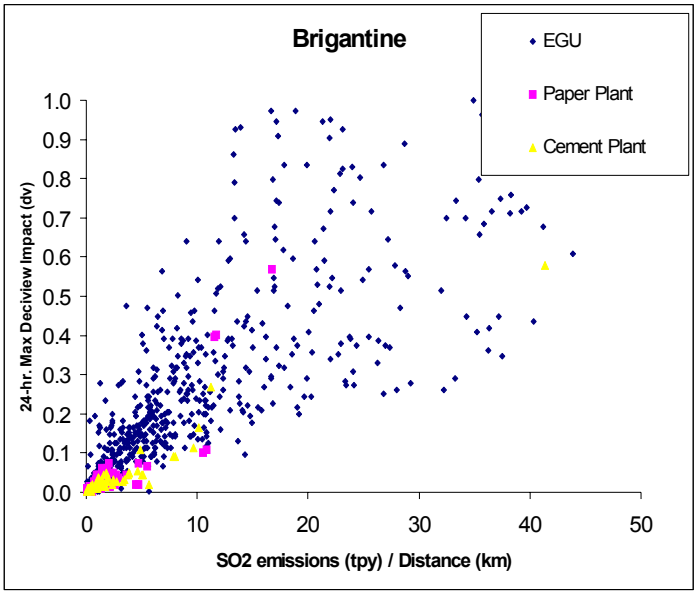
Figure 3 shows a similar set of plots as shown in Figure 2, but for 4 representative BART-eligible MANE-VU sources in each of 4 different non-EGU BART-eligible categories. Although the Brigantine results seem to show slightly different relationships (different slopes) for each of the categories, it is difficult to discern whether this difference arises because of a fundamental difference in the way these facilities emit sulfur dioxide (i.e. different stack parameters, emission rates, etc) or whether we simply have too poor a statistical sample with only 4 sources. We do note, however, that all slopes appear to lie in a range of 0.1 to 0.2 (and thus Q/d values of 7 to 12 based on the Lye Brook and Brigantine results).

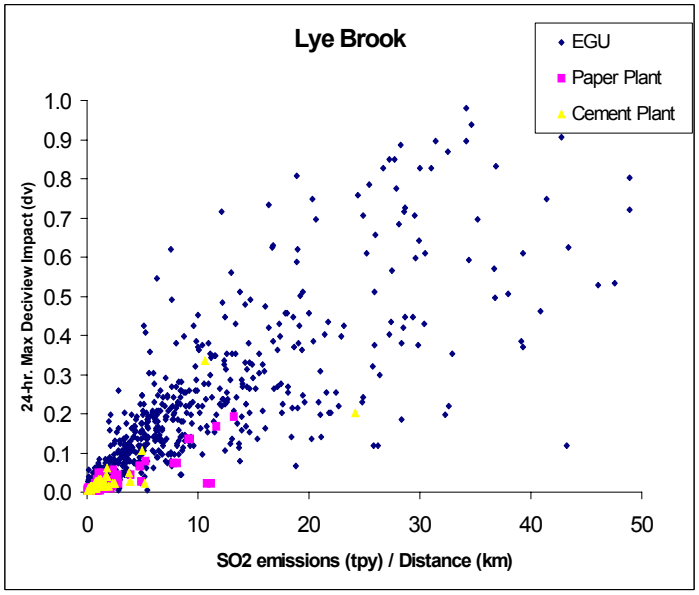
In order to understand the effect of sample size on this analysis, emission information for 131 point sources identified in the 1999 NEI (within the CALPUFF modeling domain) as "Paper Plant" and 63 facilities identified as "Cement Plant" was extracted and used to model the impact of these sources on the two Class I areas. Figure 4 demonstrates that regardless of the BART status for the individual facilities in this sample, the category of sources that comprise the paper and cement plant designations seem to have similar characteristics to the EGU category (slopes of 0.024, 0.014, and 0.018 respectively at Brigantine and 0.011, 0.013 and 0.016 for Lye Brook). Averaging these results together, results in a value of 0.016 with a 95 percent confidence interval between 0.012 and 0.02. MANE-VU recommends that similar values be used to design an appropriate Q/d-based BART exemption screening approach for non-EGU source categories.

In closing, we note that the analysis presented here is based on only a single year of CALPUFF modeling results. If a full five years of modeling were available, it is likely that higher 24-hour maximum impacts might occur for some facilities, without changing Q/d values at all, resulting in a steeper slope and a lower Q/d value corresponding the 98 percent threshold. In addition this analysis only looks at the visibility and Q/d impacts of SO_2 emissions. When nitrate- and primary PM-related visibility are considered,

individual source impacts are likely to be higher as well. Finally, the impacts of these sources are likely to be lower at eastern MANE-VU class I areas (e.g. Moosehorn) and as with Lye Brook, the resulting threshold values are likely to be even lower.

Figure 4. Correlation between CALPUFF modeled maximum 24-hour visibility impact (dv) and the ratio of SO_2 emissions divided by distance (Q/d) for 131 paper plants and 63 cement plants listed in the 1999 NEI as well as the 818 EGUs listed in the 2002 CEMS database. Note that EGU impacts extend beyond the range of the scales in these figures which were chosen to highlight the range of paper and cement plant impact.





Appendix A

List of potentially BART-Eligible power plants in the Eastern U.S., their annual average emissions, source receptor distance from Brigantine, N.J. and Lye Brook, VT and the ratio of emissions to distance for both Class 1 areas.

Plant Name	2002 SO_2 Emissions tpy	**Distance to Brigantine (km)**	E/D	**Distance to Lye Brook (km)**	E/D
B L England	12176	25	485.1	447	27.2
Montour	111860	259	431.7	372	300.6
Keystone	151063	437	346.1	**584**	258.7
Brunner Island	68997	203	339.2	449	153.5
Hatfield's Ferry	159181	470	338.9	**673**	236.4
Morgantown	70538	251	281.4	**623**	113.2
W H Sammis	145556	**540**	269.8	**686**	212.3
Chalk Point	52736	219	241.3	**593**	89.0
Chesterfield	74068	345	214.9	**735**	100.8
Conesville	135911	**639**	212.7	**797**	170.5
C P Crane	32470	165	196.3	**504**	64.4
Fort Martin	91386	469	194.9	**683**	133.8
Muskingum River	115851	**620**	186.9	**815**	142.2
Roxboro	95860	**523**	183.3	**897**	106.8
Belews Creek	103486	**606**	170.8	**965**	107.2
Indian River	20012	119	168.5	**537**	37.3
John E Amos	108042	**646**	167.2	**896**	120.5
Gibson	173481	**1157**	150.0	**1339**	129.5
Bowen	161224	**1103**	146.1	**1430**	112.7
J M Stuart	117808	**807**	146.0	**1022**	115.3
Portland	24416	169	144.3	296	82.4
Martins Creek	22110	156	141.4	317	69.8
Cardinal	74951	**536**	139.9	**702**	106.8
Dickerson	34009	261	130.5	**568**	59.8
Hudson	19007	146	129.9	278	68.4
Northport	24228	188	128.9	247	98.2
Monroe	92188	**796**	115.8	**848**	108.7
Marshall	82538	**717**	115.1	**1075**	76.8
Edge Moor	10563	95	111.4	428	24.7
Yorktown	33131	305	108.5	**717**	46.2
Brayton Point	39701	371	107.0	225	176.4
Eastlake	67696	**642**	105.5	**704**	96.1
Herbert A Wagner	18857	182	103.6	**525**	35.9
Mitchell	56198	**546**	102.9	**738**	76.2
E C GASTON	128104	**1276**	100.4	**1598**	80.2
Miami Fort	85976	**891**	96.5	**1074**	80.0
Chesapeake	32438	340	95.3	**758**	42.8
Cheswick	42137	470	89.6	**623**	67.6
Warrick	99093	**1130**	87.7	**1331**	74.5
Walter C Beckjord	70134	**849**	82.6	**1042**	67.3
Possum Point	21061	265	79.4	**620**	34.0

Paradise	84374	**1118**	75.5	**1343**	62.8
Harllee Branch	74198	**1054**	70.4	**1417**	52.4
Tanners Creek	62757	**896**	70.0	**1080**	58.1
Avon Lake	46138	**681**	67.8	**755**	61.1
Merrimack	30735	478	64.3	134	228.9
Wansley	73848	**1159**	63.7	**1496**	49.4
St Clair	46708	**765**	61.1	**761**	61.4
Big Sandy	42032	**721**	58.3	**971**	43.3
Bruce Mansfield	30415	**524**	58.1	**664**	45.8
Mt Storm	23467	415	56.5	**675**	34.8
Wabash River	62080	**1112**	55.9	**1257**	49.4
Canal	22073	419	52.6	264	83.7
E W Brown	46735	**910**	51.4	**1145**	40.8
Danskammer	12158	238	51.2	188	64.6
Ghent	46688	**916**	51.0	**1111**	42.0
Cayuga	55772	**1109**	50.3	**1240**	45.0
H L Spurlock	40607	**812**	50.0	**1024**	39.7
Gen J M Gavin	32474	**663**	49.0	**886**	36.6
Winyah	37731	**794**	47.5	**1201**	31.4
Elmer W Stout	47444	**1006**	47.2	**1152**	41.2
Coleman	49162	**1082**	45.4	**1287**	38.2
Bull Run	42287	**934**	45.3	**1231**	34.4
Wateree	36499	**834**	43.8	**1223**	29.8
Gorgas	56227	**1318**	42.7	**1627**	34.6
Petersburg	47302	**1110**	42.6	**1292**	36.6
Lovett	7996	203	39.3	221	36.1
Widows Creek	44141	**1122**	39.3	**1423**	31.0
Colbert	50187	**1296**	38.7	**1574**	31.9
Barry	59718	**1546**	38.6	**1882**	31.7
J H Campbell	40441	**1054**	38.4	**1061**	38.1
Trenton Channel	30251	**791**	38.2	**829**	36.5
Yates	41676	**1150**	36.2	**1488**	28.0
Sioux	46125	**1364**	33.8	**1511**	30.5
Labadie	47755	**1417**	33.7	**1570**	30.4
Coffeen	42504	**1286**	33.1	**1434**	29.6
L V Sutton	20932	**656**	31.9	**1071**	19.5
Salem Harbor	14172	453	31.3	196	72.3
Williams	25619	**868**	29.5	**1272**	20.1
Greene County	41075	**1417**	29.0	**1734**	23.7
Roseton	6841	237	28.8	189	36.3
Jefferies	23920	**850**	28.1	**1252**	19.1
Lee	15583	**556**	28.0	**962**	16.2
Cliffside	22164	**799**	27.7	**1152**	19.2
E D Edwards	35901	**1299**	27.6	**1395**	25.7
Jack Mcdonough	28096	**1091**	25.8	**1428**	19.7
R M Schahfer	27587	**1082**	25.5	**1163**	23.7
Cooper	22775	**926**	24.6	**1189**	19.2
Hammond	27695	**1128**	24.6	**1446**	19.1
Dan E Karn	21505	**908**	23.7	**866**	24.8
Mill Creek	22617	**1005**	22.5	**1216**	18.6
Columbia	27589	**1322**	20.9	**1314**	21.0

Canadys Steam	18659	**900**	20.7	**1297**	14.4
Riverbend	14996	**734**	20.4	**1097**	13.7
Asheville	16753	**840**	19.9	**1175**	14.3
Baldwin	26347	**1339**	19.7	**1510**	17.5
WISVEST - Bridgeport Harbor	4103	218	18.8	220	18.7
Meredosia	25254	**1378**	18.3	**1495**	16.9
Joilet 29	20736	**1176**	17.6	**1244**	16.7
Harrison	8719	**504**	17.3	**731**	11.9
Bay Shore	13612	**798**	17.1	**861**	15.8
Rush Island	23314	**1376**	16.9	**1545**	15.1
Victor J Daniel Jr	27270	**1620**	16.8	**1956**	13.9
WISVEST - New Haven Harbor	4016	241	16.7	208	19.3
Frank E Ratts	18107	**1112**	16.3	**1294**	14.0
Sherburne County	26818	**1720**	15.6	**1667**	16.1
Jack Watson	25135	**1660**	15.1	**1992**	12.6
Newton	17935	**1191**	15.1	**1351**	13.3
Cane Run	15013	**1000**	15.0	**1207**	12.4
Edgewater	17484	**1197**	14.6	**1177**	14.9
Whitewater Valley	12911	**894**	14.4	**1047**	12.3
Allen S King	23336	**1625**	14.4	**1578**	14.8
Ashtabula	8492	**597**	14.2	**640**	13.3
Cumberland	16713	**1205**	13.9	**1447**	11.5
Kincaid	17703	**1288**	13.7	**1418**	12.5
Dolphus M Grainger	10011	**749**	13.4	**1156**	8.7
Powerton	16869	**1300**	13.0	**1398**	12.1
Presque Isle	16926	**1312**	12.9	**1184**	14.3
Valley (WEPCO)	14733	**1192**	12.4	**1199**	12.3
Clay Boswell	21232	**1770**	12.0	**1666**	12.7
Will County	13729	**1173**	11.7	**1236**	11.1
New Madrid	15850	**1362**	11.6	**1580**	10.0
Mystic	5016	432	11.6	188	26.7
Charles R Lowan	17195	**1504**	11.4	**1835**	9.4
George Neal North	21193	**1863**	11.4	**1893**	11.2
Buck	7456	**668**	11.2	**1033**	7.2
Nelson Dewey	15774	**1430**	11.0	**1453**	10.9
South Oak Creek	12911	**1178**	11.0	**1195**	10.8
Newington	5251	**506**	10.4	189	27.7
Genoa	15099	**1466**	10.3	**1461**	10.3
Thomas Hill	15265	**1557**	9.8	**1672**	9.1
Montrose	15877	**1687**	9.4	**1828**	8.7
Waukegan	10818	**1167**	9.3	**1200**	9.0
Robert Reid	10620	**1151**	9.2	**1359**	7.8
Vienna	1476	161	9.2	**566**	2.6
Michigan City	9209	**1080**	8.5	**1140**	8.1
Duck Creek	11061	**1326**	8.3	**1425**	7.8
Riverside	12929	**1662**	7.8	**1617**	8.0
State Line	8466	**1130**	7.5	**1190**	7.1
Ravenswood	1118	150	7.5	274	4.1
Eckert Station	6583	**920**	7.2	**931**	7.1

Kraft	7217	**1013**	7.1	**1411**	5.1
Marion	9022	**1276**	7.1	**1471**	6.1
Sibley	11845	**1693**	7.0	**1811**	6.5
Bowline Point	1362	198	6.9	227	6.0
Elmer Smith	7298	**1109**	6.6	**1317**	5.5
Charles Poletti	1010	154	6.6	270	3.7
F B Culley	7145	**1129**	6.3	**1331**	5.4
Lakeside	7245	**1296**	5.6	**1420**	5.1
Pulliam	6922	**1251**	5.5	**1201**	5.8
Blount Street	7205	**1307**	5.5	**1316**	5.5
Wood River	7296	**1351**	5.4	**1500**	4.9
Oswego	2480	476	5.2	277	8.9
Benning	1094	225	4.9	**571**	1.9
Bailly	5245	**1096**	4.8	**1159**	4.5
Manitowoc	5345	**1208**	4.4	**1172**	4.6
Erickson	3881	**926**	4.2	**939**	4.1
Warren	1956	479	4.1	**518**	3.8
Fair Station	5627	**1421**	4.0	**1484**	3.8
Lake Shore	2460	**649**	3.8	**721**	3.4
Norwalk Harbor	741	199	3.7	232	3.2
Burlington	5281	**1422**	3.7	**1508**	3.5
Mitchell	4584	**1249**	3.7	**1621**	2.8
William F Wyman	1984	**595**	3.3	249	8.0
Montville	911	292	3.1	214	4.3
Milton L Kapp	4115	**1354**	3.0	**1407**	2.9
HMP&L Station	3495	**1153**	3.0	**1361**	2.6
Lansing	4404	**1456**	3.0	**1458**	3.0
Prairie Creek	4317	**1471**	2.9	**1518**	2.8
James River	4730	**1658**	2.9	**1832**	2.6
Middletown	799	281	2.8	183	4.4
Dallman	3429	**1296**	2.6	**1420**	2.4
Asbury	4364	**1767**	2.5	**1926**	2.3
Mitchell	1168	478	2.4	**654**	1.8
Harbor Beach	1872	**836**	2.2	**771**	2.4
Muscatine	3121	**1419**	2.2	**1484**	2.1
Hawthorn	3772	**1719**	2.2	**1836**	2.1
Southwest	3399	**1668**	2.0	**1840**	1.8
Hamilton	1566	**867**	1.8	**1040**	1.5
Lake Road	2847	**1746**	1.6	**1846**	1.5
Hoot Lake	2836	**1907**	1.5	**1836**	1.5
James De Young	1277	**1039**	1.2	**1044**	1.2
Blue Valley	1366	**1708**	0.8	**1826**	0.7
Columbia	891	**1537**	0.6	**1670**	0.5
Ames	947	**1634**	0.6	**1676**	0.6
Silver Lake	886	**1573**	0.6	**1556**	0.6
Collins	474	**1194**	0.4	**1266**	0.4
Streeter Station	582	**1532**	0.4	**1562**	0.4
Henderson I	385	**1153**	0.3	**1354**	0.3
Cleary Flood	107	388	0.3	218	0.5
Pella	415	**1589**	0.3	**1651**	0.3
Mcclellan	442	**1760**	0.3	**2010**	0.2

Carl Bailey	381	**1563**	0.2	**1794**	0.2
Dean H Mitchell	128	**1119**	0.1	**1182**	0.1
Astoria	17	154	0.1	270	0.1
Thomas Fitzhugh	172	**1767**	0.1	**1970**	0.1
Gilbert	9	141	0.1	326	0.0
Arthur Kill	4	127	0.0	298	0.0
Homer City	7	421	0.0	**581**	0.0
Fox Lake	23	**1743**	0.0	**1738**	0.0
Conemaugh	4	406	0.0	**580**	0.0
New Boston	3	429	0.0	193	0.0
Gerald Andrus	8	**1635**	0.0	**1904**	0.0
Baxter Wilson	8	**1681**	0.0	**1970**	0.0
Lake Catherine	4	**1728**	0.0	**1961**	0.0
Moselle	2	**1604**	0.0	**1920**	0.0
Eddystone	0	87	0.0	409	0.0
Robert E Ritchie	1	**1535**	0.0	**1789**	0.0
Mckee Run	0	100	0.0	486	0.0
New Castle	0	**528**	0.0	**646**	0.0
E F Barrett	0	145	0.0	285	0.0

MANE-VU
Mid-Atlantic/Northeast Visibility Union

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September 17, 2001

Air and Radiation Docket and Information Center (6102)
Attention: **Docket No. A-2000-28**
U. S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Docket:

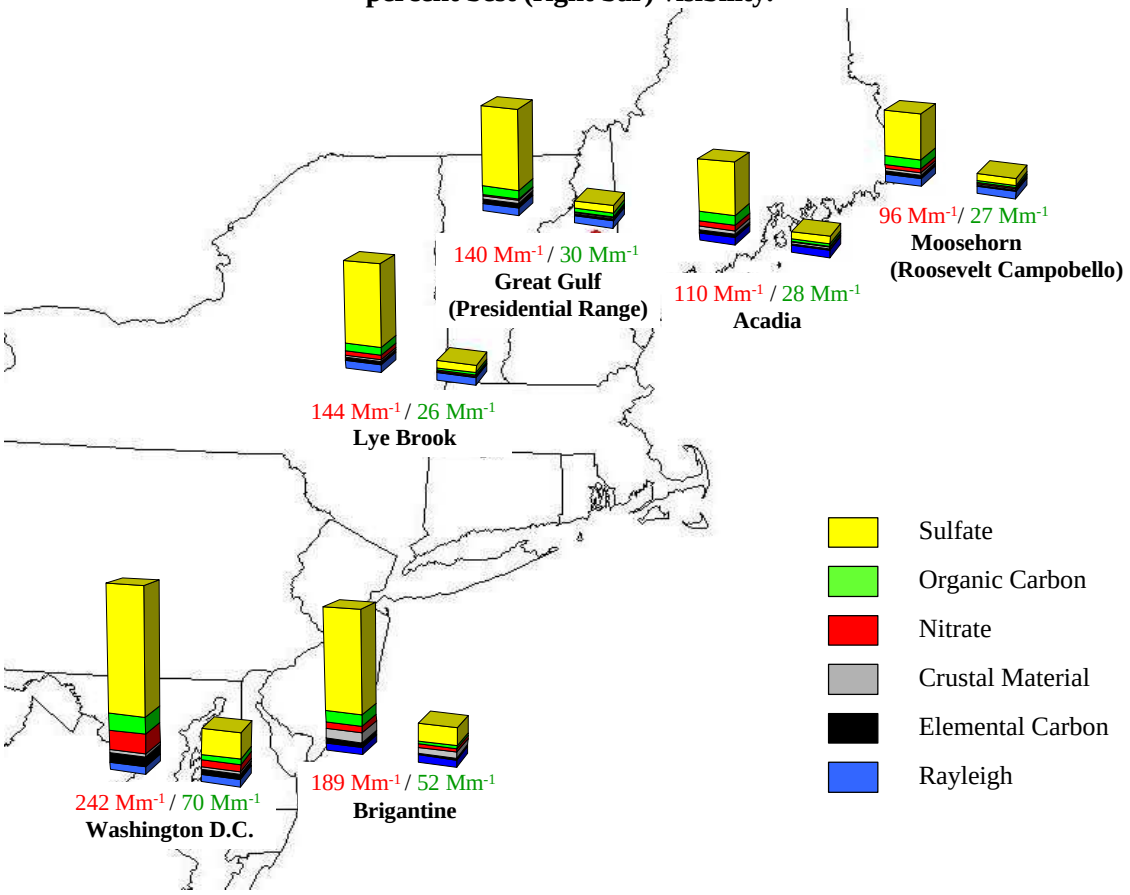
The Mid-Atlantic/Northeast Visibility Union (MANE-VU) appreciates the opportunity to comment on *Proposed Guidelines for Best Available Retrofit Technology (BART) Determinations Under the Regional Haze Regulations* which appeared in the July 20, 2001 issue of the Federal Register. MANE-VU is a regional planning organization recently formed to support the planning efforts of its members as they prepare to comply with visibility requirements under the regional haze rule [64 Fed. Reg. 35714 (July 1, 1999)]. The organization's membership includes: Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, the Penobscot Indian Nation, Rhode Island, the St. Regis Mohawk Tribe, Vermont, as well as federal land management agencies and the U.S. EPA.

Emissions of sulfur dioxide (SO_2) and nitrogen oxide (NO_X) from stationary sources are a major concern to the states and tribes charged with remedying visibility impairment in the Mid-Atlantic and Northeast Region. In fact the sulfate fraction of particulate matter (PM), formed from precursor emissions of SO_2, is responsible for over two-thirds of the visibility impairment at mandatory Class I Federal Areas in the Northeast and Mid-Atlantic (i.e., those wilderness areas and parks regulated under the regional haze rule) on days with the worst visibility conditions (see Figure 1; NESCAUM, 2001a). The nitrate fraction of particulate matter is formed from precursor emissions of NO_X and currently contributes less to visibility impairment, relative to sulfate, on the days with the worst visibility conditions; however, it plays a more significant role in PM formation during winter months (see Figure 2). Additionally, nitrate may play a far more significant role in visibility impairment if SO_2 controls are successful at substantially reducing sulfate precursor species leaving ammonia available to form ammonium nitrate (NESCAUM, 2001a). Thus it is imperative that controls for SO_2 and NO_X be implemented simultaneously.

While the regulatory driver for the regional haze rule (and consequently the BART provisions within the regional haze rule) is the protection of visibility in Class I areas it is important to note that the derived visibility benefits which result from the implementation of these regulations will be experienced across the entire MANE-VU region. The economic and quality of life benefits of improved visibility will be broadly shared by the public, whether living near or visiting a rural national park, or enjoying an improved skyline in urban locations.

In addition to visibility benefits, the substantial SO_2 and NO_X, reductions achievable through the BART program would also produce significant public health benefits by reducing the incidence of cardiac and respiratory disease linked to fine particle pollution. BART controls would also reduce acid deposition and attendant

Figure 1: Speciated contribution to total atmospheric light extinction in or near Class I areas in the Northeast and Mid-Atlantic states on days with the 20 percent worst (left bar) and 20 percent best (right bar) visibility.

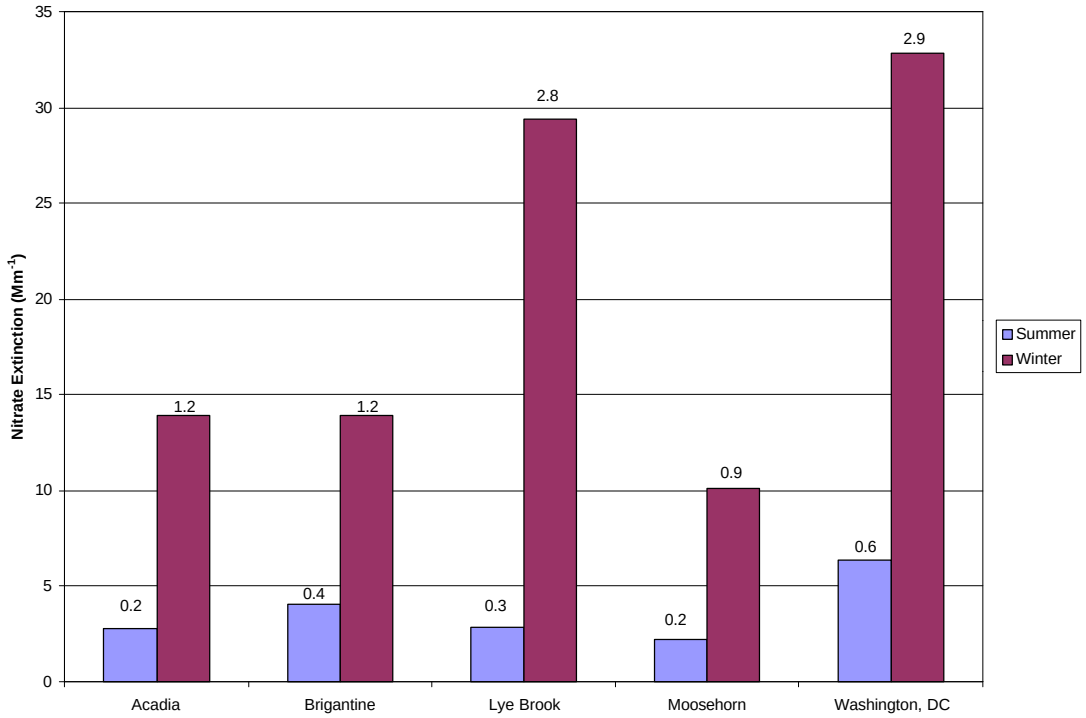


Note: The "Rayleigh" fraction of light extinction refers to the natural scattering of light by molecules of air.

acidification of soils and surface waters and prevent further destruction of sensitive aquatic ecosystems through both acidification and eutrophication.

The BART provisions in the regional haze rule provide an important first step toward the implementation of comprehensive plans to restore pristine visibility conditions to all Class I areas. These requirements could potentially result in the reduction of over five million tons annually of SO_2 emissions and over two million tons annually of NO_X emissions from steam-electric boilers alone relative to a 1999 baseline (NESCAUM, 2001b). The BART program is critical, given the substantial geographic overlap between the largest SO_2-emitting BART-eligible power plants and the source region likely to contribute to visibility impairment in MANE-VU Class I areas (see Figure 3; NESCAUM 2001b). An important issue in this regard – and one that has not been adequately addressed in the proposed guidance – is the potential overlap between BART requirements and those pending under existing regulatory programs (e.g. Title IV (acid rain program) and the NO_X SIP call). As detailed more fully in a recent NESCAUM report (NESCAUM, 2001b), failure to account for potential interactions between different regulatory programs may significantly diminish the BART program's ability to deliver visibility and public health benefits beyond those that would accrue under existing programs. Hence, MANE-VU strongly recommends that EPA revise the proposed guidelines for BART implementation to address the potential interaction of BART-generated emissions allowances and existing trading programs and more specifically to ensure that BART implementation provides for substantial additional emissions reductions that will be needed to ensure continued progress toward national visibility goals.

Figure 2: Seasonal comparison of nitrate contribution to visibility impairment at IMPROVE sites in the Northeast and Mid-Atlantic States



Note: The number at the top of each column represents the seasonal average nitrate contribution to fine particle *mass* in $\mu g/m^3$. Although nitrate contributions to visibility impairment are considerably larger during the winter, they remain a relatively small fraction of visibility impairment (generally <10%) relative to sulfate (60-80%).

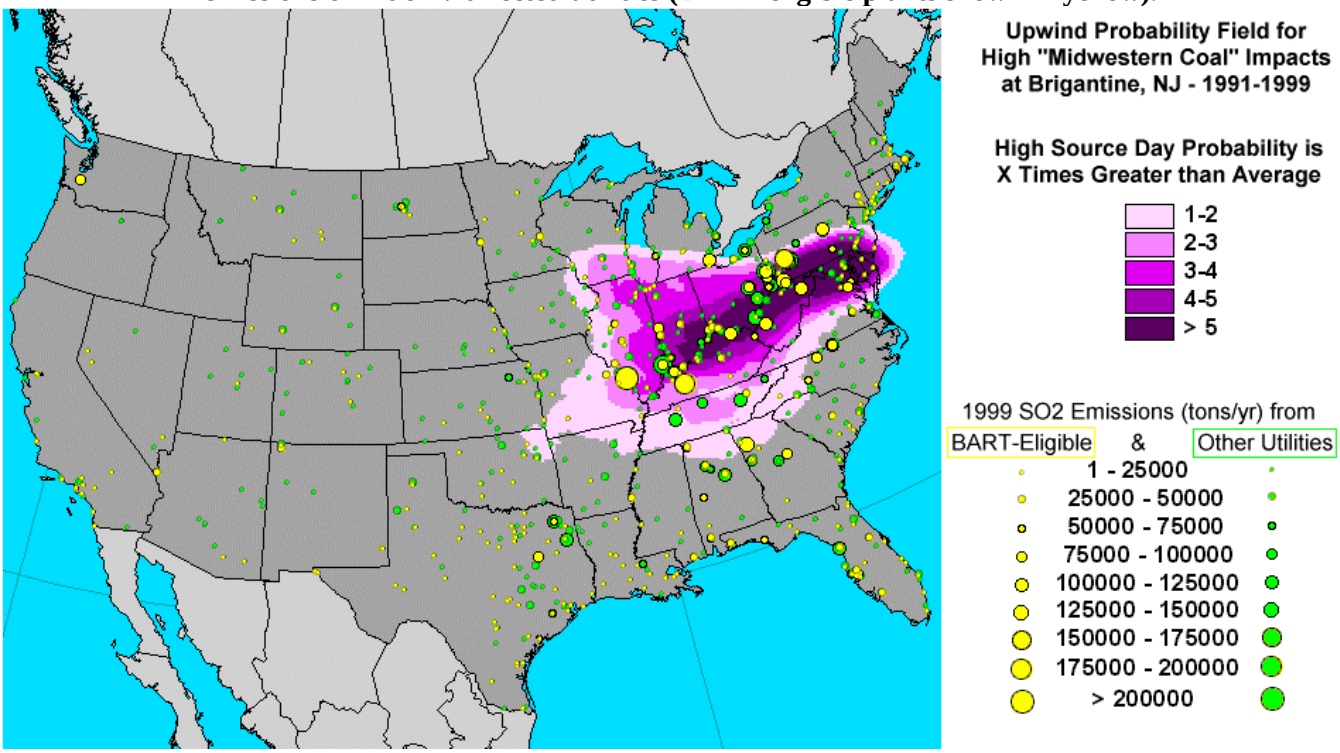
Many issues relating to the regional haze rule and the proposed BART guidelines have been investigated in reports produced for the MANE-VU regional planning organization by the Northeast States for Coordinated Air Use Management (NESCAUM). These reports, *Regional Haze and Visibility in the Northeast and Mid-Atlantic States* and *A Basis for Control of BART-Eligible Sources* are therefore included with this submission to the docket for consideration by the EPA and provide technical support for many of the specific comments on the proposed rulemaking that follow. Appropriate section titles and excerpts from the proposed rule are shown below in bold italics, followed by our specific comments.

Statutory Requirement for BART Guidelines

"we request comment on whether the regional haze rule should: (1) require use of the guidelines only for 750 megawatt utilities, with the guidelines applying as guidance for the remaining categories, or (2) require use of the guidelines for all of the affected source categories."

We believe that that regional haze rule should require use of the guidelines for BART implementation for all of the affected source categories listed in the rule. While fossil-fuel fired electric generating plants with a capacity greater than 750 megawatts represent a substantial fraction of the potential reductions under the BART program, emissions reductions that can be achieved by application of BART to plants with a capacity less than 750 megawatts and the remaining 25 BART-eligible sectors are expected to be significant and necessary to achieve the national visibility goals. We encourage EPA to apply the proposed BART guidelines consistently across all BART-eligible sectors.

Figure 3: Geographic regions with higher than average probability of association with "midwestern coal" impacts measured at Brigantine Wilderness Area between 1991 and 1999. Also shown are locations and emissions of Title-IV affected utilities (BART-eligible plants shown in yellow).



Revision to 1980 BART Guidelines for "Reasonably Attributable" Visibility Impairment

"Given the advances in control technology that have occurred over the past 20 years, we believe that it should be made clear that the BART analyses for reasonably attributable visibility impairment should not be based on an assumption that the NSPS level of control represents the maximum achievable level of control."

We strongly agree that BART analyses for reasonably attributable visibility impairment should not be based on an assumption that new source performance standards (NSPS) generally represents a maximum achievable level of control. Historically, NSPS for many categories have been revised at a slow pace (others have not been revised at all) with the net result that NSPS do not represent the state of technology for many categories. Many advances have been made over the last two decades and we have seen dramatic improvements in control technology as well as dramatic decreases in costs. "Reasonably attributable" BART analyses should consider control levels more stringent than NSPS.

40 CFR Part 51, Appendix Y: Guidelines for BART Determinations Under the Regional Haze Rule

(II)(A)(1) Step 1. Identify Emission Units in the BART Categories

" 'Fossil-fuel fired boilers of more than 250 million BTU/hr heat input.' The EPA proposes two options for interpreting this category title. The first option is the approach used in the regulations for prevention of significant deterioration (PSD)."

EPA should interpret the source category entitled "Fossil-Fuel boilers of more than 250 million BTU/hr heat input" to be consistent with regulations for prevention of significant deterioration (PSD).

(II)(A)(2) Step 2. Identify the Start-Up Dates of the Emission Units

"if an emissions unit began operation before 1962, it is not BART-eligible if it is modified at a later date, so long as the modification is not also a 'reconstruction.' Similarly, an emissions unit which began operation within the 1962-1977 time window, but was modified after August 7, 1977, is BART-eligible."

We agree with EPA's interpretation for "modifications." A modification to a facility that began operating within the 1962-1977 time window that is not also a "reconstruction" (and thus subject to BACT, LAER, or NSPS) should not exempt a source from BART-eligibility, assuming that modification occurred after August 7, 1977. Consistent with this interpretation, sources which began operating prior to August 7, 1962 would not be BART-eligible if they were modified during the 15-year BART time window, unless that modification was also a "reconstruction".

(III). How to Identify Sources "Subject to BART"

"the statutory language represents a very low triggering threshold. In implementing the regional haze rule, you should find that a BART-eligible source is 'reasonably anticipated to cause or contribute' to regional haze if the source emits pollutants within a geographic region from which pollutants can be emitted and transported downwind to a Class I area."

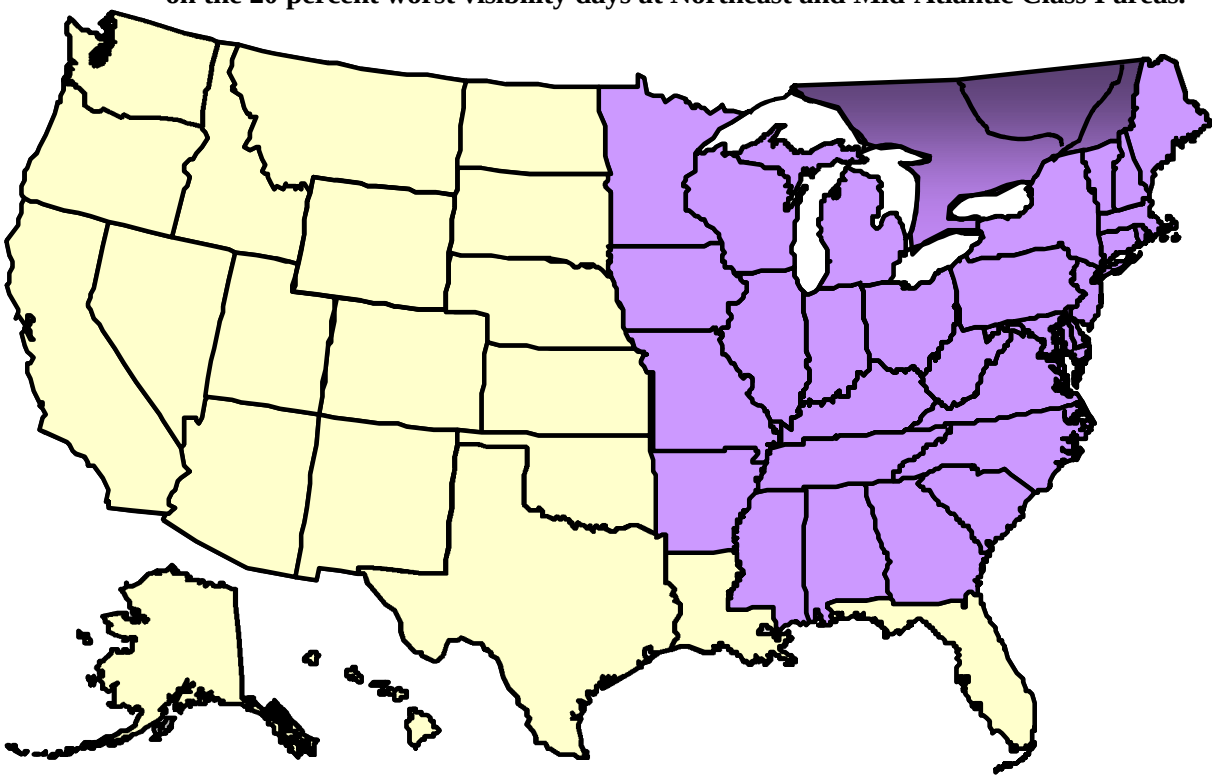
Given the degree of progress needed to meet visibility goals in the coming decades, we strongly encourage EPA to maintain proposed statutory language with respect to a "very low triggering threshold." Specifically, we strongly agree that a source should be found "subject to BART" if it emits pollutants within a geographic region from which pollutants can be emitted and transported downwind to a Class I area.

(III)(A). How Can I Identify "the Geographic Area" or "Region" That Contributes to a Given Class I Area?

"… This approach can be referred to as a 'zero-out' approach where you zero out the emissions from the State or area that is suspected to make a trivial contribution to visibility impairment in a Class I area. Under this approach, you would compare: (1) the visibility impairment in each affected Class I area (for the average of the 20 percent most impaired days and the 20 percent least impaired days) when the emissions from the State or area suspected to have a trivial contribution are included in the modeling analysis, and (2) the visibility impairment in each affected Class I area (for the average of the 20 percent most impaired days and the 20 percent least impaired days), excluding from the modeling analysis the emissions from the geographic area suspected to have a trivial impact."

MANE-VU strongly feels that allowing the "zero-out" approach for exemption demonstrations on a state-by-state basis will significantly reduce the effectiveness of the BART program by allowing individual states or geographical regions to claim "trivial" impacts. This is counterproductive to the aim of the regional haze rule to "address visibility impairment due to the cumulative air pollutant emissions from numerous sources over a wide geographic area." Recent analyses indicate that a tentatively identified 29-state source region covering much of the eastern United States (see Figure 4; NESCAUM, 2001b) may reasonably be anticipated to cause or contribute to visibility impairment in MANE-VU class I areas. There are 149 remaining Class I areas subject to the regional haze rule, and we believe it would be difficult for any state (within the continental U.S.) to demonstrate that they have only "trivial" impact on any Class I area. MANE-VU recommends that the proposed rule be revised to establish a presumption that all geographic areas or regions of the continental U.S. contribute to regional haze in at least one Class I area.

Figure 4: Preliminary source region reasonably anticipated to cause or contribute to visibility impairment on the 20 percent worst visibility days at Northeast and Mid-Atlantic Class I areas.



(IV)(B). How Does a BART Engineering Analysis Compare to a BACT Review Under the PSD Program?

"In this proposal, we are seeking comment on two alternative approaches for conducting a BART engineering analysis. EPA prefers the first approach."

MANE-VU strongly endorses the EPA preferred approach for conducting a BART engineering analysis. All available control technologies for a given source should be ranked using a "Top-Down BART" approach with descending order of control effectiveness. The most stringent alternative is selected as "best" unless it is demonstrated and documented that the alternative cannot be justified based upon technical considerations, costs, energy impacts and non-air quality environmental impacts. To consider alternative approaches for conducting a BART review, such as the consideration of *least-stringent* technologies *first*, would be counterproductive when the statutory objective is clearly aimed at identifying the best control options.

(IV)(D)(1). Step 1: How Do I Identify All Available Retrofit Emission Control Techniques?

"We note that there are situations where NSPS standards do not require the most stringent level of available control for all sources within a category. … However, such controls must still be considered available technologies for the BART selection process."

Consistent with earlier comments on requirements for "reasonably attributable" visibility impairment, MANE-VU strongly supports EPA in requiring all control technologies be considered for BART in a "Top-Down BART" approach, including those more stringent than NSPS for applicable source categories.

(IV)(D)(1). Step 1: How Do I Identify All Available Retrofit Emission Control Techniques?

"Potentially applicable retrofit control alternatives can be categorized in three ways.

- ***Pollution prevention: use of inherently lower-emitting processes/practices, including the use of materials and production processes and work practices that prevent emissions and result in lower "production-specific" emissions,***

- ***Use of, (and where already in place, improvements in the performance of) add-on controls, such as scrubbers, fabric filters, thermal oxidizers and other devices that control and reduce emissions after they are produced, and***

- ***Combinations of inherently lower emitting processes and add-on controls."***

MANE-VU recommends revising the second bullet in this passage to read: "Use of, (and where already in place, improvements in the performance of) add-on controls and widely used combinations of add-on controls, such as scrubbers, fabric filters, thermal oxidizers and other devices that control and reduce emissions after they are produced" to reinforce the notion that combinations of add-on controls can greatly increase control efficiencies relative to the use of a single control technology in isolation.

(IV)(D)(3). Step 3: How Do I Develop a Ranking of the Technically Feasible Alternatives?

"In some instances, a control technology may reduce more than one visibility impairing pollutant. We request comment on whether and how the BART guidelines should address the process for ranking such control technologies against control technologies which reduce emissions of only one pollutant."

MANE-VU supports a multi-pollutant approach to emissions reductions. To the extent that controls are capable of reducing the emissions of multiple pollutants simultaneously, these controls should be favored over single pollutant controls. Considerations of simultaneous pollutant reductions should not, however, justify reduced stringency of controls for the pollutant which is specifically targeted under the BART review.

(IV)(D)(4). Step 4: For a BART Engineering Analysis, What Impacts Must I Calculate and Report? What Methods Does EPA Recommend for the Impacts Analysis?

"After you identify and rank the available and technically feasible control technology options, you must then conduct three types of impact analyses when you make a BART determination:

Impact analysis part 1: Costs of compliance, (taking into account the remaining useful life of the facility)

Impact analysis part 2: Energy impacts, and

Impact analysis part 3: Non-air quality environmental impacts.

In this section, we describe how to conduct each of these three analyses. You are responsible for presenting an evaluation of each impact along with appropriate supporting information."

While the guidelines are clear regarding how to document control costs, energy impacts, and non-air quality environmental impacts, they fail to clearly define what cost would be considered unreasonable, what energy impact would be considered unacceptable or what threshold environmental impact would result in the elimination of a particular technology option. While we agree that the most stringent control technologies should not be selected as BART arbitrarily or capriciously, we contend that the economic and environmental impacts of specific control

options must be weighed against the full range of expected benefits. This includes improvements in visibility, protection of public health, mitigation of acid deposition and ozone formation, and the restoration of marine ecosystem health. In addition, we propose that regulatory language be revised to indicate that only "extraordinarily high cost, energy or non-air quality environmental impacts relative to similar installations of a specific control option" must be documented for the public record before consideration of the next most stringent alternative can be considered.

In addition, MANE-VU recommends that EPA strengthen the justification for their proposed treatment of visibility improvements on a cumulative (as opposed to source-by-source) basis. We strongly agree with EPA that the proposed BART rule should require a cumulative air quality impacts analysis given the regional nature of the haze problem. EPA has successfully incorporated regional analyses into the regulatory framework for other regional problems. The recent resolution of several petitions under section 126 of the Clean Air Act and the Acid Rain Program are good examples of this. We encourage EPA to apply these same principles to the haze problem and bolster current regulatory language in the context of consideration of visibility improvement due to application of control technology at a specific source.

(IV)(D)(4)(b). How do I take into account a project's "remaining useful life" in calculating control costs?

"(The EPA recognizes that there may be situations where a source operator intends to shut down a source by a given date, but wishes to retain the flexibility to continue operating beyond the date in the event, for example, that market conditions change.) We request comment on how such flexibility could be provided in this regard while maintaining consistency with the statutory requirement to install BART within 5 years."

MANE-VU is concerned that if operators retain flexibility and decide to extend the life of their facilities after BART determinations have been made, then these facilities will continue to operate at a higher emission rate than if BART had been installed. We are unaware of any precedent for "federally enforceable restrictions preventing further operation" and fear that any provisions allowing for consideration of "remaining useful lifetime" in calculating control costs would reduce the effectiveness of the BART program. MANE-VU therefore recommends that no such provisions be made in the BART guidelines. If a facility subject to BART is in operation at the time of SIP submittal, it must have plans to install controls.

(IV)(D)(4)(f). How do I calculate incremental cost effectiveness?

"You should consider the incremental cost effectiveness in combination with the total cost effectiveness in order to justify elimination of a control option."

Reasonably cost effective controls that represent the "Best Available" level of control should not be rejected in favor of controls which may be more *cost* effective but less effective in absolute terms. Some consideration of absolute emissions reduction must also be considered. MANE-VU therefore recommends that consideration of incremental cost effectiveness should only be allowed when it does not result in reduced stringency of controls over those determined using absolute cost effectiveness alone.

(IV)(D)(5)(b). Selecting a "best" alternative

"Based on the cost models in the Controlling SO_2 Emissions report, it appears that, where there is no existing control technology in place, 90-95 percent control can generally be achieved at cost-effectiveness values that are in the hundreds of dollars per ton range of less. We are thus proposing a presumption that, for uncontrolled utility boilers, an SO_2-control level in the 90-95 range is generally achievable."

We endorse EPA's proposal to establish a presumed control efficiency for currently uncontrolled SO_2 utility boilers. A recent NESCAUM analysis (NESCAUM, 2000) indicates that flue gas desulfurization (FGD) or

"scrubber" technology is an extremely cost effective means of reducing SO_2 emission by over 95 percent on a routine basis currently. We therefore propose an alternative presumed control efficiency of 95 percent at a minimum for previously uncontrolled utility boilers. MANE-VU was dismayed to see changes in the language regarding presumed control efficiencies (essentially softening support) between the January draft of the proposed BART guidelines and those published in the Federal Register. As discussed in the NESCAUM report, regulation often leads to technological innovation and the presumption of FGD as BART may lead to even more advances in this technology and additional cost reductions.

In addition to the presumptive 95 percent control efficiency for SO_2, we encourage EPA to establish a presumed control efficiency of 90 percent, at a minimum, for NO_X emissions from uncontrolled utility boilers. An earlier NESCAUM report (NESCAUM, 1998) demonstrates that the combination of low-NO_X burner (LNB) technology and Selective Catalytic Reduction (SCR) controls can routinely reduce NO_X emissions by over 90 percent. The report further documents that installation of these controls can be highly cost-effective in most circumstances. MANE-VU believes that enough documentation exists to firmly establish a presumed control efficiencies for SO_2 and NO_X and that failure to establish presumptive levels of control will significantly weaken the BART program, reducing the ability for states and tribes to effectively address visibility impairment within their jurisdictions.

(VII)(C). What Criteria Must Be Met in Developing an Emissions Trading Program as an Alternative to BART?

Under the steps describing a "greater reasonable progress" demonstration, EPA has indicated that trading program budget emission levels "equivalent to or less than" those expected with the installation and operation of BART may achieve greater visibility improvement. MANE-VU suggests removing the phrase "equivalent to" as it is unlikely that greater reasonable progress can be achieved with only equivalent emissions reductions.

(VII)(C)(2). How Do I Calculate the Emissions Reductions That Would Be Achieved If BART Were Installed and Operated on These Sources?

"The EPA requests comment on an approach to the category-wide analysis of BART that would allow the States to evaluate different levels of BART control options (e.g., all measures less than $1000/ton vs. all measures less than $2000/ton vs. all measures less than $3000/ton) through an iterative process of assessing relative changes in cumulative visibility impairment."

MANE-VU recommends eliminating the category-wide approach to evaluation of visibility benefits. We do not feel that States can adequately evaluate different levels of BART control options given the non-linear relationship between emissions reductions and perceived visibility benefits when expressed in deciviews (NESCAUM, 2001b). Visibility benefits calculated in deciviews will minimize the range of visibility benefits derived from any of these control options, creating the incorrect impression that any level of control would result in roughly the same visibility benefits. BART represents the first step in a six-decade control program. We are, therefore, comparing visibility benefits of emissions reductions against the worst baseline conditions, and thus the most difficult conditions under which to perceive a difference.

If EPA chooses to allow such evaluations to move forward despite MANE-VU objections, they should be made on the basis of differences in atmospheric light extinction, or another metric that is linear with pollutant concentrations, rather than perceived visibility.

(VII)(C)(3). For a Cap and Trade Program, How Do I Demonstrate That My Emission Budget Results in Emission Levels that are Equivalent To or Less Than the Emissions Levels That Would Result If BART Were Installed and Operated?

Consistent with our comment on *(VII)(C)* of the proposed rule, we would encourage EPA to remove references to "equivalent" emissions reductions as satisfactory for achieving greater reasonable progress than source-by-source application of BART. References are found in the title of this section as well as under the steps for evaluating whether the program milestone for the year 2018 provides for a BART-equivalent or better emission inventory total.

(VII)(C)(4). How Do I Ensure That Trading Budgets Achieve "Greater Reasonable Progress?"

"The EPA recognizes that it is desirable to minimize administrative burdens for sources that may be subject to the provisions of several different emission trading programs."

We agree with EPA that it is desirable to minimize administrative burdens. We recommend that estimates of BART-eligible emissions reductions and emissions budgets be calculated for the end of the first BART compliance period (2013) taking into account any reductions which are required under other control programs by that time. The eligible emissions reductions for each pollutant subject to BART review (that is also regulated under existing allowance trading programs) would then be aggregated and allowances totaling greater levels of reduction should then be withheld from 2014 and all future emissions allocations.

Sincerely,

Christopher Recchia
Commissioner,
Vermont Department of Environmental Conservation
Chair,
Mid-Atlantic/Northeast Visibility Union

cc (without enclosures): John Seitz, U.S. EPA
Tim Smith, U.S. EPA

Enclosures: *Regional Haze and Visibility in the Northeast and Mid-Atlantic States, A Basis for Control of BART- Eligible Sources*

References:

NESCAUM, *Status Report on NOx: Control Technologies and Cost Effectiveness of Utility Boilers*, Northeast States for Coordinated Air Use Management, Boston, MA, September, 1998.

NESCAUM, *Environmental Regulation and Technology Innovation: Controlling Mercury Emissions from Coal-Fired Boilers*, Northeast States for Coordinated Air Use Management, Boston, MA, September, 2000.

NESCAUM, *Regional Haze and Visibility in the Northeast and Mid-Atlantic States*, Northeast States for Coordinated Air Use Management, Boston, MA, January, 2001a.

NESCAUM, *A Basis for Control of BART-Eligible Sources*, Northeast States for Coordinated Air Use Management, Boston, MA, July, 2001b.