



MEMO TO : Interested Parties

FROM : Terry L. O'Clair, P.E. *T.B.*
Director *for*
Division of Air Quality *TLO*

RE : Criteria Pollutant Modeling Requirements
for a Permit to Construct

DATE : October 6, 2014

Projects Subject to PSD:

Under the Prevention of Significant Deterioration of Air Quality (PSD) rules, dispersion modeling for criteria pollutants is required prior to issuance of a Permit to Construct (PTC) if the permit is for either a new facility classified as a "major stationary source" or a modification to an existing major stationary source when the modification is classified as a "major modification" under the PSD rules (adopted into Chapter 33-15-15 of the North Dakota Air Pollution Control Rules). Modeling is required when emissions exceed the "PSD significant levels", which are defined as follows (only the significant levels for criteria pollutants are shown):

<u>Pollutant</u>	<u>Emissions</u>
Carbon Monoxide	100 tons/year
Nitrogen Oxides	40 tons/year
Sulfur Dioxide	40 tons/year
PM ₁₀	15 tons/year
Lead	0.6 tons/year
PM _{2.5} *	10 tons/year

* A source that emits 40 tons per year or more of sulfur dioxide and/or 40 tons per year or more of nitrogen oxides is significant for PM_{2.5} (40 CFR 52.21(b)(23)(i)).

Projects Not Subject to PSD:

For those projects which are not subject to the PSD rules, as a general rule, modeling will be required if the potential emissions from a new facility or the change in potential emissions from an existing facility exceed the following amounts:

Pollutant	All emissions vent from stacks with height ≥ 1.5 times nearby bldg. height	Some emissions vent from stacks with height < 1.5 times nearby bldg. height
Nitrogen Oxides	100 tons/year	40 tons/year
Sulfur Dioxide	100 tons/year	40 tons/year
PM ₁₀	40 tons/year	15 tons/year
PM _{2.5}	25 tons/year	10 tons/year

Modeling of carbon monoxide and/or lead emissions will generally only be required for sources required to conduct modeling of carbon monoxide and/or lead emissions under the PSD rules.

Additional Information (applicable to both PSD and non-PSD Projects):

Note that there are instances where modeling may be required at lower emissions than outlined above. These include cases when a facility will be located close to a Class I area or there are changes to an existing facility whose current emission rates are causing concentrations approaching either the Ambient Air Quality Standards or the PSD increment levels.

With respect to nearby sources of emissions, the impact of emissions from sources within 20 kilometers ($\sim 12 \frac{1}{2}$ miles) shall generally be included in the modeling analysis. The impact of emissions from sources greater than 20 kilometers and less than 50 kilometers (~ 31 miles) shall generally be included if potential emissions from the source of the pollutant being modeled exceed 100 tons/year.

Modeling submitted with a PTC application for a PSD project must address compliance with the Ambient Air Quality Standards as well as the PSD increments. Modeling submitted with a PTC application for a project not subject to the PSD rules must address compliance with the Ambient Air Quality Standards.

Modeling of PSD Class I increments will be required for PSD projects located within 250 kilometers of the nearest North Dakota Class I area, and for non-PSD projects (meeting potential emissions criteria above) located within 50 kilometers of the nearest Class I area. If the subject source significantly impacts a Class I area, a cumulative analysis including other increment-consuming sources must be conducted. The cumulative analysis must include all major sources, located within 250 kilometers and minor sources located within 50 km of the Class I area. The inventory will be provided by the Department. If an analysis is required for Class I increment consumption, a Class II increment consumption analysis shall also be submitted.

NDDH Class I Significant Impact Levels
 $\mu\text{g}/\text{m}^3$

Pollutant	Averaging Time		
	Annual	24-hour	3-hour
SO ₂	0.1	0.2	1.0
PM ₁₀	0.1	0.2	-
NO ₂	0.1	-	-
PM _{2.5}	0.06	0.07	-

TB:saj