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Arthur N. Marin, Executive Director

January 31, 2006

Stephen L. Johnson
U.S. Environmental Protection Agency
Air Docket
Mail Code 6102T
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Attention: Docket #OAR 2003-0062

Re: *Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards*

Dear Administrator Johnson:

The Northeast States for Coordinated Air Use Management (NESCAUM) offer the attached comments on the U.S. Environmental Protection Agency's (EPA's) proposal, published on November 1, 2005 in the Federal Register (70 FR 65984-66067), entitled *Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards*. NESCAUM is the regional association of air pollution control agencies representing Connecticut, Maine, Massachusetts New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

The National Ambient Air Quality Standards for fine particles (PM2.5) were promulgated in 1997. The NESCAUM states that are in nonattainment of those standards have been working steadily over the past several years to get their State Implementation Plans submitted to EPA by April 2008, as required under the Clean Air Act. We urge you to issue a final implementation rule as soon as possible.

If you or your staff has any questions regarding the issues raised in this letter, please contact Leah Weiss at the NESCAUM office at 617-259-2000.

Sincerely,

Arthur N. Marin
Executive Director

Attachments

Cc: NESCAUM Directors
Rich Damburg, U.S. EPA
Raj Rao, U.S. EPA

ATTACHMENT A
NESCAUM Comments on the U.S. Environmental Protection Agency's (EPA's) Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards

NESCAUM limits its comments on EPA's proposed rule as they apply to the current fine particle (PM2.5) National Ambient Air Quality Standards (NAAQS). Given that new PM2.5 NAAQS have been proposed, we expect EPA to propose new or revised implementation rules and provide opportunity for public review and comment at a later date.

1. Classification scheme: *EPA offers two implementation approaches for classifying nonattainment areas and assigning attainment dates and control strategy requirements. EPA's preferred approach is to have no classification scheme and no differentiation of requirements across areas. The other option is to have a two-tiered classification scheme based on design values that would establish "serious" and "moderate" nonattainment areas. Areas with higher PM2.5 design values would qualify for an attainment date extension beyond April 2010 to no later than April 2015. Those areas would be required to include certain mandatory measures in their State Implementation Plans (SIPs). Moderate areas could request a bump-up to serious in order to receive more time to attain, but would have to adopt mandatory measures outlined for serious areas. (70 FR 66000-66001).*

NESCAUM generally supports a tiered classification approach based on design values, as it provides a distinction between areas with less and more severe PM2.5 pollution problems, and allows more time for areas with more severe pollution problems to attain. It also provides an incentive (i.e., avoidance of bump-up) to attain as expeditiously as practicable. We also support EPA requiring a set of mandatory measures -- including additional mandatory requirements for serious areas -- that EPA can modify as the science and understanding of PM2.5 abatement progresses. Mandatory measures for serious areas could include those that focus on reducing direct emissions and more stringent offset requirements. EPA should allow moderate areas to voluntarily reclassify as serious if they need more time and serious areas to voluntarily reclassify as moderate if they need less time to attain. In the event that EPA chooses not to implement a classification scheme, these measures should become mandatory requirements for any extension. And, to the extent practical, these measures should be completed and submitted as part of an extension request.

Given the current form and level of the PM2.5 standards, the current design values, and current analyses of anticipated controls, most if not all PM2.5 nonattainment areas in the Northeast corridor are likely to attain the current PM2.5 standard within the same timeframe, and in a timeframe consistent with the Subpart 1 deadline of no later than five years from designations. In the future, if EPA was to implement more stringent PM2.5 standards, a classification scheme would be more critical than at this point in time. We also urge EPA to consider adopting an "area of influence/area of violation" (AOI/AOV) approach to classifications in order to promote timely attainment.

Should EPA adopt its preferred approach (no classification), we urge EPA to provide incentives for areas to attain the standards within five years by requiring additional mandatory measures and more stringent offset requirements for areas that will need attainment date extensions.

2. Precursor emissions: *EPA proposes that it treat the various known precursors for PM2.5 differently and seeks comments on several options. EPA's preferred approach to regulating precursor emissions is* *that sulfur dioxide (SO_2) and nitrogen oxides (NO_x) would be considered "default" precursors that would require all the components of Prevention of Significant Deterioration (PSD) and nonattainment programs (e.g., Best Available Control Technology (BACT), Lowest Achievable Emissions Reductions (LAER), offsets, attainment demonstration and reasonable further progress requirements), unless a demonstration can be made by a State to the EPA Administrator on a case-by-case that NO_x should be exempted. EPA proposes not to include volatile organic compounds (VOC) and ammonia (NH_3) as precursors except if States elect to do so by demonstrating to the Administrator that controls will help attain the NAAQS in an area. However, VOC emissions of high molecular weight are proposed to be controlled as direct PM2.5 emissions by requiring the inclusion of condensable emissions in the calculations of applicability. NH_3 as a precursor is not well understood and could lead to increased acidity levels of particulates if controlled improperly. (70 FR 65999-66000 and 70 FR 66035-66036). In addition, EPA seeks comment on whether there are circumstances where a pollutant should not be treated as a precursor for New Source Review (NSR) purposes, notwithstanding that the science supports that it is a precursor and it is treated as such in other programs. (70 FR 66035-66036). Where science supports a finding that a specific pollutant is a precursor, that pollutant should be treated as a precursor for all programs, including the New Source Review program, especially if that pollutant is already treated as a precursor in other programs.*

NESCAUM accepts EPA's preferred option with the understanding that EPA shall continue to analyze the role of ammonia and carbon in PM-fine formation and make adjustments to its implementation policies and rule as the science warrants. Our experience with the role of NO_x emissions in ozone formation -- and the now outdated assumption that it plays a secondary role in reducing ozone levels -- should be held up as an example as to why EPA must continue its research into particulate matter (PM) formation and reductions and should develop standardized test methods for ammonia as soon as possible. We urge EPA to not allow State-specific exemptions for NO_x. EPA's findings on significant nitrate contributions to PM2.5 levels, especially in the Northeast, do not conclusively identify the relative significance of upwind States' emission contributions to those levels. If a State-specific demonstration is allowed by EPA for NO_x emissions, then it should be under strict requirements that demonstrate the regional interaction and contribution of the specific state's emissions of <u>all</u> precursors with all pertinent emissions from other states to PM2.5 levels due to the complex chemical and physical interplay of these pollutants. Furthermore, in order to ensure consistency across the country, we urge EPA to develop criteria on which all states must base their technical determinations for not controlling presumed precursors. Such criteria must include how assessments should be made of impacts on downwind as well as local nonattainment areas.

We agree with EPA that it is premature at this time to treat certain VOC and NH_3 emissions as national "default" precursors under the strict control requirements of the NSR program, as long as portions of the condensable VOC are required to be accounted for in the determination of direct PM2.5 emissions and further research is conducted to better understand the limitations of the role of NH_3 in different aspects of PM2.5 formation. We urge EPA to continue research on the role of NH_3 in PM2.5 formation since NH_3 has been demonstrated by current research to be a precursor to PM2.5 concentrations. Part of this research should include developing more accurate NH_3 emissions inventories for stationary and area sources. We further recommend that, for the NSR program, EPA recognize the role NH_3 plays in PM2.5 formation and develop a policy to require the minimization and mitigation of known emissions of NH_3 from certain source categories. Any future decision that EPA makes on precursor emissions must be based on science and subject to public review and comment.

The ability of States to achieve the PM2.5 standards would be greatly hampered if precursors to PM2.5 formation are not strictly controlled by requirements of a NSR regulation. This is especially true for the Northeast states, which are downwind of major emitters of PM2.5 precursors, as has been demonstrated for ozone formation, and are affected by long range transport of PM2.5 from precursor formation. EPA indicates in its proposal that precursor formation is a significant, if not the dominant, fraction of observed PM2.5 levels in many parts of the northeast and the country. The ability to limit and mitigate these precursor emissions from major sources through the application of controls such as BACT, LAER, and emission offsets is a fundamental requirement of the Clean Air Act and has been successfully and practically used for ozone precursors. We see no reason to treat the precursors to PM2.5 formation any differently. The anticipated regional reductions from CAIR will not be adequate for addressing source-specific emissions, since cap-and-trade programs do not guarantee the application of controls in the manner that the NSR program would. The NSR program would ensure reductions where and when they are needed, whereas cap-and-trade programs achieve reductions over a broad geographic area.

3. Attainment Demonstration Modeling Requirements and the IPM Model: *EPA proposes that, for SIPs, states "use existing projections of the geographic distribution and magnitude of early emissions reductions that are expected to be achieved by 2009 using existing information from the IPM emissions projection model." EPA encourages states to "use existing analyses to the extent possible to project interim air quality improvements from regional emissions reduction strategies" (70 FR 66007).*

NESCAUM has concerns about the Electric Generating Unit (EGU) inventory and the IPM modeling inputs used by EPA and therefore questions the appropriateness of EPA's proposal in this regard. The Northeast states have upgraded the IPM inventory database for the 2002 base year, and in the process have found significant differences between that inventory and the inventory used by EPA for its IPM modeling. In addition, EPA's IPM input assumptions for current and future natural gas prices are outdated and significantly lower than estimates used by the Northeast states for IPM sensitivity analyses. For example, the substantially lower values for actual and projected natural gas prices that EPA used for its IPM modeling were low enough to significantly impact the accuracy of EPA's 2009 projections and other IPM modeling outputs. The IPM model should be run with the best inventories and the most accurate set of assumptions.

Moreover, NESCAUM questions the accuracy of employing the IPM model on a national rather than regional scale when using the model in the context of SIP planning. The model will perform differently, yielding different results, depending on the geographic scale used in the modeling exercise. For example, not only will national scale IPM modeling results differ from regional scale IPM modeling results, but the results will also vary depending on the number of regions modeled and manner in which these regions are defined. EPA should not and cannot assume that use of existing IPM modeling on a national scale with fewer regions rather than a regional scale with additional regions will best serve the needs of SIP-quality analyses.

In addition, the IPM model that EPA is using is a proprietary tool that the states would like to be able to use without the associated high costs of doing so. EPA should take steps towards using a non-proprietary product. Furthermore, we urge EPA to provide technical and financial assistance so that states can improve the way IPM and SIP models (e.g., CALGRID and CMAQ) are used in the SIP context.

While NESCAUM supports EPA's suggestion that states use existing modeling and collaborate with other states and regional organizations to expedite modeling efforts (70 FR 66009), states must use and apply models and model inputs that comport with EPA's modeling guidance and are of SIP quality or equivalent.

4. Reasonable Further Progress (RFP) Requirements: NESCAUM supports EPA's rationale that reductions in emissions to meet the PM2.5 standards should not only occur in the last two years prior to attainment, but should occur through an ongoing series of control measures providing steady progress (70 FR 66011). Further, under the current PM2.5 standards, we agree with EPA that, if states can show attainment by 2010 through SIP-quality modeling, a demonstration, and with submitted regulations, then the RFP requirement should be considered met (70 FR 66011). We also agree with EPA's proposal (70 FR 66011) that areas that cannot attain the standards within five years must submit an RFP plan in addition to the area's attainment plan and rules. For these areas, RFP should consist of specified milestones or percentage reduction requirements.

In the future, we expect that more will be known about precursors and the standards will be set at levels more protective of public health. At that time, EPA should consider more specific RFP requirements and differentiated deadlines to ensure that reasonable progress toward attainment occurs and can be tracked. In addition, while RFP is an important component of SIPs, we recognize that issues arise in the specific case where an area is overwhelmed by transported pollution yet still obligated to make RFP reductions. We expect EPA to assess this in the future and consider regulatory constructs that include the area of influence/area of violation approach to better address the problem.

EPA proposes that emissions reductions are creditable towards RFP as follows:

1. *for direct $PM_{2.5}$ emissions – in the nonattainment areas only*
2. *for NO_x and SO_2 – in the nonattainment area and within 200 kilometers of the area, but the State must submit "appropriate documentation" that the sources affect air quality in the nonattainment area*
3. *for VOC - in nonattainment areas and up to 100 kilometers; however, if VOC is found to be a significant contributor to the area's nonattainment problem, then RFP credit will be given for VOC reductions only in the nonattainment area.*
4. *for ammonia – no proposal*

While NESCAUM generally agrees with the approach, we are confused by the proposal for VOC. Our understanding of this proposal is that, if a state determines that VOC is a PM2.5 precursor, it will not be able to take credit for any emission reductions outside of the nonattainment area. We would expect that EPA would want to allow states to get creditable VOC reductions from areas in and around the nonattainment areas similar to NOx emission reductions. We would like clarification on this portion proposal and its intent.

As the science and understanding of PM2.5 formation increases, EPA must revisit the 200 kilometer parameter and develop a possible proposal for ammonia. In addition, EPA must clarify whether or not credit may be taken for measures in another state, and adequately address enforceability requirements if this is the case.

5. Reasonably Available Control Technology (RACT) Reasonably Available Control Measures (RACM):

General requirements. *EPA offers three options and sub-options for implementing RACT. The first option requires each state to conduct a RACT analysis and requires RACT for all affected stationary sources in the nonattainment area. Proposed sub-options to exempt smaller sources include: (1) Requiring RACT for all stationary sources in the nonattainment area that have the potential to emit at least 100 tons per year of direct PM2.5 or any individual precursor to PM2.5, (2) Requiring RACT for all stationary sources in the nonattainment area that have the potential to emit at least 50 tons per year of direct PM2.5 or any individual precursor to PM2.5, and (3) Requiring a scaled RACT threshold based on the severity of nonattainment. Most areas would be required to implement RACT for all stationary sources in the area with a potential to emit at least 100 tons per year, but areas with a more serious PM problem would have a 50 ton per year threshold.*

The second option requires each state to conduct a RACT analysis and require RACT on stationary sources. However, the state may decline to impose controls that would not otherwise be necessary to meet RFP requirements or to attain the PM2.5 NAAQS as expeditiously as practicable. The test to determine if a state may decline to impose controls is whether or not adoption of a measure would advance the attainment date by at least a year. The measures would be judged as to whether they collectively contribute to advancing the attainment date. No available RACT or RACM could be declined unless the state makes a demonstration that no combination of declined RACTs and RACMs would advance the date of attainment by one year. The RACT analysis may be conducted on a source category basis, rather than a source-specific basis.

EPA's preferred option requires each state to conduct a RACT analysis, but if the area is projected to attain by 2010, the state could decline to impose controls that would not otherwise be necessary to meet RFP requirements or to attain the PM2.5 NAAQS as expeditiously as practicable. If the area is projected to attain after 2010, then the state must require RACT on all affected stationary sources. The sub-options identified under options 1 and 2 would apply, depending on whether the area under consideration is projected to attain by 2010 or not.

NESCAUM supports option 1. Section 172(c)(1) of the Clean Air Act requires that SIPs provide for implementation all RACM as expeditiously as practicable, "including such reductions in emissions from existing sources in the area as may be obtained through the adoption, *at a minimum* of [RACT]" (emphasis added). Options 2 and 3 appear to be legally questionable. It is difficult to defend the actions of conducting a RACT analysis and identifying RACT but then not imposing RACT. It seems imprudent public health policy to not control large sources of pollution in nonattainment areas if technologically and economically feasible controls for those sources have been identified. It is also difficult to know what would constitute a satisfactory demonstration that RACT would not advance attainment by a year.

NESCAUM disagrees with EPA's approach to setting identical RACT thresholds for direct PM2.5 and precursors. We urge EPA to set lower thresholds for direct PM2.5 emissions at 25-50 tons per year. We further urge EPA to set more stringent thresholds for higher classifications or for areas that need longer than five years to attain the standards, e.g., 10-15 tons per year for direct PM2.5 and 25-50 tons per year for precursors.

EPA further requests comment regarding whether new RACT determinations should be required for all existing determinations that are older than a specific time and what supporting information a state should be required to submit as part of its certification to demonstrate that a previous RACT determination meets the PM2.5 RACT requirement.

NESCAUM supports requiring new RACT determinations. RACT must be updated to reflect new technologies and current information on availability and costs. EPA should require new RACT determinations for any current RACT determinations that are more than five years old. In addition, EPA must review and update all of its RACT Alternative Control Technique (ACT) documents, as they have not been updated for over a decade. The emission limits contained in these documents reflect the use of outdated air pollution control technologies as well as the use of outdated materials and manufacturing processes.

CAIR, RACT, and electric generating units (EGUs). *EPA proposes to determine that "in states that fulfill their CAIR emission reductions entirely through emission reductions from EGUs, CAIR would satisfy SO_2 RACT requirements for EGU sources in eastern $PM_{2.5}$ nonattainment areas covered by CAIR. EPA is proposing a similar finding for NO_x RACT for EGUs, subject to a requirement that existing SCRs in those nonattainment areas be operated year-round beginning in 2009. The EPA believes that the SIP provisions for those sources meet the ozone NO_x RACT requirement." (70 FR 66024)* (emphasis added).

NESCAUM strongly disagrees with EPA's proposal to allow EGUs complying with the CAIR to have a blanket exemption from RACT, especially since EPA has indicated that CAIR is designed to address transport and not attainment. RACT, as the acronym implies, is essentially a technology-based program. RACT is expected to evolve over time as more innovative control technologies are developed at lower control costs. Simply put, if a technology is reasonably available, it must be put on the subject sources. EPA's proposal provides an incentive for such technologies to be removed and replaced with the purchase of allowances. Purchase of an allowance does not meet RACT requirements. In addition, by concluding that CAIR along with its cap-and-trade program satisfies the RACT requirements under the Clean Air Act, there is no longer any requirement for an EGU that is located in a nonattainment area to reduce its emissions of pollution, as the EGU could buy allowances to meet its CAIR requirements. This could significantly interfere with the ability of states to meet the PM2.5 NAAQS. EPA should adopt the Ozone Transport Commission's (OTC's) approach to cap-and-trade programs. When the OTC developed its NO_x Budget Program (which was the basis for EPA's NO_x SIP call and subsequently CAIR), it assumed that RACT was applied *first.* Thus the cap-and-trade program operated in an environment that assumed RACT was in force, not in lieu of RACT.

6. Major Source Thresholds: *EPA proposes that major source thresholds for the purposes of PM2.5 nonattainment NSR will be 100 tons/year or more in direct PM2.5 emissions (70 FR 66037). Since EPA is not proposing a classification system, it believes that its ability to define lower thresholds is thus limited, and that States may impose other requirements through their SIP and minor source programs.*

We disagree with EPA's proposal. The threshold for direct PM2.5 emissions must be revised downward, in the range of 25 to 50 tons/year. EPA asserts that "the more current inventory data shows that the number of sources that would be covered as major sources by a lower major source threshold would not increase substantially unless the threshold were lowered to 20 TPY or below" (70 FR 66037), and uses that as prime justification for its proposal. Data from the NESCAUM region indicate that a lowered major threshold level in the 25-50 tons/year range would significantly increase (i.e., essentially double) the number of sources subject to major NSR review, and that a source of 25-99 tons/year of PM2.5 direct emissions has the potential to cause high ambient PM2.5 concentrations.

The potential of 25 to 99 ton/year direct PM2.5 sources to cause high ambient PM2.5 impacts provides two important justifications for lowering the definition of a major source. First, studies document adverse health effects at relatively low ambient concentrations of PM2.5. Section III.M.5.b of EPA's proposal (70 FR 66038) describes a modeling analysis conducted by EPA to compare PM2.5 stack emissions to the resulting ambient impact. Based on the results of this modeling (15 ton/yr of PM10 emissions results in up to 0.8 ug/m^3 annual PM10 concentration), one can conclude that a 99 ton per year source of direct PM2.5 could have up to a 5.3 ug/m^3 annual PM2.5 impact. This represents 35 percent of the current PM2.5 annual NAAQS of 15 ug/m^3. A similar problem is found for short-term PM2.5 impacts, when scaling the results of the 24-hour modeling presented in Section III.M.5.b (70 FR 66038). A 99 ton per year PM2.5 source could have up to a 39.6 ug/m^3 24-hour PM2.5 impact. This concentration is approximately 61 percent of the current PM2.5 24-hour NAAQS of 65 ug/m^3. The issue becomes even more problematic if the standards are lowered in the future. Under the recently proposed PM2.5 24-hour NAAQS of 35 ug/m^3, emissions from a 99 ton/year PM2.5 source could violate the 24-hour NAAQS.

This conclusion is supported by data from the NESCAUM region. For example, air permit modeling reviewed by the New Jersey Department of Environmental Protection confirms that smaller direct PM2.5 emission sources (i.e., less than 99 tons/year) can produce high local concentrations. A recent application proposing a 31 ton/year of PM2.5/PM10 emissions predicted maximum annual ambient concentrations of 3.5 ug/m3 and maximum 24-hour concentrations of 31.3 ug/m3.

Second, reasonable further progress may be significantly impeded in the absence of major NSR review for these sources. EPA's suggestion to address this issue with State minor NSR programs will not be sufficient due to interstate transport and the existence of interstate PM2.5 nonattainment areas. A lower major source threshold for PM2.5 sources located in designated nonattainment areas should be applied uniformly throughout the entire nonattainment area; this would not be possible when minor NSR programs are defined on a state-by-state basis.

7. Significant emissions for direct PM2.5 and precursors for major modifications: *EPA proposes to retain the current de minimis emission rates for* SO_2*,* NO_x*, and VOC. It further proposes a 10 ton/year value for direct PM2.5 emissions based on modeling to achieve a "significant" increase in impacts, backed up by NAAQS scaling. No value is proposed for* NH_3*. EPA requests comments on the range from 5 to 15 tons/year for direct emissions and the use of 10 tons/year for precursors. (70 FR 66037-66039)*

NESCAUM supports EPA's preferred option of defining a significant emissions rate of direct PM2.5 at 10 tons/year. This value, derived using the same approach for setting the significant emissions rate for PM10 and TSP, seems reasonable. We generally support EPA's preferred option to maintain the PM2.5 precursor significant emissions rates at 40 tons/year for NO_x, SO_2, and VOC. A higher significant emission rate for the PM2.5 precursor emissions than for direct PM2.5 emissions seems appropriate, given the atmospheric chemistry necessary for the formation of PM2.5 from the precursors. However, for nonattainment areas, we recommend that EPA allow states to define lower precursor emission rates in their SIP demonstration submissions similar to what is allowed for ozone precursors.

8. Condensable emissions: *EPA proposes to clarify that condensable emissions must be accounted in the determination of PM2.5 emissions, as has been done for PM10. EPA proposes new test methods for stack testing to assure proper determination of condensables. (70 FR 66039 and 70 FR 66049)*

We strongly support EPA's proposal to clarify, through regulation, that condensable emissions must be included when determining PM2.5 NSR applicability and for modeled demonstrations for attainment and PSD increments. NESCAUM supports requirements to include all condensable emissions, including primary sulfates, in these determinations, and urges EPA to finalize and recommend the stationary source test method that is discussed in Section P of the proposed rule. (70 FR 66049-66053)

9. PSD for PM2.5: *In the proposal, EPA indicates that it is working on a separate track to develop a PSD approach that might include PM2.5 increments. EPA indicates that it has placed this particular action on a separate administrative track because it needs additional time to develop the proposal. In the interim, EPA states that States may use the PM10 increments as a surrogate for PM2.5 (i.e., the October 24, 1997 memo from John S. Seitz, entitled "Interim Implementation of New Source Review Requirements for PM2.5" (70 FR 66040 and 70 FR 66043).*

We are disappointed that PSD increments were not part of the proposal, especially since delays in addressing PM2.5 PSD can lead to further degradation of air quality. We expect EPA to issue a draft that will be subject to public review and comment this year. We urge EPA to propose PM2.5-specific numerical increments using the procedures and methodology it relied upon for the developing the PM10 PSD increments from the TSP increments (58 FR 31622-31638).

Section 163(a) of the CAA states that, in the case of sulfur oxide and particulate, PSD increments should be set that specify the maximum allowable increase above baseline concentrations while, Section 166 specifically refers to PSD for the other pollutants: hydrocarbons, carbon monoxide, photochemical oxidants, and nitrogen oxides. We believe EPA has the legal authority and obligation to act on the congressional intent requiring that any indicator of particulate matter per Section 163(a) be adopted, as was done when the PM10 increments were added to Section 166(f) in the 1990 amendments of the CAA. Thus, we do not believe a revision in the Clean Air Act to specifically list PM2.5 as a PM indicator is necessary for PSD increment development purposes.

PM2.5 is considered a subset of PM10. EPA recognized the similarities of the two pollutants in its April 5, 2005 memo from Stephen D. Page entitled "Implementation of New Source Review Requirements in PM2.5 Nonattainment Areas," which required States to use their current PM10 nonattainment major NSR program as a surrogate to address PM2.5 major source nonattainment NSR. We recommend that EPA propose PM2.5-specific increments, since the current PM10 PSD increments are not adequate to prevent significant deterioration of PM2.5 air quality. For example, the PM10 Class II annual (17 ug/m^3) and 24-hour (30 ug/m^3) increments approach or exceed the PM2.5 NAAQS.

PM2.5 increments should be developed using either the "equivalent to statutory increment" approach EPA adopted or the "percentage of NAAQS" supported by most commenters in the 1993 final PM10 increments action. These increments can be used, at a minimum, to determine the adequacy of direct PM2.5 emissions and associated controls from new or modified sources in minimizing PM2.5 specific air quality degradation. We would strongly oppose any attempt by EPA to rely on programs it has proposed for the future reduction in existing source emissions, such as CAIR, to achieve the necessary permit-based program specified in the CAA at Section 165. EPA recently proposed such an approach for the NO_2 increment and received numerous adverse public comments. We would support EPA's attempt to address PSD concerns with regional programs only for PM2.5 precursors such as NO_2 and SO_2, as these precursors already have increments to address pollutant-specific air quality issues in the vicinity of the source in the permitting process. We do not see any obstacles that limit EPA's ability to readily adopt PM2.5 specific increments for PSD purposes.

10. Air quality analysis requirements for PSD: *EPA proposes to require demonstrating NAAQS compliance, but only at monitor locations and other receptors that are appropriate for comparison of impacts to NAAQS (70 FR 66040).*

NESCAUM is concerned with EPA's proposal, as the language implies that NAAQS compliance need only be demonstrated at PM2.5 monitor locations and similar appropriate locations. Section 165(a)(3) of the Clean Air Act makes no such distinction, requiring that NAAQS compliance be demonstrated in any air quality control region and that PSD increment compliance be demonstrated in the attainment area of the source, including distant Class I areas (see Sections 163 and 165). Demonstrating modeled compliance at all applicable ambient receptor locations of the source under review is a long-standing EPA and state requirement in permit application reviews. The analysis includes a cumulative source analysis and the addition of representative or regional background levels in NAAQS compliance demonstrations. We hope EPA's intent was not to limit such analysis to a handful of monitor locations in the country, as doing so would not assure compliance with the NAAQS.

11. Significant Impact Levels (SILs): *EPA requests comment on how to establish SILs for direct emissions of PM2.5 and for precursors, to be administered on a separate track (70 FR 66040).*

NESCAUM urges EPA to develop PM2.5 SILs for at least the direct PM2.5 emissions in the same time frame as the PSD increments. SIL values are important in implementing attainment and nonattainment NSR requirements and assist regulatory agencies and applicants in streamlining the permit review process. EPA indicates that the Class I SILs were proposed in the July 23, 1996 FR for other criteria pollutants. NESCAUM recommends that EPA finalize these SILs along with the PM2.5 SILs. The Class I levels have been used for many years in the NESCAUM region as well as across the country, and have been accepted by Federal Land Managers as appropriate levels for determining the need for cumulative increment modeling.

For Class II areas, one approach that can be used to develop SILs for direct PM2.5 emission impacts is to use the percentage of NAAQS approach as was relied upon by EPA in previous determinations. The proposed rule relies on a 4% of the annual NAAQS to determine the significant emission rates (70 FR 66038) and the same approach can be used to define significant concentration values. However, NESCAUM recommends that EPA use the current ratios between the PM10 SIL and the PM10 NAAQS and ratio the corresponding PM2.5 NAAQS to establish the 24 hour and annual PM2.5 SIL for direct PM2.5 emissions. These SILs are calculated to be 0.3 ug/m^3 and 2 ug/m^3 for the annual and 24-hour PM2.5 levels, respectively.

For Class I areas, EPA could determine the direct PM2.5 emission impact SILs using the same approach it calculated the PM10 SILs in its 1996 proposal (i.e., 4% of the PSD increments, once they are determined). An alternative approach we recommend is to scale the PM10 Class I SILs noted in the proposed rule with the respective NAAQS. This results in values of 0.13 and 0.06 ug/m^3 for the 24-hour and annual levels, respectively.

We agree with EPA that developing PM2.5 SILs for precursor emissions is more problematic due to the limitations of defining proper modeling schemes in single source permitting actions. However, for SO_2 and NO_x, there are established SILs that, although developed for the direct impact determinations associated with these pollutants, could serve as SILs for the purposes of determining the need for cumulative impacts as well as whether a source has a significant impact on nonattainment areas. Thus, we do not see a need for a protracted effort by EPA in developing SILs or the PSD increments.

12. PSD pre-construction requirements: *EPA proposes five options, as follows:*

1. *Require monitoring, but allow case-by-case waivers if adequate PM2.5 monitoring data exists. (EPA's preferred option)*
2. *Exempt all sources and just use existing PM2.5 monitoring data.*
3. *Develop and use Significant Monitoring Concentrations (SMC) for PM2.5 to exempt sources. EPA notes that this can be used with other options.*
4. *Use the combination of PM10 and PM2.5 data to make inferences.*
5. *Exempt preconstruction monitoring since SMC specific to PM2.5 are not currently in the regulation. (70 FR 66040-66042)*

While EPA indicates in the proposal that it is retaining its current case-by-case approach in its preferred option, that is not entirely correct. We agree with EPA that retaining a case-by-case determination of waiving requirements of pre-construction monitoring should be the preferred approach. However, we note that current regulations rely on the use of the SMC for such waivers. Relying only on existing PM2.5 data has limitations under options 1 and 2. Current PM2.5 monitor locations are not only limited in spatial representativeness, but were also required to be specifically located away from single source impact areas in order to represent regional exposure levels. Thus, it is inappropriate to use them in a manner representative of specific sources. Furthermore, EPA has proposed dramatic cuts in States' monitoring networks and has shifted emphasis from PM2.5 to PM coarse monitors. NESCAUM recommends that EPA develop a 24-hour PM2.5 SMC similar to the PM10 value, and use that in combination with existing PM2.5 data as a modified option 1.

We agree with EPA that option 4 is not a viable approach due to the convoluted nature of attempting to infer PM10 to PM2.5 monitoring data comparisons for source-specific applications. We oppose option 5, and consider it inappropriate and legally questionable.

13. Offset requirements for nonattainment areas: *EPA proposes options on offset ratios for direct emissions, precursors, and inter-precursor trading as follows:*

- *a. At least a 1:1 offset ratio for direct emissions.*
- *b. If precursors are included in NSR as regulated pollutants, then offsets will be required. If offsets are required, then at least a 1:1 offsets for precursors is proposed and the reductions have to be creditable and be of the same precursor. EPA seeks comments on whether this ratio should apply to state-specific precursors as well.*
- *c. Allow inter-precursor trading, trading of direct PM2.5 for precursors and trading of precursors for direct PM2.5. This appears to be proposed on a state-specific basis, where*

> *States can demonstrate that trading is beneficial in reducing overall concentrations of PM2.5. EPA indicates that such trading can be allowed under either (i) a priori state-wide modeled demonstration, presumably at the time of SIP submission, or (ii) in the case specific NSR permitting process. EPA also indicates possibly allowing such trading for netting purposes. (70 FR 66042-66043)*

NESCAUM agrees with EPA that the ratio for pollutant- and precursor-specific emission offsets for direct emissions of PM2.5 should be at least 1:1, and that the offsets have to be real, creditable and enforceable. This ratio should apply to any other precursors that are identified by SIPs, unless a larger offsetting emission rate is determined necessary to achieve NAAQS.

NESCAUM opposes allowing inter-precursor trading or trading of precursors with direct PM2.5 emissions using either a pre-approved SIP demonstration modeling analysis or a permit- specific analysis. We also oppose inter-precursor trading in either attainment or nonattainment NSR netting analysis. Any increase in direct PM2.5 emissions or precursors must be offset by a corresponding decrease in the same PM2.5 direct or precursor emissions. Perhaps only in extremely limited cases should inter-pollutant or inter-precursor trading for the purposes of PM2.5 emission offsets be allowed, i.e., when PM2.5 precursor emission increases at a proposed source will be offset by direct PM2.5 emission decreases. EPA indicates in the proposal that inter-precursor trading would be difficult to administer and would not assure that ambient levels of PM2.5 would decrease in the affected areas. Any assessment by a State to demonstrate decreases from inter-precursor trading would have to consider not only the emissions in-State, but in all nearby States that contribute to the formation of PM2.5 and as affected by that State’s emissions. The situation would be even more onerous on an individual source basis.

EPA’s nonattainment offset requirements are in Appendix S to 40 CFR Part 51(Emissions Offset Interpretative Rule), Sections IV.A (Conditions 3 and 4) and IV.D. Direct PM2.5 emission offsets should comply with these regulations through a site-specific net air quality benefit, which in most cases requires a modeling analysis. For PM2.5 precursors, offsets should meet the requirements that currently apply to the ozone precursor emissions of NO_x and VOC. These requirements would be met by default by obtaining precursor offsets from a source located in the same nonattainment area as the proposed new source or from an area of equal or higher classification where it is demonstrated that sources from the latter area contribute to nonattainment in the proposed source area. Where PM2.5 precursor emissions are offset by an equal amount of direct PM2.5 emissions, a net air quality benefit can be assured at least in the near-field of the proposed source, otherwise, a net air quality benefit should be confirmed through modeling.

In the future, inter-precursor trading of emission offsets may be possible when our ability to model secondary sulfate, nitrate and ammonia compound formation improves and is less resource intensive. At that time, EPA should consider developing guidance on how analyses should be conducted and under what conditions a positive net air quality benefit is achieved.

In the table at 70 FR 66034 that summarizes the major NSR program elements and EPA’s proposal to address PM2.5 under “Inter-precursor Offsetting,” EPA characterizes its proposal to allow inter-precursor offsetting with a modeling demonstration as no change to current policy. We are not aware of this current policy or guidance. Our understanding is that inter-precursor offsetting of VOC and NO_x emissions to meet the ozone nonattainment NSR requirements is not allowed (see 40 CFR Part 51 Appendix S, Section IV.A).

More detailed information supporting our position on offset requirements for nonattainment areas inter-precursor trading or trading of precursors is attached (see Attachment B)

14. Transition during the SIP development period: *EPA reaffirms that prior to the final rule, the PM10 surrogate approach can be used for PSD and nonattainment areas per the Steven Page memo of April 5, 2005. After the rule is finalized, States with delegated programs are expected to immediately implement it, while States developing SIPs (and concurrently, an NSR program) over a three-year period will have to comply with the rule prior to the SIP submissions or EPA will implement it during this transition period. (70 FR 66043-66046)*

EPA proposes three options for implementing the PSD requirements as follows:

1. *States continue to operate under the 1997 Seitz memo (PM10 as surrogate), but assure that sources do not cause or contribute to PM2.5 NAAQS violations and include condensables in applicability and controls. (EPA's preferred option)*
2. *EPA updates the 1997 Seitz memo to include the proposed provisions of the rule or change Appendix S to include 40 CFR 52.21 requirements.*
3. *States request delegation of the final rule. (70 FR: 66043-66044)*

NESCAUM agrees with EPA that it has the legal authority and the obligation to assure that, during the SIP development process, the PM2.5 NSR program is applied equitably (i.e., in those States that have delegated programs and would apply them immediately as well as in the remaining States that will have to submit PM2.5 SIPs). Since the promulgation of the PM2.5 NAAQS in 1997, PM2.5-specific NSR requirements have not been forthcoming from EPA. We realize that this has been due, in part, to court challenges to the standards. We do not agree with EPA that the PM10 program is an appropriate surrogate for PM2.5, nor do we agree that such an approach is protective of the PM2.5 standards and air quality deterioration. EPA must finalize PM2.5-specific NSR provisions as expeditiously as possible. In states that lack the legal authority to do so without a protracted rule revision, EPA must implement the PM2.5 NSR program as soon as possible.

NESCAUM opposes EPA's preferred option because it does not address the problem, cannot be implemented in some states, and does not incorporate precursor emissions and condensables. We see no basis to continue an outdated policy (i.e., the 1997 Seitz memo) that essentially neglects the requirements of a PM2.5-specific NSR program. The PM2.5 NSR program must contain a specific set of requirements that not only assures attainment of the PM2.5 NAAQS, but also addresses mandatory PSD increments, SILs for determination of significant impacts, and PM2.5-specific BACT guidance. NESCAUM supports the concept of revising rules to address the inadequacies so that there is no longer any reason to rely upon outdated and inappropriate guidance. We urge EPA to expeditiously revise pertinent regulations as soon as possible to allow states ready means to implement the PM2.5 NSR program. In several states, reference to an EPA policy does not provide sufficient basis for implementing a major program such as the PM2.5 NSR, thus, we do not support EPA merely revising and reissuing guidance. We are unclear as to why EPA proposes to amend Appendix S (and 40 CFR 52.24), the Emission Offset Interpretative Rule, for nonattainment areas to carry out the requirements of PSD program in 40 CFR 52.21 or 51.166. EPA has failed to provide reasonably specificity regarding the proposed regulatory changes to allow meaningful public input on this option. However, recent revisions by EPA to the scope of Appendix S raise great concern that reliance on this section and 40 CFR 52.24 will cover sufficient new and modified major sources of PM2.5 to assure prevention of significant deterioration of air quality values related to the pollutant. See NESCAUM, An Analysis of EPA's Changes to the Routine Maintenance, Repair and Replacement Exclusion of the New Source Review Program, June 2004 (available at: http://bronze.nescaum.org/resources/reports/rpt040618nsr.pdf). EPA must make the necessary amendments to the pertinent federal regulations so that States can adopt them for their own programs (or, in the event of a state refusal or inability to carry out the program in an expeditious manner, will allow EPA to implement the PM2.5 NSR program).

We do not support option 3, which allows States to request delegation of 40 CFR 52.21, as it is impractical. A vast majority of states already have their own PSD programs and plan to modify them for the PM2.5 NSR requirements. The remaining states have either retained a form of the PSD program or have returned the program to EPA (including two of the NESCAUM states). We do not foresee a situation where option 3 would be necessary or appropriate as an overarching program design.

With respect to nonattainment areas, EPA proposes to modify Appendix S to allow the majority of states to implement the nonattainment provisions or else EPA will be required to do so in states where modifications to their NSR programs are necessary and protracted (70 FR 66045-66046).

We urge EPA to make the necessary regulatory changes to allow either States or EPA the ability to implement immediately the PM2.5 NSR program upon finalization of the rule. States that must revise their regulations and SIPs prior to implementing the program should not be given any deference in either doing so expeditiously or having EPA implement the program in those states.

15. NSR applicability to precursors during the transition period: *EPA seeks comments as to whether the presumption of certain precursors as regulated pollutants should be stayed during the SIP development process. Such a provision would be intended for States that are able to exclude* NO_x *or include VOC and* NH_3 *in their programs. It appears that EPA intends to exclude* SO_2 *from this provision, since it is a "default" precursor. (70 FR 66046)*

NESCAUM sees no reason to delay application of the PM2.5 final rule provisions to the precursors of PM2.5 formation, which have been clearly demonstrated to have a significant influence on PM2.5 levels. All applicable provisions of NSR should be applied to the default precursors SO_2 and NO_x. We do not believe this approach would hamper a State's ability to demonstrate that NOx could be exempted as a precursor; such demonstrations will likely be difficult to make for the majority of States notwithstanding. If NH_3 and VOC are determined to be precursors by EPA, then NESCAUM would support that such a determination should await the SIP development process.

16. Net air quality impact analysis in nonattainment areas: Lacking in EPA's proposal is mention of the required modeling demonstration of net air quality benefit analysis from the proposed source in combination with the sources of offsets. This is similar to the limited mention of modeling in attainment areas per 70 FR 66042, as discussed in the section above entitled "Air quality analysis requirements for PSD." NESCAUM is troubled by this omission. Sections IV.A.4 and D of Appendix S, 40 CFR Part 51 provide requirements for new or modified sources locating in a designated nonattainment area with respect to a clear demonstration of net air quality benefit from the offsetting emissions. This requirement is clearly noted for other than precursors in Section D: "Since the air quality impact of SO_2, particulate and carbon monoxide sources is site dependent, simple area wide mass reductions are not appropriate. For these pollutants, the reviewing authority should consider atmospheric simulation modeling to ensure that the emission offsets provide a positive net air quality benefit." Such a requirement has a longstanding history in EPA and state regulations in terms of demonstrating benefit, on balance, over the receptors that are affected by the proposed source. Clearly, such a requirement is necessary for the direct emissions of PM2.5 to ensure not only further progress in achieving the PM2.5 standards, but also to ensure there is no additional contribution or creation of nonattainment conditions in the vicinity of the proposed source when emission offsets are obtained from distant sources.

ATTACHMENT B
Background on Offset Requirements for Nonattainment Areas

CAA and EPA Regulation and Guidance

Section IV.A of Appendix S of 40 CFR Part 51 provides EPA's interpretation of the CAA requirements for new or modified sources locating in a designated nonattainment area. Conditions 3 and 4 of this section state that the emission offsets obtained from the proposed source must accomplish two goals:

1. Ensure reasonable progress toward attainment of the applicable NAAQS
2. Provide a positive net air quality benefit in the affected area.

Condition 3 also states "Only intra-pollutant emission offsets will be acceptable (e.g., hydrocarbon increases may not be offset against SO_2 reductions)." Condition 4 specifies that this positive net air quality benefit can be determined by atmospheric modeling. An exception to source specific modeling is made for VOC and NO_x offsets obtained for ozone nonattainment. To demonstrate a positive net air quality benefit, a VOC or NO_x source must follow the offset location requirements in Section IV.D of Appendix S. EPA's draft 1990 New Source Review Workshop Manual provides additional guidance on determining a net air quality benefit. On page G.6, it states "Sources involved in an offset situation should impact air quality in the same general area as the proposed source, but the net air quality benefit test should be made on balance for the area affected by the new source."

Inter-Pollutant Offset Trading

The stable nature of primary PM2.5 emissions and the complex atmospheric chemistry of the SO_2 and NO_x precursor emissions make comparisons of their relative impacts a difficult task. (Note: only the precursors of SO_2 and NO_x are included in this discussion, as these are proposed to be national "default" precursors.) Direct PM2.5 emissions will have their greatest impact in the immediate vicinity of most sources. At greater distances, the impacts of primary PM2.5 emissions will decrease considerably. Determining where and when precursor emissions of SO_2 and NO_x will have their impacts as sulfate and nitrate is much more difficult. The complex chemistry involved with sulfate and nitrate formation is described in Section II of the proposed rule (Fine Particulates: Overview of Atmospheric Chemistry, sources of Emissions, and Ambient Monitoring Data).

In almost all cases, significant amounts of SO_2 and NO_x will not be converted to sulfate and nitrate until the plume has traveled for several hours. Depending on the location of the source, the plume could be transported outside the designated nonattainment area before sulfate and nitrate concentrations become of concern so that the amount of sulfate and nitrate formed within the maximum impact area of the source will be minimal. For example, a very high SO_2 to sulfate conversion rate of 5 percent and a low wind speed of 3 m/s would result in 1.4 percent of the SO_2 converted to sulfate after 3 km of plume transport. When values closer to annual averages are assumed (1 percent conversion and a 5 m/s wind speed), 0.16 percent of the SO_2 will be converted to sulfate within 3 km of the source. One would therefore have to compare a relatively low magnitude regional impact over several 100 km^2 to that of a relatively high magnitude localized impact area (i.e., an "apples to oranges" comparison). Determining a positive net air quality benefit in situations where direct PM2.5 emissions are being offset by PM2.5 precursor emissions will be highly subjective. In many cases, the sulfate and nitrate will be formed outside the nonattainment area and will not provide reasonable progress toward PM2.5 attainment. However, in cases where PM2.5 precursor emission increases are being offset by direct PM2.5 emissions, achieving a net air quality benefit is likely in the source's vicinity. Such offset trading should be allowed; if the offset ratio is 1:1, then a net air quality benefit may be assumed. If the amount of PM2.5 precursor emission increase is greater than the direct PM2.5 emission offset, then source-specific modeling should be required that verifies a net air quality benefit has been achieved in the nonattainment area.

The proposed rule suggests that one method of showing a net air quality benefit would be a modeling demonstration for the entire nonattainment area instead of on a source-by-source basis. This type of regional modeling demonstration would most likely involve the use of a regional model such as CMAQ. While CMAQ type models are relatively accurate in modeling sulfate and nitrate formation, all emissions within a grid would be spatially averaged over the entire grid. This is problematic. Even more problematic is that ground-level ambient concentrations would be averaged over the entire grid. The modeled results will not be of good use, given the models are usually run with 12 km by 12 km grids, and at a minimum 4 km by 4 km grids. Details on the local impact of direct PM2.5 emissions near the stack will therefore be lost. Requiring each source to run CMAQ in its plume-in-grid mode to avoid this problem would be extremely resource intensive. Alternatively, achieving an air quality benefit modeling for direct PM2.5 (i.e., particulate) using simple area-wide offsets similar to NO_x and VOC is not allowed in Section IV.D of Appendix S.

Inter-Precursor Offset Trading

Ensuring reasonable progress toward attainment and a net air quality benefit by developing valid inter-precursor offset ratios between SO_2 and NO_x precursor emissions is also unrealistic at this time. It will be extremely difficult to establish a relationship at a given location and time between the concentration of sulfate due to SO_2 emissions and the concentration of nitrate due to NO_x emissions. The factors that influence sulfate formation are very different from those that affect nitrate atmospheric chemistry. These differences are described in detail in Section II of the proposal. For example, sulfate levels are higher in the summer and during daylight while nitrate concentrations tend to be higher in the winter and at night.

Another example of how the sulfate and nitrate atmospheric chemistry makes inter-precursor offset trading difficult is their reactions to ammonia. Ammonia will first react with the available sulfuric acid to form ammonium sulfate before it reacts with nitric acid to form ammonium nitrate. Often, there will not be enough ammonia in the atmosphere to react with all available sulfuric acid. As a result, very little ammonium nitrate forms and nitrate concentrations will be low. Therefore, in some situations a reduction in sulfur dioxide emissions will make more ammonia available for reaction with nitric acid, which will in turn increase the amount of ammonium nitrate and PM2.5 in the atmosphere. In such situations, large amounts of SO_2 offsets may not result in a net air quality benefit. This phenomenon has been reported in several studies (e.g., John Bachman EPA/OAQPS presentation to the NETL Conference PM2.5 and Electric Power Generation: Recent Findings and Implications "Clear Skies and PM2.5 – Regional Haze Implementation Policy" April 9, 2002).

Many of the problems with regional modeling for determining inter-pollutant offset trade ratios will apply to inter-precursor offset trading, as the results from sophisticated models such as CMAQ with their grid averaging would not provide enough detail. Such analyses would also be resource intensive. Another option proposed would be for individual trades to submit modeling as part of their NSR permit applications. Modeling-specific precursor trades between sources as part of the permit would probably be based on CALPUFF modeling. However, we are concerned with use of CALPUFF for this purpose, as it has a relatively simple treatment of sulfate and nitrate atmospheric chemistry. Before allowing its use in determining offset ratios, EPA must verify CALPUFF's accuracy in predicting relative near- and far-field sulfate and nitrates concentrations. Requiring each source to model their emission trades with CALPUFF would also be resource intensive. Detailed modeling guidance on setting of offset ratios and the demonstration of a net air quality benefit on a source-by-source basis will be needed.

In summary, it will be extremely difficult and premature, on a short- and long-term basis, to compare the impact of sulfur dioxide emissions on an area's PM2.5 concentration to that of NO_x emissions affecting the same area's PM2.5 concentration.

Offset Location Requirements of Direct PM2.5 Emissions and PM2.5 Precursor Emissions

Section IV.D of Appendix S makes a distinction between primary pollutant emissions and precursor emissions that must undergo complex atmospheric chemical reactions to form the pollutant of interest. It states: "Offsets for NO_x sources may also be obtained within the broad vicinity of the proposed new source. This is because areawide ozone and NO_2 levels are generally not as dependent on specific VOC or NO_x source location as they are on overall area emissions. Since the air quality impact of SO_2, particulate, and carbon monoxide sources is site dependent, simple areawide mass emission offsets are not appropriate."

These statements support our recommendation that an increase in emissions of direct PM2.5 should be offset by a decrease in direct PM2.5. As noted above, the impact of particulate emissions is of a site-specific nature. As a result, the emission offsets obtained for direct PM2.5 emissions must be of the same site-specific nature (i.e., direct PM2.5 emissions). Emissions of SO_2 and NO_x as precursors to PM2.5 more closely relate to the ozone precursor emissions of NO_x and VOCs. Therefore, offsets of SO_2 and NO_x should be able to be obtained from sources located anywhere in the same nonattainment area as the proposed new source or an area with a higher designation if it meets the contribution test. As with NO_x and VOC offsets, an increase in emissions of PM2.5 precursor should be offset by a decrease in the same PM2.5 precursor. EPA does not allow NO_x and VOC emission offsets to be substituted for each other for the ozone standard; the same logic should apply to PM2.5 precursor emissions of SO_2 and NO_x.