

San Joaquin Valley  
Air Pollution Control District

APR - 1945

Policy for PSD Modeling  
District Rule 2410  
Guidance for Intermittent Operating Units

Approved By:

  
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Date: June 25, 2014

### I. Purpose

The purpose of this guidance is to provide the rationale for exempting intermittent operating units from conducting short term (1-hour) ambient air quality analysis for the national ambient air quality standard (NAAQS).

### II. Applicability

This guidance applies to all intermittent units that operate no more than 200 hour per year, do not have a set operating schedule specified on their Authority To Construct or Permit to Operate, and implement Best Available Control Technology (BACT).

If multiple intermittent units are operating within 100 meter of each other the cumulative impact of the intermittent units would require further evaluation. Therefore project's that consists of multiple intermittent units operating within 100 meter of each other are not covered under this policy.

### III. Definition

**Intermittent Operating Unit:** a unit that do not have a set operating schedule specified on their Authority To Construct or Permit to Operate, only operate short periods of time during the year, and meet BACT requirements. For example:

- A single emergency fire water pump driven by an approved tier diesel engine. This device must be tested for 30 minutes once per week to meet National Fire Protection Association codes,
- A single auxiliary generator at a power plant may operate only once per month for 60 minutes, as required by the original equipment manufacturer to ensure reliability.

## IV. Background

On March 1, 2011, EPA provided additional clarification on intermittent operating sources that allows the reviewing agency, at their discretion, to exempt intermitted units from NO<sub>2</sub> and SO<sub>2</sub> modeling requirements. The clarification memorandum can be found at:

[http://www.epa.gov/ttn/scram/Additional\\_Clarifications\\_AppendixW\\_Hourly-NO2-NAAQS\\_FINAL\\_03-01-2011.pdf](http://www.epa.gov/ttn/scram/Additional_Clarifications_AppendixW_Hourly-NO2-NAAQS_FINAL_03-01-2011.pdf).

**Please Note:** This memorandum was specifically written to address PSD compliance with the new NO<sub>2</sub> and SO<sub>2</sub> 1-hour NAAQS.

Guidance was also provided on how intermittent unit(s) could be included in a modeling regime, if requested by the reviewing agency, by calculating an annual average hourly emission rate. This annual hourly average emission rate would replace the maximum hourly emission rate provided by the manufacturer when performing modeling.

### For Example:

A 903 BHP emergency internal combustion engine is permitted to operate 200 hour per year for maintenance and test. The unit does not have a set operating schedule specified on their Authority To Construct or Permit to Operate. The manufacturer's maximum hourly NO<sub>x</sub> emissions rate is 4.2 g/BHP-hr or (1.054 g/sec).

### Calculation:

$$\begin{aligned} \text{AAER} &= \text{MER} * (\text{HrsOp} / \text{HrsYr}) \\ &= 1.054 \text{ g/sec} * (200 \text{ hrs} / 8760 \text{ hrs per yr}) \\ &= 0.024 \text{ g/sec (used in AERMOD)} \end{aligned}$$

### Where:

AAER = Annual average hourly emission rate (g/sec)  
MER = Maximum hourly emission rate provided by the manufacture (g/sec)  
HrsOp = Permitted hours of operation  
HrsYr = Hours in a year (Default 8760)

- The calculated AER value would replace the MER in AERMOD and;
- The unit(s) would be modeled for every hour of the year(s)

## V. Justification

The following section provides the rationale used by the District to determine that short term impact from intermittent sources would not cause or contribute to an exceedance of a NAAQS.

- a) It is unlikely that a unit would operate precisely during the hours of maximum (peak) modeled concentration. In fact, the maximum calculated probability that such event would occur is 2.34% based on 200 hours of operation. This probability only decreases as the number of hours of operation decrease. The probability range from

2.34% down to 0.57% is based on a maximum of 200 hours per year and a minimum of 50 hours per year.

i) Probability Calculation = (Probability / [Total Probability]-Probability) \*100

For Example (Maximum Concentration):

- Annual hours of Operation = 200 hours per year Or [Probability]
- Total Probability = 8760 Hour per year

$$\begin{aligned} \text{Probability Calculation} &= (200 / (8760-200)) * 100 \\ &= 2.34\% \end{aligned}$$

ii) This means that the operation of the unit has a 2.34% chance of occurring during an hour where the model would predict the peak concentration for a given time period.

b) Modeling using EPA's alternative calculation method, as noted in the March 1, 2011 memorandum, will reduce the modeled concentration ranging from 97.72% (200 hours per year) to 99.43% (50 hour per year).

## VI. Conclusion

Based on the information provided in section IV above, it is highly unlikely that intermittent operating units will cause or contribute to an exceedance of a short term (1-hour) NAAQS. Therefore, the District concurs with EPA's conclusion that modeling such units is not necessary, and will not require intermittent units, as defined above, to perform a short term (1-hour) NAAQS analysis for PSD permitting purposes.

## VII. Guidance

When evaluating intermittent units to determine if such units would cause or contribute to an exceedance of a NAAQS for PSD permitting purposes; staff will only evaluate pollutants that have NAAQS standards for 3, 8, 24, and annual. Short term (1-hour) impacts will not be required in a PSD evaluation. If short term (1-hour) impacts are evaluated in a PSD analysis, the guidance presented in in Section III above should be followed.

### **Note!!**

Short term (1 hour) standards may still need to be evaluated for non-attainment NSR projects such as CEQA, California AAQS, or special projects.