

San Joaquin Valley
Air Pollution Control District

APR - 1960

Policy for PSD Modeling
District Rule 2410
Guidance for Identifying Sources to be Evaluated
for Inclusion in an Increment Assessment

Approved By: 	Date: <u>June 25, 2014</u>
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Purpose:

The purpose of this guidance is to provide the rationale for determining which source(s) is/are required to be evaluated for inclusion in an Increment Assessment.

II. Applicability

This policy applies to all PSD projects required to conduct a Increment Assessment.

III. Definitions

Significant Impact Area (SIA): is the area, more specifically the receptors, in which the modeled concentration is equal to or greater than the SIL value for a given regulated criteria pollutant.

Significant Emission Rate (SER): means any emissions rate or any net emissions increase associated with a major stationary source or major modification.

SER Threshold Values		
Pollutant	Averaging Period	SER (Tons/Yr)
PM2.5*	Annual	10
	24-Hour	
PM10	Annual	15
	24-Hour	
Carbon Monoxide (CO)	8-Hour	100
	1-Hour	
Nitrogen Oxide (NO2)	Annual	40
	1-Hour	
Sulfur Dioxide (SO2)	Annual	40
	24-Hour	
	3-Hour	
	1-Hour	

*The District is currently non-attainment

Secondary Emissions: means emissions which would occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the major stationary source or major modification.

Vicinity: for the purpose of this policy is defined as 10 kilometers from the maximum impacted receptor found during the SIL assessment.

IV. Background

The purpose of an increment assessment is to determine on a pollutant-by-pollutant basis if the modeled concentration within the SIA exceeds an Increment threshold. An increment assessment is comprised of five components; 1) the proposed project's source(s), 2) Any emissions unit at the proposed facility permitted after the minor source baseline date 3) Any Major or Minor unit in the vicinity of the SIA permitted after the minor source baseline date, 4) Any area source in the vicinity of the SIA constructed after the minor source baseline date, and 5) Any mobile source (roadway) in the vicinity of the SIA after the minor source baseline date.

For each receptor, the modeled concentration is the sum of the modeled concentrations from:

- the proposed project's emission sources,
- the proposed project's existing emission sources,
- the nearby Major and/or Minor emission sources,
- the nearby area sources, and;
- the nearby mobile (roadway) sources.

NOTE!!

When performing an increment assessment both increment consuming and increment expanding **activities** must be evaluated. For example, an emission unit that was operating before the minor source baseline **date and is** still in operation is modified to reduce their NOx emissions after the baseline date is considered an increment expanding source. A source permitted after the minor source baseline date (without modifications) is considered an increment consuming source.

The receptor with the maximum concentration is then compared to the pollutant's increment threshold.

V. Source Identification

The following section provides the rationale used by the District to identify sources that are required to be evaluated for inclusion in a cumulative impact assessment.

a. Project's Sources

All sources seeking a PSD permit must be included in an increment assessment. Additional non-PSD sources may be required to be included in an increment assessment. Therefore, it is recommended that the reviewing agency be consulted to ensure that all required emissions sources are identified and included in any assessment.

b. Project Existing Source

All permitted units at the facility that are permitted after the pollutant specific minor source baseline data should be evaluated in the increment assessment.

c. Nearby Sources (Major, Minor, Area, and Mobile)

When determining which nearby sources should be evaluated for inclusion in an increment assessment the sources can be divided into two categories: 1) Sources within 10 kilometers and 2) Sources within 15 kilometers.

i. Sources Within 10 Kilometers

As stated in District's policy entitled "Guidance for Determining Modeling Domain"¹, a source's highest concentration is usually found within a radius of 10 kilometers from the source. Therefore, sources that are within 10 kilometers of the maximum impacted receptor(s), as identified in the SIL assessment, should be evaluated for inclusion in an increment assessment see Figure 1. If more than one SIA is identified then each SIA must be evaluated and sources with 10 kilometers of each of the SIA's maximum impacted receptor must be reviewed for inclusion.

ii. Sources Within 15 Kilometers

Additionally, any sources within 15 kilometers of the maximum impacted receptor that have a pollutant emissions rate greater than or equal to a SER threshold should also be evaluated for inclusion in the an increment assessment. When making this determination several scenarios may arise and will need to be evaluated. To assist with this determination the following scenarios have been provided. If none of the scenarios presented below are applicable / match the scenario being evaluated then it is recommend that the reviewing agency be consulted.

a. Definitions

- i. The definition of area for the purposes of making this determination is defined to mean within 100 meters² radius.
- ii. The definition of Similar Emission Units for the purpose of making this determination is defined to mean emission units that are of the same equipment type and perform the same function. For example, a boiler and a steam generator are the same type of equipment but perform different functions. This distinction between the equipment type and its function within the facility operation will dictate the dispersion parameters used when modeling.

b. Single Emission Unit:

- i. A single emission unit located within 15 kilometers of the maximum impacted receptor should be evaluated for inclusion.

c. Multiple Emission Units Located in the Same Area and Not Under a Common Ownership:

- i. Multiple emission units located in the same area, not under a common ownership, and located within 15 kilometers of the maximum impacted receptor should be evaluated for inclusion as separate / individual units.

d. Multiple Emission Units Located in the Same Area and Under a Common Ownership:

¹ District Web Link Here

² EPA "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources Revised" (Oct 1992)

- i. **Non-Similar Emission Units:** Multiple non-similar emission units located in the same area, under a common ownership, and located within 15 kilometers of the maximum impacted receptor should be evaluated for inclusion as separate / individual units.
- ii. **Similar Emission Units:** Multiple similar emission units located in the same area, under a common ownership, and located within 15 kilometers of the maximum impacted receptor should be evaluated for inclusion as if they were a single emission unit. This is done by summing the emissions from all units to determine if the pollutant emissions rate is greater than or equal to a SER threshold.

VI. Emissions Estimation

Once an emissions unit has been identified, as per Section V above, it needs to be categorized as an increment consuming or increment expanding source. This process can be broken down into subcategories as 1) Sources operating before the minor source baseline date and 2) Sources that started operation after minor source baseline date.

a. Source Operating Before the Minor Source Baseline Data

For the purpose of an increment assessment a source that is in operation before the baseline date does not need to be included in the increment assessment unless the source has been modified (permitted sources) or has had increases (area / mobile source) since the baseline date. In this case the source must be evaluated to determine if it is an increment expanding or consuming source. This is done by using the current/proposed permitted emissions limit and subtracting the pre-baseline emissions. The pre-minor source baseline emissions estimates should follow the requirements of Section VI.a.i below.

i. Pre-Minor Source Baseline Emissions Estimate

Since there is no clear definition of how to determine a pre-baseline emissions period in the CFR the District will utilize the basic procedures outlined in District Rule 2201 Section 3.9 "Baseline Period". Therefore, the pre-minor source baseline date emissions estimate is the period of time equal to either:

1. the average emissions of the two consecutive years of operation immediately prior to the minor source baseline date; or
2. the average emissions of at least two consecutive years within the five years immediately prior to the minor source baseline date if determined by the APCO as more representative of normal source operation; or
3. a shorter period of at least one year if the emissions unit has not been in operation for two years and this represents the full operational history of the emissions unit, including any replacement units; or
4. zero years if an emissions unit has been in operation for less than one year.

b. Source that Started Operation After Minor Source Baseline Data

For the purpose of an increment assessment a source that starts operation after the baseline date needs to be included in the increment assessment. This would include

permitted sources, area / mobile with increases and new area / mobile since the baseline date. In this case the source must be evaluated to determine if it is an increment expanding or consuming source. This is done by using the current/proposed permitted emissions limit and subtracting modification that reduce emissions and adding modification that increase emissions. When dealing with area / mobile sources the emission reducing and emissions increases are based on rules or regulates included in the state implementation plan (SIP).

NOTE!!

If the computation in VI.a or VI.b is positive the source is said to consume increment. If the computation in VI.a or VI.b is negative the source is said to expand the increment.

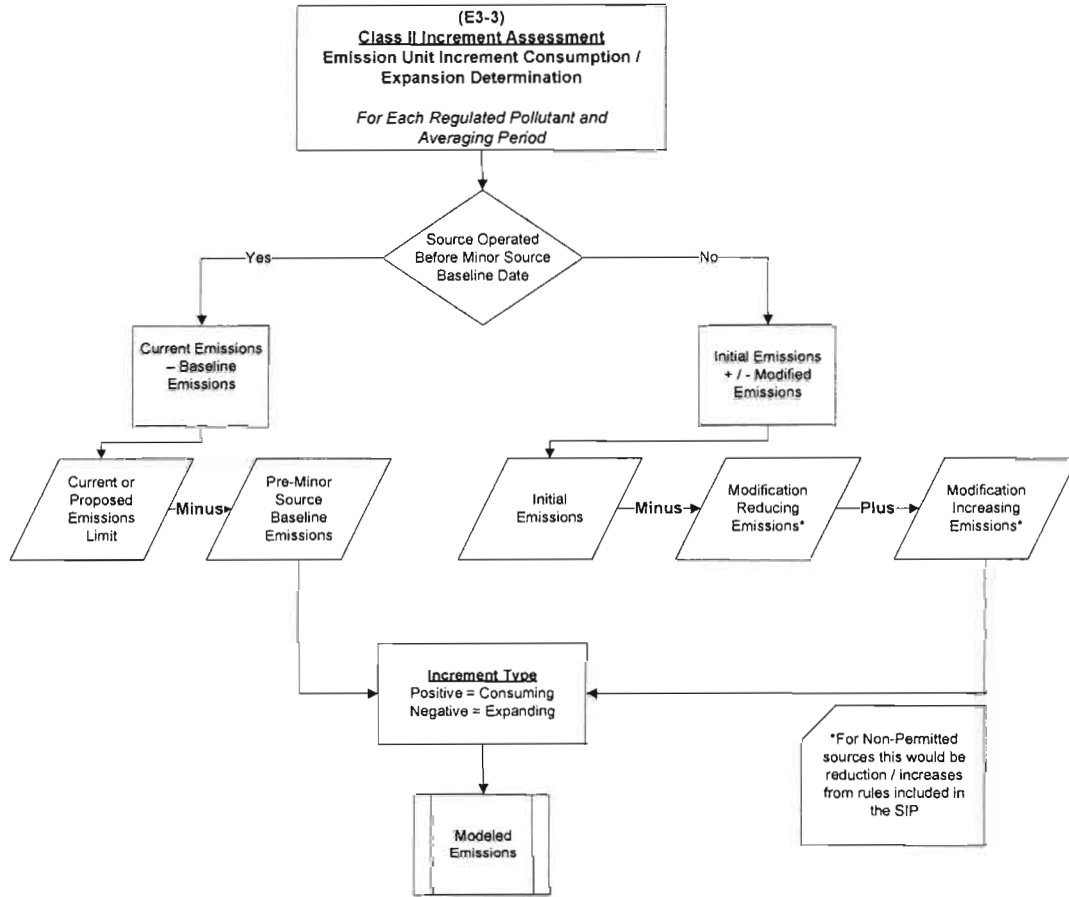


Figure 1- Increment Emissions Estimation

VII. Conclusion

Based on the information provided above and the District’s modeling experience, all proposed sources from a project must be evaluate, sources within 10 kilometers from the maximum impacted receptor must be evaluated for inclusion in any increment assessment and any source that is within 15 kilometers of the maximum impacted receptor that equal to or exceeds a SER, for a given pollutant, must also be reviewed for inclusion in an increment assessment.

VIII. Guidance

When conducting PSD modeling the following procedures should be followed:

- Increment Assessment:
 - All sources within 10 kilometers from the point(s) of maximum impact should be evaluated for Inclusion.
 - If more than one SIA is identified, then each area must be evaluated and sources within 10 kilometers of each SIA must be reviewed for inclusion.
 - All sources within 15 kilometers from the point(s) of maximum impact that are \geq to a SER threshold should be evaluated for inclusion.
 - If more than one SIA is identified, then each area must be evaluated and sources within 15 kilometers of each SIA must be reviewed for inclusion.

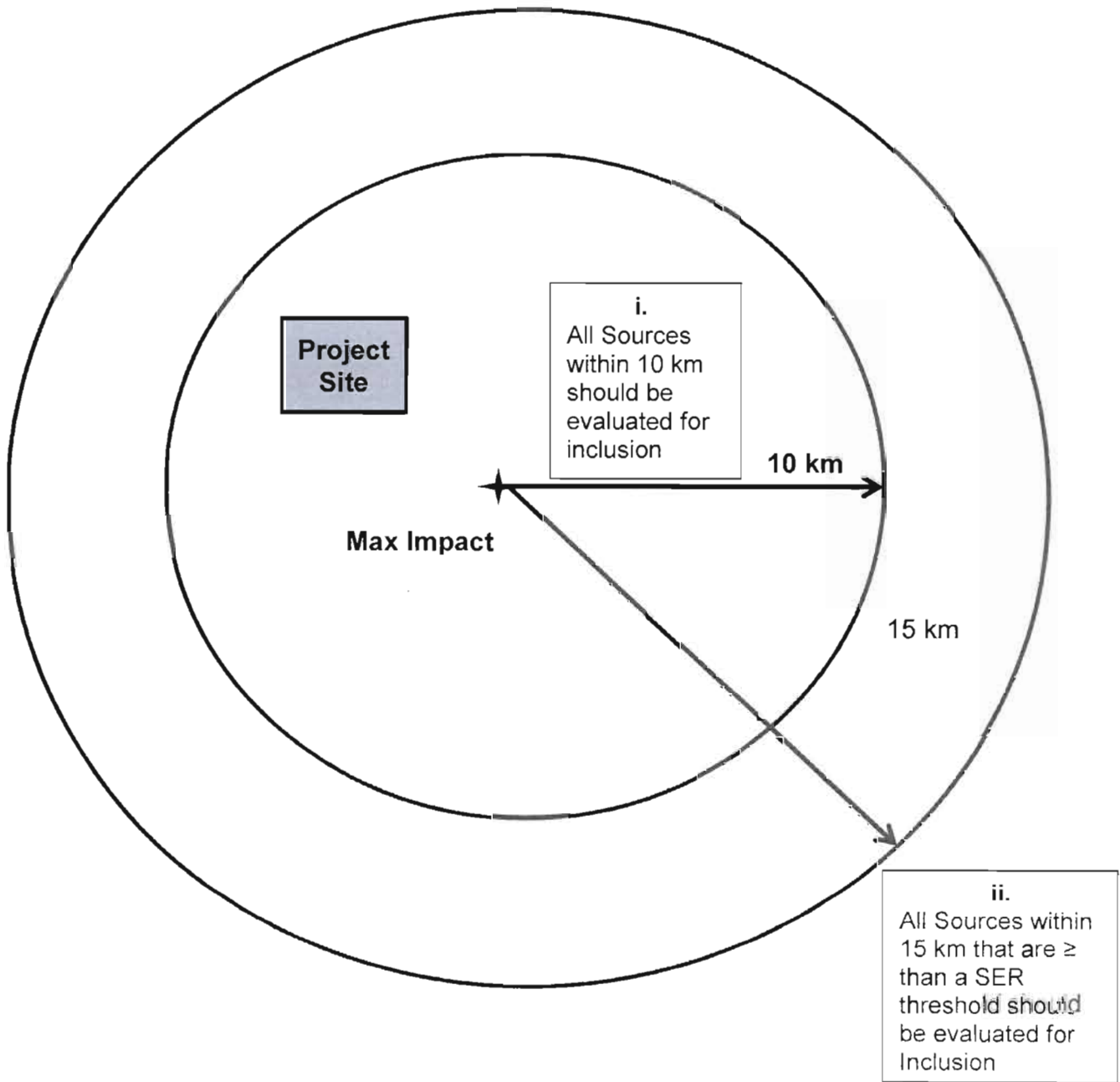


Figure -1 Increment Impact Model