

NESCAUM Technical Guidance on Significant Impact Levels (SILs) for PM_{2.5}

Background and Importance of SILs

On January 16, 2006 the NESCAUM states commented on the EPA November 1, 2005 Proposed Rule for the implementation of the PM_{2.5} standards, urging EPA to adopt PM_{2.5} Significant Impact Levels (SILs) and PSD increments for PM_{2.5} emissions. SILs currently exist for PM₁₀, CO, SO₂ and NO₂ and if the maximum modeled ambient impacts from a proposed project are less than the respective SIL, the source:

- Is presumed to not cause or significantly contribute to a PSD increment or NAAQS violation, and
- Is not required to perform multiple source cumulative impact assessments.

Without PM_{2.5} SIL levels, applicants would be required to perform a cumulative modeling analysis in essentially all instances – an analysis which could be unnecessarily resource consuming, especially given the limited information on PM_{2.5} emissions. Although EPA recognizes that SILs are important in implementing both attainment and nonattainment NSR requirements and assist both regulatory agencies and applicants in streamlining the permit review process, it has indicated that the final PM_{2.5} NSR rule will not be out until the end of 2006, at the earliest.¹

In the interim, the current EPA guidance on PM_{2.5} NSR in attainment and nonattainment areas is contained in the April 5, 2005 memo from Steve Page, Office of Air Quality Planning and Standards Director. This memo outlines the requirements of the Clean Air Act, Section 172(c)(5) specifically for the permitting of major sources in non-attainment areas and it also reaffirms a 1997 Seitz memo for attainment areas which, in essence, continues the use of PM₁₀ requirements for PSD sources. The Page memo states that until the PM_{2.5} Implementation Rule is finalized, States should use their PM₁₀ nonattainment NSR program as a surrogate or Appendix S of 40 CFR Part 51 to address PM_{2.5} nonattainment NSR for major sources. In almost all cases, the NESCAUM States or their respective EPA regional offices will need to apply Appendix S to PM_{2.5} major source until EPA finalizes the PM_{2.5} Implementation Rule or possibly until EPA approves changes to the States' SIP programs.

One of the requirements of Appendix S is that a source either in or adjacent to a non-attainment area must demonstrate that it does not contribute to the non-attainment status or create a new projected PM_{2.5} non-attainment area. Thus, the use of PM_{2.5} SILs would make the NSR process more straightforward and, therefore, their use is advantageous to both State agencies and applicants.

¹ The situation is similar to the issue of SILs for criteria pollutants in Class I areas which were proposed by EPA in a July 23, 1996 Federal Register Notice, but were never finalized. The NESCAUM Modeling Committee "adopted" the proposed levels, which have been applied in permit actions and accepted by both EPA and the Federal Land Managers. (NESCAUM states have recommended that EPA finalize these SILs in the same action as the PM_{2.5} SIL action).

Development and Consequences of PM_{2.5} SILs.

The NESCAUM Modeling Committee had previously developed and recommended PM_{2.5} SIL levels to EPA in our 1/16/06 comments on the proposed Implementation Rule. The attached table summarizes these values and their derivations (in the last row), as well as presents corresponding SILs for the other pollutants. It is noted that our recommendations used two alternative schemes (the “ratio” and “4% of standards” methods) which have been used previously by EPA to develop SILs and both these methods lead to similar values for the Class I and Class II PM_{2.5} SILs. In addition, corresponding PSD PM_{2.5} increments have been calculated using the ratio method and are included in the Table.

In order to determine the consequences of these proposed SILs, the Modeling Committee has undertaken a review of recent modeling projects in several states and has identified the likely implications of adopting various SIL values. This review has demonstrated that in most instances the annual SIL of 0.3 ug/m³ and in essentially all instances the 24 hour SIL of 2 ug/m³ for Class II areas would be exceeded by these projects. This could result in significant numbers of facilities which might have to perform a cumulative PM_{2.5} analysis. However, that determination will be left to the discretion of individual states.

NESCAUM Modeling Committee Policy on Regional SILs.

Given that EPA will not have SILs developed for PM_{2.5} before the NSR final rule, it is important for the NESCAUM states to “adopt” interim values which can be used in the permitting process.

These values are needed currently in at least one instance when a modeling assessment is required under the EPA regulations and policy: that is, for major sources of PM_{2.5} (EPA had proposed a 100 tons/year emission rate for the definition of major) in a non-attainment area, there is a requirement to demonstrate a net air quality benefit under the Appendix S provisions of 40 CFR part 51.

The establishment of interim PM_{2.5} SILs will also assist states and applicants in clarifying the instances where a source has a projected impact which might need to be further analyzed. The extent and complexity of any cumulative analysis conducted when the SIL is exceeded will be determined by individual States on a case-by-case basis and it will be left to the discretion of individual NESCAUM states to determine the permitting conditions under which the SILs will be used.

The NESCAUM Permit Modeling Committee therefore adopts the following Regional SILs in lieu of EPA defined PM_{2.5} SILs: ***0.3 ug/m³ and 2 ug/m³ for the annual and 24-hour PM_{2.5} levels in Class II areas and 0.06 and 0.13ug/m³ for the annual and 24-hour PM_{2.5} levels, respectively in Class I areas.*** Each NESCAUM State will have flexibility in determining under what conditions the SILs will benefit the streamlining of the permit review process or addressing concerns about total PM_{2.5} concentrations, including representative background levels. States will also maintain flexibility to revise these SILs after states have an opportunity to assess the extent of nonattainment under the new 24-hour average PM_{2.5} NAAQS (which would result in a Class II 24-hour average SIL of 1.2 ug/m³) or in response to any EPA recommended PM_{2.5} SILs.