

San Joaquin Valley
Air Pollution Control District

APR - 1950

Policy for PSD Modeling
District Rule 2410
Guidance for Identifying Sources to be Evaluated
for Inclusion in a Cumulative Impact Assessment

Approved By:


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I. 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 a Cumulative Impact Assessment.

II. Applicability

This policy applies to all PSD projects required to conduct a Cumulative Impact 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

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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.

Regional Monitor: means a monitor not located in the vicinity of the maximum impacted receptor found during the SIL assessment.

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 a cumulative impact assessment is to determine on a pollutant-by-pollutant basis if the modeled concentration within the SIA exceeds a NAAQS threshold. A cumulative impact assessment is comprised of four components; 1) the proposed project's source(s), 2) Any secondary emissions from the proposed project, 3) Nearby sources, and 4) a representative background monitor.

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

- the proposed project's emission sources,
- the secondary emission sources,
- the nearby sources, and
- the pollutant's concentration from the representative monitor.

The receptor with maximum concentration is then compared to the pollutant's NAAQS 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 a cumulative impact assessment. Additionally, non-PSD sources may be required to be included in a cumulative impact 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. Secondary Source

As per 40 CFR § 52.21 (b)(18)¹, "Secondary emissions include emissions from any offsite support facility which would not be constructed or increase its emissions except as a result of the construction or operation of the major stationary source or major modification. Secondary emissions do not include any emissions which come directly from a mobile source, such as emissions from the tailpipe of a motor vehicle, from a train, or from a vessel."

c. Nearby Sources

¹ 40 CFR § 52.21 <http://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol3/pdf/CFR-2011-title40-vol3-sec52-21.pdf>

When determining which nearby sources should be evaluated for inclusion in a cumulative impact assessment the sources can be divided into five categories: 1) Sources within 10 kilometers, 2) Sources within 15 kilometers, 3) Intermittent operating sources, 4) Sources impacting a monitor (Vicinity Monitor), and 5) Similar sources impacting a monitor (Regional Monitor).

i. Sources Within 10 Kilometers

As stated in District's policy entitled "Guidance for Determining Modeling Domain"², 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 a cumulative impact 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 cumulative impact 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 recommended 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 meters³ 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.

² District Web Link Here

³ EPA "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources Revised" (Oct 1992)

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

- 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.

iii. Intermittent Operating Sources

Based on the District's policy entitled "Guidance for Intermittent Operating Units"⁴ a unit that complies with this policy is exempt from all 1-hour NAAQS modeling unless otherwise determined to be required by the reviewing agency. Therefore it is recommended that the reviewing agency be consulted before exclusion of any unit.

iv. Sources Impacting a Monitor (Vicinity Monitor)

Source(s) that is/are considered to impact a nearby monitor and is assumed to be included in the monitor's reported concentration can be excluded from the cumulative impact assessment with approval of the reviewing agency. This is done to ensure that a pollutant's concentration is not double counted in the cumulative impact assessment. For example, the monitor is between the unit being exempted and the SIA. All sources should be reported in the PSD Modeling section/report including those sources excluded from modeling.

v. Similar Sources Impacting a Monitor (Regional Monitor).

In unique situations a nearby source may be exempted if it is determined that the selected monitor includes sources that are similar to the source being considered for exemption. For example, if after conducting an inventory of the sources impacting the selected monitor it is determined that similar sources, more than one, are included the reviewing agency may conclude; based on its professional judgment, to exempt that source from the cumulative impact assessment. To determine if a source is similar the following criteria should be used:

The proposed exempted unit is similar to those found in the inventoried units if:

- The operating schedules are similar
- The type and size of the equipment are equal to or greater in size
- The distance to the monitor is less than the proposed exempt unit is from the SIA.
- The general direction to the monitor is similar to the proposed exempt unit

⁴ District web link Here

Please Note: not all the above criteria must be met in order for the reviewing agency to determine if a source can be exempted.

d. Representative Background

The selection of the representative monitor is discussed in the District's policy entitled "Guidance for Selecting a Representative Monitoring Site"⁵. It is recommended that this policy be reviewed to ensure that the appropriate site is selected.

Please Note: Discussion on sources impacting a monitor is also included in the above noted policy.

VI. 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 cumulative impact 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 the cumulative impact assessment.

A source considered to operate intermittently can be exempted from 1-hour NAAQS modeling as long as it complies with the District policy entitled "Guidance for Intermittent Operating Units"⁶ or is otherwise not required y the reviewing agency.

VII. Guidance

When conducting PSD modeling the following procedures should be followed:

- Cumulative Impact 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.

⁵ District Web Link Here

⁶ District Web Link Here

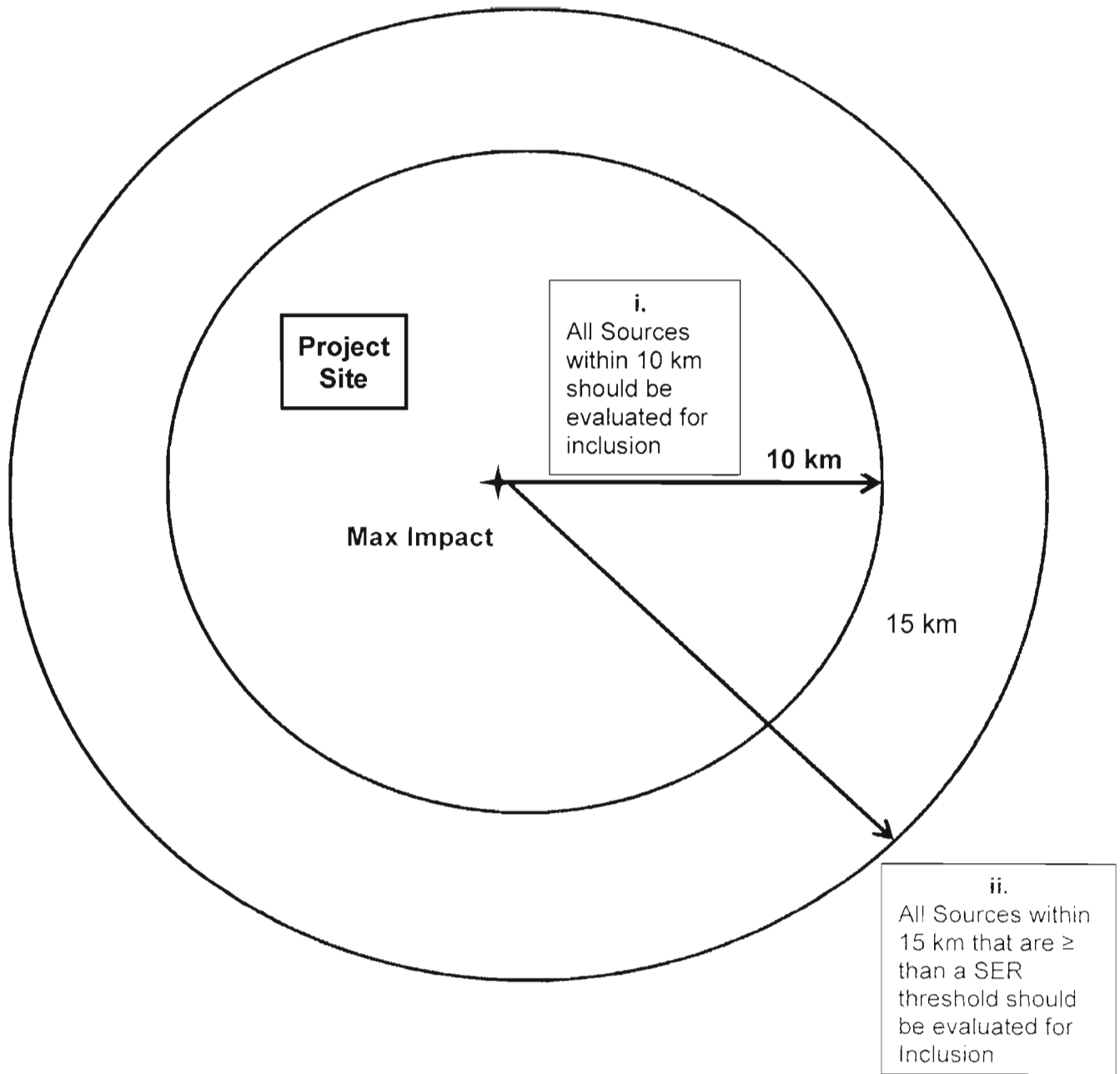


Figure 1 Cumulative Impact Model