

STATE OF COLORADO

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Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
of Public Health
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Environmental Protection Agency
EPA Docket Center (EPA/DC)
Air and Radiation Docket
Mail Code 6102T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

August 6, 2007

Re: Docket ID No. EPA-HQ-OAR-2006-0888 (Refinement of Increment Modeling Procedures)

Dear Sir or Madam:

The Colorado Department of Public Health and Environment (CDPHE) appreciates the opportunity to comment on the Proposed Rule titled "Prevention of Significant Deterioration New Source Review: Refinement of Increment Modeling Procedures, published on June 6, 2007." CDPHE has shared WESTAR's concern about the ineffectiveness of the PSD program as the primary tool for managing air quality in attainment areas. Consequently, CDPHE supported WESTAR's 14 "Recommendations for Improving the Prevention of Significant Deterioration (PSD) Program" dated May 2005.

CDPHE welcomes clarification of the PSD provisions regarding PSD increment consumption. However, by providing permitting authorities with broad discretion in the choice of methods for quantifying actual emissions, by affirming that the guidance and procedures outlined in the draft 1990 New Source Review Workshop Manual are not binding, and by diminishing the role of 40 CFR 51 Appendix W, the procedures for PSD increment modeling are arguably less clear under this proposal than in the past. As currently proposed, the rule provides less protection of air quality in attainment areas and Class I areas, particularly for short-term PSD increments.

1. Exclusion of sources with a Class I variance from Class I increment consumption.
CDPHE does not support the proposed new provision in 50 CFR 51.166(f) to exclude from increment consumption "concentrations attributable to sources that obtained a permit based on a variance issued pursuant to paragraph (p)(4) of this section, but only with respect to the Class I increment in the area for which the variance was issued. Concentrations attributable

to such sources shall continue to be included in determining compliance with the maximum allowable increase set forth in paragraphs (p)(4).”

EPA’s proposal diminishes the usefulness of Class I increments as a tool to manage air quality and Air Quality Related Values (AQRVs) in Class I areas.

Section 163(c) of the Clean Air Act lists activities that, for purposes of determining compliance with increments, shall not be taken into account. The list does not include sources that receive variances under the PSD rules.

There are 5 sets of increments in the Clean Air Act. Section 163(b)(1-3) contains the Class I, II and III levels. The statutory language reads for each: “[f]or any class (I, II or III) area, the maximum allowable increase in concentration of (pollutant) over the baseline concentration shall not exceed the following....” The other 2 sets of increments are found in the context of the variance procedure under section 165(d)(2)(C)(iv) and section 165(d)(2)(D)(iii). The statutory language for those sections reads: “[i]n the case of a permit issued...such facility shall comply with such emission limitations under such permit as may be necessary to assure that emissions of...will not cause or contribute to concentrations of such pollutant which exceed the following maximum allowable increases over the baseline concentration for such pollutants....”

The distinction between the Class I, II and III increments and the variance/alternate increment is that the former is focused on the baseline area while the later is focused on the variance process for a given PSD permit application. While CDPHE agrees that, once a variance is granted, the alternate increment is used in the determination to grant or deny the permit, subsequent cumulative increment analyses for air quality management (e.g., periodic reviews) and PSD permitting purposes must consider the effect of all applicable changes in emissions, including emissions from PSD variance sources, on the Class I increment.

EPA’s proposal to permanently exclude a variance source from all future Class I increment analyses will make it more difficult to protect air quality in Class I areas. Consider, for example, a situation where a proposed PSD source violates the Class I increment but is granted a variance because the permitting action will not adversely impact AQRVs. Assume that, over the next 20 years, many more PSD sources are permitted, but each one is able to demonstrate compliance with the Class I PSD increments because emissions from the original variance source are excluded by rule from the analysis. In addition, assume the new sources are all granted PSD permits because, individually, they have de minimis AQRV impacts under federal guidance, but cumulatively they cause a problem when considered along with the variance source. Under this scenario, the exclusion of the variance source from future Class I increment modeling shifts the compliance burden from Class I increments to the AQRV analysis. This effectively weakens the PSD rules because, in practice, the

AQRV provisions are weaker than the Class I increment provisions. That is, as compared to a Class I increment analysis, it is much more difficult to develop a technically and legally defensible AQRV analysis. However, if modeling shows that a new source would violate an increment, there is a strong incentive for everyone to prepare a robust AQRV analysis because otherwise the permit must be denied. In the above example, if the variance source had been included in the Class I impact analysis for the new PSD sources, some of the new PSD sources might have significantly contributed to increment violations, which would trigger a more rigorous assessment of AQRVs, including the consideration of new data and advancements in science. Based on this example, EPA's proposal will hinder the ability of a state to manage AQRVs effectively under the PSD permitting program.

EPA asserts that the exclusion of the variance source from future Class I increment consumption analyses is acceptable because "...[e]ach successive source that impacts the Class I area would still have to show that it does not harm the AQRVs to receive a permit..." (31384, 2d col.). In reality, current AQRV thresholds are in guidance, only, and it is prohibitively expensive (and resource intensive) to perform a rigorous cumulative AQRV analysis for every PSD permit. Consequently, cumulative AQRV analyses are performed rarely. To complicate matters, even when cumulative analyses are done, AQRV analysis results can be difficult to interpret because the rules do not contain specific levels of concern. In practice, the Class I increments "...establish a presumption of harm or the absence of harm to AQRVs..." (31382, 3d. col.) and, when considered along with the other provisions to protect AQRVs, provide a strong regulatory mechanism for protecting AQRVs.

EPA's proposal will complicate the regulatory and permitting process and raise new issues. Under 51.166(p)(4), the short-term alternate increment must not be exceeded for any averaging period; whereas, under 51.166(c), the standard Class II increment "...may be exceeded during one such period per year at any one location." Consequently, under the proposal, future sources that significantly impact a Class I area would be required to demonstrate compliance with both the Class I increment and the alternate increment. But given the different design values (e.g., high vs. second-high concentration), the analysis would be more complex than typical increment modeling. This could lead to unexpected issues, particularly if a new source that is not subject to the variance caused the alternate increment to be exceeded.

Under current rules, the variance process, including the alternate increment, is restricted to the decision to issue or deny a given PSD permit. It is based on the understanding of AQRVs and PSD increments in a given Class I area at the time of the permit application. However, not only can our understanding of AQRVs change with time, but the actual impact of a given source on AQRVs can change with time due to the nature of the AQRV itself, including critical load considerations. In addition, the temporal and spatial interaction of physical and

chemical processes in the atmosphere can change with time in response to changes in the magnitude and location of emissions.

EPA states that “[s]ince a variance will not be issued unless the Class I FLM certifies that the emissions from a proposed source will not have an adverse impact on AQRVs, it is reasonable to omit the emission of such source from the increment consumption analysis for the Class I increment on an ongoing basis” (31384, 2d col.). Since the science behind the analysis for a given PSD permit variance may become dated and no longer accurate, it is not reasonable to omit the source from all future Class I increment analyses. EPA’s proposal permanently diminishes the usefulness of Class I increments as a tool to manage air quality in Class I areas.

EPA’s proposal excludes the variance source from Class I periodic increment studies performed outside the PSD permitting process. Similar to the PSD permitting process, the exclusion would hide the fact that Class I increment violations might be occurring due to new source growth. Consequently, the proposal appears to undermine the federal requirements under 40 CFR 51.166(a)(4) that “[t]he State shall review the adequacy of a plan on a periodic basis and within 60 days of such time as information becomes available that an applicable increment is being violated...” In other words, if a state conducts a periodic review of its plan 5 years after the variance source started operating, the EPA proposal would not allow the deterioration in air quality from the variance source to be considered then, or ever, in assessing the adequacy of its plan. Thus, it might appear as though that the plan is working, when it is not. A better solution would be to include the variance source in the periodic assessments of Class I increment analysis, but allow the state to make a fair and equitable decisions about how to address the increment violation in its plan.

In *Alabama Power v. Costle*, the Court discusses the “waiver” provision, which may allow an increment to be exceeded:

The waiver has vitality and recognition in that facilities granted special consideration under these provisions are, in effect, treated as facilities operating in compliance with the provisions of the Act. But the totality of facilities in compliance, as a group, may be subject to measures necessary to cope with a condition of pollutants exceeding the PSD maximum. (363).

EPA has “...previously acknowledged that this may be a permissible way to reconcile the FLM variance provisions with the requirement in § 51.166(a)(3) to amend SIPs to remedy an increment exceedance.” (31383, 2d. col.). However, EPA “...now recognize(s) that there may be more than one permissible reading of the Act on this issue.” (31383, 2d. col.). We have concerns with EPA’s decision to not follow a reading that has been interpreted by a Court in favor of one that is created purely within the agency without public or judicial vetting.

If an increment violation is found, the state is obligated under its management role to decide how to address that violation. Federal rules should not require a state to exclude a variance source from consideration when developing control strategies to address a Class I increment violation. Rather, federal rules should allow the state to exercise fair and equitable judgment.

2. Methods for determining increment consumption – actual emissions. The proposal to add an expanded definition of actual emissions to 51.166(f)(1) will promote inconsistency about what emission rates should be used in PSD increment analyses, particularly for short-term increments. The proposal should have guiding principals that clearly tie the averaging period of the increment to averaging period of the emission rates, except in unusual circumstances. The definition should require that the agency strive for consistency between baseline period and current period emissions. For example, using allowable short-term emissions for the baseline period and annual average actual emissions for the current period could significantly underestimate short-term increment consumption.

The draft 1990 NSR workshop manual, for example, provides clarity:

*For each short-term averaging period (24 hours and less), the change in the actual **emissions rate** for the particular averaging period is calculated as the difference between:*

- *the current maximum actual **emissions rate**, and*
- *the maximum actual **emissions rate** as of the minor source baseline date (or major source baseline date for applicable major stationary sources undergoing construction before the minor source baseline date).*

In each case, the maximum rate is the highest occurrence for that averaging period during the previous 2 years of operation.

While the proposal points out problems with the NSR workshop manual approach, the solution is worse. The proposal allows the use of annual average emission rates for short-term increment modeling, without clear guidance to ensure this is done uniformly or consistently. While the idea of using annual average actual emissions for determining short-term increment consumption could be technically defensible in situations where existing sources do not operate at maximum rates simultaneously, the approach may significantly underestimate actual maximum short-term emissions in other cases. In practice, increment compliance issues are often driven by a few sources. Consequently, in some cases nearby sources operate near their maximum actual emission rates at the same time. These are also the situations where the increment is most likely to be threatened.

While the rule allows states to use their discretion, it will do little to prevent disputes about the appropriate emission rate to use for a short-term increment consumption analysis.

In general, the level of flexibility in the proposal will lead to a host of new technical issues about which emission rate to use. While flexibility in technical decision-making is needed when generating a PSD increment inventory, the flexibility under current rules allows engineers and scientists to prepare technically defensible emissions estimates.

If the proposal is not improved significantly, states may be forced to develop their own policy interpretations of the federal rule, which will promote inconsistency and make cross-jurisdictional modeling studies more difficult to complete.

A better approach would be development of a federal guideline for preparing PSD increment inventories. Once the guideline was put into use, the modeling community and others could work with EPA to improve it and address technical issues. EPA could then consider rulemaking, if necessary, to make key aspects of the guideline binding.

3. Use of projected actual emissions for a new or modified source. (31391). CDPHE does not support EPA's proposal to use projected actual emissions in the context of a pending permit application to demonstrate that a new modification will not cause or contribute to an increment violation. EPA's proposal is a complete reversal from the 67 FR 80186 (December 31, 2002) NSR rule revisions that stated "when you must determine your source's compliance with the PSD increments following a major modification, you must still use the allowable emissions from each emission unit that is modified, or is affected by the modification." The 2002 NSR rule revisions rely on the calculation of annual average projected actual emissions, not short-term projected actual emission rates. Using projected annual actual emission rates to demonstrate compliance with short-term increments will not protect short-term increments. If EPA were to require the use of projected actual emissions for increment modeling, the requirement should be restricted to annual average increments. For short-term increments (e.g., averaging period of 24 hours or less), emissions for modeling should be based on potential to emit.
4. Conflicts with Appendix W. CDPHE does not support the proposal in 51.166(f)(1)(vii) that "to the extent any requirement of this paragraph (f)(1) conflicts with a recommendation in appendix W of this part, paragraph (f)(1) shall control." It is problematic for EPA to knowingly maintain multiple rules with conflicting language. Furthermore, Appendix W already provides extensive language on emission rates for modeling. It would make more sense to develop guidelines on actual emissions in the context of Appendix W than to promulgate the rule as proposed.
5. Meteorological models and data for increment consuming modeling. (31391). CDPHE strongly supports the development of additional guidelines for determining the appropriateness of prognostic meteorological model output data for use in dispersion models like CALPUFF and AERMOD.

6. Documentation and data and software availability requirements. (31393). CDPHE agrees that the current text of 40 CFR 51 Appendix W adequately defines the documentation and software availability requirements related to both preferred and alternative modeling techniques.
7. Evaluating the appropriateness of data years from prognostic meteorological models for modeling worst-case impacts. (31393). EPA has requested comment on the Appendix W guidance that previous years of meteorological data which have been used as the basis for permit emission limitations should be added to any subsequent period of meteorological data used for dispersion modeling. CDPHE supports the existing guidance. However, it is important to recognize that the guidance should be used judiciously, based on the goal of maintaining technically defensible emission limits. In practice, changes in modeling systems (e.g., ISCST3 to AERMOD) make it impossible or unreasonable, in some cases, to use meteorological data that was originally used in determining emission limitations. Similarly, it might not be technically defensible to require a source to use a year of outdated prognostic model data (e.g., 1990 MM4) in CALPUFF. On the other hand, in situations where the original meteorological data meets current modeling standards, it should be used unless it is clear that the newer meteorological data will provide a more technically correct emission limit because the data includes additional parameters that clearly improve model performance.
8. Four-step process in preamble for performing an increment analysis. The four-step process on page 31377 misinterprets some aspects of the increment analysis process. While it is clear that EPA wanted to provide a simple summary of the process, the four-step process should be clarified to better reflect existing guidance and practices.
 - a. Page 31377, column 1, Item #1 in list. The $1 \mu\text{g}/\text{m}^3$ significant impact level (SIL) applies to annual SO_2 , NO_2 , and PM_{10} Class II increments. It does not apply to other averaging periods or Class I areas. The reference to $1 \mu\text{g}/\text{m}^3$ should be removed to generalize the language for all pollutants, averaging periods, and area classifications (e.g., Class I and Class II areas). Without this change, the preamble language is inconsistent with existing rules and guidance.
 - b. Page 31377, column 1, Item #2 in list. The phrase “in the vicinity of the new or modified source” could be misinterpreted to suggest that the inventory must be centered around the source, only. In practice, the inventory may have more than one point of focus. For example, if the new or modified source significantly impacts a distant federal Class I area, the inventory for the Class I increment analysis should be centered on the affected Class I area.
 - c. Page 31377, column 1, Item #3 in list. Add “or expand” after “consume” since PSD increment can be consumed or expanded.

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- d. Page 31377, column 1, Item #4 in list. The phrase “Model the change in emissions to get a concentration change” is problematic. The statement “change in emissions” suggests that increment is affected by changes in emissions, only. In fact, changes in other parameters such as stack parameters, building downwash, and source locations also affect increment. If a phrase like “emission inventory” is used instead of “emissions,” the language properly conveys the fact that other aspects of the inventory are important. In addition, if the phrase “between baseline and recent periods” is added after “emissions,” the language will emphasize the fact that both the major and minor source baseline dates are important and that there is more than one way to model increment consumption/expansion. For example, while modeling only the “emissions inventory change” may be appropriate in some situations, it is sometimes necessary or desirable to determine increment consumption/expansion by modeling the “baseline” and “current” periods separately, as suggested on page 31376.

CDPHE urges EPA to work with the states as this proposal and any subsequent proposals and guidelines are developed.

Sincerely,



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