




North Carolina Department of Environment and Natural Resources  
Division of Air Quality

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December 10, 2009

**TO:** Section Chiefs  
Regional Supervisors

**FROM:** Keith Overcash 

**SUBJECT:** PM2.5 NSR Transition Policy

In 1997 the EPA established a National Ambient Air Quality Standard (“NAAQS”) for PM2.5. At that time the EPA issued a memorandum outlining the transition towards implementing the new ambient standard. “*Interim Implementation for the New Source Review Requirements for PM2.5*,” John S. Seitz, EPA, October 23, 1997. The Seitz transition policy established the use of the existing PM-10 NSR program provisions as a transitional surrogate for implementation of the PM2.5 NSR requirements. EPA’s decision to use PM-10 as a surrogate was based on certain difficulties in implementing PM2.5 directly including the lack of necessary tools to calculate the emissions of PM2.5 and related precursors, the lack of adequate modeling techniques to project ambient impacts, and the lack of PM2.5 monitoring data.

In 2005 the EPA issued a guidance memorandum entitled “Implementation of New Source Review Requirements in PM-2.5 Non-Attainment Areas.” This memorandum reaffirmed EPA’s 1997 transitional policy.

In 2008 the EPA issued its final PM2.5 NSR Implementation Rule. That rule, codified at 40 CFR §51.21, is directly applicable in jurisdictions with delegated NSR programs. Jurisdictions with fully approved programs are required to revise their existing programs, as necessary, to conform to the minimum acceptable program elements at 40 CFR § 51.166. North Carolina has started this rulemaking process. However, until the rulemaking is complete, the NCDAQ is establishing this transition policy in order to more effectively and efficiently implement the PM2.5 NSR elements.

### **PM2.5 Modeling**

For any project that is a new major stationary source of primary PM2.5, or for an existing source that proposes a modification that results in a significant emissions increase of primary PM2.5, the source will be required to demonstrate compliance with the national ambient air quality standard for PM2.5 as adopted by North Carolina at 15A NCAC 2D .0400. This demonstration shall be performed based on the source’s primary PM2.5 emissions and shall use the most representative available PM2.5 ambient monitoring background concentration. The facility will not be required to include off-site inventory at this time. This transitional modeling procedure will be reviewed as more reliable PM2.5 inventory data become available or when EPA issues a final PM2.5 modeling rule.

### **PM2.5 Precursors**

In the PM2.5 NSR Implementation Rule, the EPA established that because SO2 “is a significant component (e.g., ranging from 9 percent to 40 percent) of [ambient] PM2.5 concentrations, and contributes to other air quality problems in all regions of the country” that SO2 would be regulated as PM2.5 precursor pollutant. With

respect to oxides of nitrogen (“NOx”), although nitrate concentrations varied significantly across the country, the EPA provided a rebuttable presumption that NOx is a PM2.5 precursor pollutant.

North Carolina is proposing that both SO2 and NOx be considered precursor pollutants to PM2.5 formation.

#### **Significant Emission Rates**

The determination of whether a modification is subject to major PSD review is based, in part, on whether there is a significant emissions increase. Activities which do not result in an emissions increase above the significance level are considered de minimus. In the PM2.5 NSR Implementation Rule, the EPA established a direct PM2.5 significance rate base of 10 tons per year by determining the size of a source of direct PM2.5 emissions that would be expected to have an ambient impact of four percent or more of the NAAQS.

North Carolina believes this is a reasonable approach for direct PM2.5 and therefore is establishing, for the purposes of this transitional period, a direct PM2.5 significance rate of 10 tons per year. The significant emissions rate for SO2 will remain at 40 tons per year while the significant emissions rate for NOx will be set at 200 tons per year. The difference in the significant emission rates of the secondary precursors (SO2 and NOx) reflects the relative import of the pollutants with regard to secondary PM2.5 formation. *See* 75 Fed. Reg. 28321 at 28339. *See also* August 2009, The Hickory and Greensboro/Winston-Salem/High Point, NC PM2.5 North Carolina Attainment Demonstration; Section 2.0 SIGNIFICANCE OF PM2.5 PRECURSOR POLLUTANTS ([http://daq.state.nc.us/planning/PM2.5\\_SIP\\_Narrative\\_08212009.pdf](http://daq.state.nc.us/planning/PM2.5_SIP_Narrative_08212009.pdf)).

#### **Condensable PM Emissions**

In the PM2.5 NSR Implementation Rule, the EPA established that only after January 1, 2011, would condensable emissions be required to be included in determining rule applicability. However, North Carolina already requires that condensable emissions be considered in determining applicability and compliance. See 15A NCAC 02D .2609.

#### **Best Available Control Technology**

In the PM2.5 NSR Implementation Rule, the EPA established that if a physical or operational change at an existing major source would result in a significant emissions increase and a significant net emissions increase of a regulated NSR pollutant in an attainment area for that pollutant, the source must apply BACT to each proposed emissions unit. Under the PM2.5 PSD program, these requirements will apply to direct PM2.5 emissions, SO2 emissions, and NOx emissions.

The NCDAQ will require BACT for primary PM2.5, SO2, and NOx when a project triggers PSD review for PM2.5.

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