

# San Joaquin Valley Unified Air Pollution Control District

## Interim New Source Review Requirements for PM<sub>2.5</sub>

Approved By: <signed> Date: 10/27/09  
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### PURPOSE

The purpose of this policy is to outline interim Federal New Source Review (NSR) requirements for PM<sub>2.5</sub> for new major sources and federal major modifications. These requirements are specified in 40 CFR Part 51.165 and the EPA Emission Offset Interpretive Ruling (Part 51 - Appendix S) and are effective as of July 15, 2008.

The Appendix S requirements for PM<sub>2.5</sub> will apply until Rule 2201 is amended to incorporate provisions for PM<sub>2.5</sub>, i.e. no later than July 15, 2011.

These new PM<sub>2.5</sub> requirements are in addition to the existing requirements in Rule 2201 to quantify PM<sub>10</sub> emissions.

### APPLICABILITY

The Appendix S requirements are applicable to new major PM<sub>2.5</sub> sources and federal major modifications of PM<sub>2.5</sub> and its precursors. The thresholds are as follows:

PM <sub>2.5</sub> major source threshold	100 ton/year
PM <sub>2.5</sub> federal major modification threshold	10 ton/year

The federal major modification calculation procedure is contained in the latest version of 40 CFR 51.165 (See 51.165 (a)(2)(ii)(B) through (D) and (F)).

Please note that the above thresholds are different than the PM<sub>10</sub> major source threshold of 70 ton/year and major modification threshold of 15 ton/year.

Due to lack of appropriate test methods, quantification of PM<sub>2.5</sub> emissions does not include the condensable fraction of PM<sub>2.5</sub> at this time. Only the filterable portion of PM<sub>2.5</sub> is required to be used to determine major source and federal major modification

applicability. By January 1, 2011 EPA will establish appropriate test methods for the condensable fraction of PM<sub>2.5</sub>. After that date (or earlier if EPA specifies), all applicability determinations must use both the filterable and condensable fractions of PM<sub>2.5</sub>.

SO<sub>2</sub> is stipulated as a PM<sub>2.5</sub> precursor in Appendix S. In Appendix S, the SO<sub>2</sub> major source threshold is 100 ton/year, and the major modification threshold is 40 ton/year. As the Rule 2201 SO<sub>2</sub> major source thresholds (70 ton/year) and major modification threshold (40 ton/year) are equal to or lower than those in Appendix S, Rule 2201 is no less stringent than Appendix S. As such SO<sub>2</sub> emissions will be omitted from the Appendix S compliance determination.

NOx is not stipulated as a PM<sub>2.5</sub> precursor in Appendix S. However by January 11, 2011 the District must establish if NOx is a precursor to PM<sub>2.5</sub>. At that time, the District will have to either establish that NOx is not a precursor to PM<sub>2.5</sub> or establish a significance threshold for NOx as a precursor to PM<sub>2.5</sub>. Therefore NOx will not be regulated as a PM<sub>2.5</sub> precursor until Rule 2201 is amended.

Appendix S requirements PM<sub>2.5</sub> apply to Authorities to Construct issued after July 15, 2008.

#### **APPENDIX S REQUIREMENTS FOR PM<sub>2.5</sub>**

Appendix S provides implementation guidelines for the federal non-attainment NSR regulations in 40 CFR 51.165. For the purposes of this policy, Appendix S only applies to new major sources for PM<sub>2.5</sub> (100 ton/year) and federal major modifications for PM<sub>2.5</sub> (10 ton/year).

For purposes of Appendix S, PM<sub>2.5</sub> only includes the filterable fraction. It does not include condensables.

Appendix S requires that offsets for PM<sub>2.5</sub> emission increases be provided for new major sources and federal major modifications. Such offsets must be surplus of Federal requirements at the time of ATC issuance for the emission increase, i.e. surplus at the time of use. Please note that this is a major departure from the District's current offset system (surplus at the time of ERC issuance).

Appendix S specifies that the distance offset ratio shall be at least 1:1. The distance offset ratio for using PM<sub>2.5</sub> emission reductions to offset PM<sub>2.5</sub> emission increases will be the same as the distance offset ratio specified in Rule 2201 Table 4-2, i.e. ranging from 1:1 to 1.5:1 depending on the distance between the emission reduction and the emission increase.

In the Appendix S PM<sub>2.5</sub> implementation Federal Register notice EPA established a pre-approved interpollutant offset ratio of SO<sub>x</sub>/PM<sub>2.5</sub> = 40:1 for anywhere in the country.

Based on preliminary guidance from EPA, use of any other interpollutant offset ratios for PM<sub>2.5</sub> are not allowed until Rule 2201 is amended (and approved by EPA) to include provisions for PM<sub>2.5</sub>, including the specification of interpollutant ratios in for PM<sub>2.5</sub>.

## IMPLEMENTATION POLICY

Any ATCs issued after July 15, 2008 must comply with the requirements of Appendix S, as they apply to PM<sub>2.5</sub> and PM<sub>2.5</sub> precursors (SO<sub>x</sub>).

### Existing stationary sources

The procedure below is intended to be a streamlined approach in determining if a project at an existing stationary source is subject to Appendix S, i.e. is the project a federal major modification at a major PM<sub>2.5</sub> source.

- Step 1 If the stationary source is not major for PM<sub>10</sub>, the project is not subject to Appendix S. No further analysis is necessary. If the stationary source is major for PM<sub>10</sub>, go to step 2.
- Step 2 If the stationary source is major for PM<sub>10</sub>, calculate the emission increase in filterable PM<sub>2.5</sub> emissions pursuant to the requirements of 40 CFR 51.165. In general, for new emission units the emission increase is equal to the potential to emit. For existing emission units the emission increase is the difference between the potential to emit or the projected actual emissions (if the applicant provides a sufficient data to establish projected actual emissions) and actual emissions.
- PM<sub>2.5</sub> emissions calculations shall be based on emission factors for filterable PM<sub>2.5</sub> from manufacturer's information, AP42, or best engineering judgment. Please note that some chapters in AP42 provide documentation on the filterable fraction and size range of particulate matter emissions from a particular process. AP42 Appendix B includes particulate matter size distributions for selected sources and generalized size distributions.
- Step 3 If the filterable PM<sub>2.5</sub> emission increase calculated pursuant to 40 CFR 51.165 is greater than 10 ton/year, the project may be a federal major modification for PM<sub>2.5</sub>.

To definitively determine if the project is a federal major modification for PM<sub>2.5</sub>, determine if the stationary source is major for PM<sub>2.5</sub>. Alternatively, the stationary source may stipulate that the facility is a major source for PM<sub>2.5</sub>.

Step 4 If the facility has not stipulated that the stationary source is major for PM<sub>2.5</sub>, pre-project stationary source potential to emit (SSPE1) for PM<sub>2.5</sub> must be calculated. Remember, PM<sub>2.5</sub> emissions only include the filterable fraction. The condensable fraction is not quantified.

Step 5 If the stationary source PM<sub>2.5</sub> potential to emit is less than 100 ton/year, the project is not subject to Appendix S. No further review is necessary.

If the stationary source PM<sub>2.5</sub> potential to emit is equal to or greater than 100 ton/year, and the increase in emissions from the project is greater than 10 tons/year, the project is subject to Appendix S.

Step 6 BACT is required for PM<sub>2.5</sub>. A BACT analysis for PM<sub>2.5</sub> must be performed. In the BACT analysis for PM<sub>2.5</sub>, existing control technologies for PM<sub>10</sub> should be considered if they are effective at controlling PM<sub>2.5</sub>.

PM<sub>2.5</sub> offsets must be surplus of federal requirements at the time of ATC issuance. The distance offset ratio for using PM<sub>2.5</sub> emission reductions to offset PM<sub>2.5</sub> emission increases will be the same as the distance offset ratio specified in Rule 2201 Table 4-2, i.e. ranging from 1:1 to 1.5:1 depending on the distance between the emission reduction and the emission increase.

The interpollutant offset ratio pre-approved by EPA is SO<sub>x</sub>/PM<sub>2.5</sub> = 40:1.

An air quality impact analysis, alternative siting analysis, and a state-wide compliance certification is required.

#### New PM<sub>2.5</sub> stationary sources

Step 1 Calculate the PM<sub>2.5</sub> SSPE2 for the new stationary source. If the PM<sub>2.5</sub> SSPE2 is less than 100 ton/year, the stationary source is not major for PM<sub>2.5</sub> and is therefore not subject to Appendix S. No further analysis is necessary.

If the stationary source is major for PM<sub>2.5</sub>, go to Step 2.

Step 2 BACT is required for PM<sub>2.5</sub>. A BACT analysis for PM<sub>2.5</sub> must be performed. In the BACT analysis for PM<sub>2.5</sub>, existing control technologies for PM<sub>10</sub> should be considered if they are effective at controlling PM<sub>2.5</sub>.

PM<sub>2.5</sub> offsets must be surplus of federal requirements at the time of ATC issuance. The distance offset ratio for using PM<sub>2.5</sub> emission reductions to offset PM<sub>2.5</sub> emission increases will be the same as the distance offset ratio specified in Rule 2201 Table 4-2, i.e. ranging from 1:1 to 1.5:1

depending on the distance between the emission reduction and the emission increase.

The interpollutant offset ratio pre-approved by EPA is  $\text{SO}_x/\text{PM}_{2.5} = 40:1$ .

An air quality impact analysis, alternative siting analysis, and a state-wide compliance certification is required.

**RESCINDED 5/31/11**