

Legal Support Memorandum
Application of Significant Impact Levels in the Air Quality Demonstration for
Prevention of Significant Deterioration Permitting under the Clean Air Act

Introduction

Under section 165(a)(3) of the Clean Air Act (CAA or Act), an applicant for a pre-construction permit under the Prevention of Significant Deterioration (PSD) program must “demonstrate ... that emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of any” National Ambient Air Quality Standards (NAAQS) or PSD increment. 42 U.S.C. § 7475(a)(3). The law is clear that such a demonstration must be made to obtain a PSD permit. *Sierra Club v. EPA*, 705 F.3d 458, 465 (D.C. Cir. 2013). However, the CAA does not specify how a PSD permit applicant or permitting authority is to determine whether a new or modified source will (or will not) cause or contribute to a violation of a NAAQS or applicable PSD increment. *Id.* Considering the relevant terms of the CAA and other factors discussed below, permitting authorities may elect to read section 165(a)(3) of the Act to be satisfied when a permit applicant demonstrates that the increased emissions from the proposed new or modified source will not have a significant or meaningful impact on ambient air quality at any location where a violation of the NAAQS or PSD increment is occurring or may be projected to occur. This reading may be based solely on the EPA’s historic interpretation of the phrase “cause, or contribute to,” as specifically used in the context of section 165(a)(3) of the CAA, without relying on the inherent authority to establish exemptions for *de minimis* circumstances.

Background

Congress gave the EPA responsibility in the CAA for determining the methods to be used by PSD permit applicants to show that proposed construction does not cause or contribute to a NAAQS or PSD increment violation.¹ Section 165(e) requires an analysis of “ambient air quality

¹ Section 165(a)(3) of the Act requires a showing that the applicant will not cause or contribute to air pollution “in excess of” the applicable NAAQS. The NAAQS are written using specific statistical forms, such as averages and/or percentile values across days, months and/or years. As a result, a set of air quality concentrations over a certain period is not considered “in excess” of a NAAQS unless the applicable statistical criterion for not meeting the NAAQS is satisfied. In order to distinguish a situation in which a set of air quality concentrations is “in excess” of the NAAQS from a single measurement or prediction that might exceed the numerical level of the NAAQS, the EPA typically uses the term “violation” to describe a period of air quality that is “in excess of” the standard, considering the statistical form of the standard. The term “exceedance” refers to a single measurement or prediction above the level of the NAAQS.

at the proposed site and in areas which may be affected by emissions from such facility” and directs the EPA to issue regulations that define the nature of this analysis. 42 U.S.C. § 7475(e). The regulations must “specify with reasonable particularity each air quality model or models to be used under specified sets of conditions” for purposes of the PSD program. In accordance with this authority, the EPA has promulgated regulations which identify such models and the conditions under which they may be used in the PSD program to make the demonstration required under section 165(a)(3) of the Act. 40 C.F.R. § 51.166(l); 40 C.F.R. § 52.21(l); 40 C.F.R. part 51, Appendix W (Guideline on Air Quality Models).

Using the models identified in the EPA regulations, there are two basic ways that a PSD permit applicant can demonstrate that the proposed source’s emissions will not cause or contribute to a violation of any NAAQS or PSD increment. One way is to demonstrate that no such violation is occurring or projected to occur in the area potentially affected by the emissions from the proposed source. A second way is to demonstrate that the emissions from the proposed source do not cause or contribute to any violation of the NAAQS or PSD increments that is identified.

Analysis

Together, two aspects of the CAA reflect congressional intent to leave a gap for the EPA to fill in determining the precise meaning of the phrase “cause, or contribute to” in the context of section 165(a)(3) of the Act. First, as discussed above, section 165(e) of the Act directs the EPA to define the nature of the analysis that is necessary to make the demonstration required under section 165(a)(3) of the Act. Second, the phrase “cause, or contribute to” and the included terms “cause” and “contribute” are not defined in section 169, section 302 or any other part of the CAA. The EPA and other PSD permitting authorities may reasonably infer that Congress’s silence “is meant to convey nothing more than a refusal to tie the agency’s hands” as to the degree of air quality impact necessary to “cause, or contribute to” air pollution in excess of air quality standards under section 165(a)(3) of the CAA. *See Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 222 (2009).

The United States Court of Appeals for the District of Columbia Circuit has observed that the term “contribute” is ambiguous. *Catawba County, N.C. v. EPA*, 571 F.3d 20, 38-39 (D.C. Cir. 2009). In this case, the court considered the use of this term in section 107(d) of the CAA,

which governs EPA actions to designate specific areas as in attainment or nonattainment with the NAAQS. Under this provision, a nonattainment area must include any area that does not meet the NAAQS or “that contributes to ambient air quality in a nearby area that does not meet” the NAAQS. The Petitioners argued that the EPA was required to interpret the word “contribute” in this context to require a “significant causal relationship” in order to include a nearby area in a nonattainment area. The Petitioners also argued that the EPA must establish a quantified amount of impact that qualifies as a contribution before the EPA could include a nearby area in a nonattainment area. *Id.* The court held that “section 107(d) is ambiguous as to how the EPA should measure contribution and what degree of contribution is sufficient to deem an area nonattainment.” Consequently, the Court held that the EPA was not compelled to apply the Petitioners’ preferred meaning of the term “contribute” in the context of section 107(d). The court recognized that the EPA had the discretion to interpret the term “contribute” in section 107(d) of the Act to mean “sufficiently contribute” and that the EPA could use a multi-factor test, rather than a quantified threshold, to determine when a nearby area contributed to nonattainment.

Similar to section 107(d) of the Act, section 165(a)(3) is ambiguous with regard to the degree of air quality impact that is necessary to conclude that increased emissions from an individual source will “contribute to” a violation of a NAAQS or PSD increment. In the absence of specific language in section 165(a)(3) regarding the degree of contribution that is required (such as the term “significantly”), the reasoning of the *Catawba County* opinion supports the view that the EPA has the discretion under this provision to exercise its judgment to determine the degree of impact that “contributes” to adverse air quality conditions based on the particular context in which the term “contribute” is used. *See*, 571 F.3d at 39. Furthermore, this opinion supports EPA’s discretion in implementing section 165(a)(3) to identify criteria or factors that may be used to determine whether something “contributes” (including qualitative or quantitative criteria), as long as the Agency provides a reasoned basis to justify using such criteria to represent a “contribution.”

In the particular context where contribute is used in the PSD permitting program, this part of the CAA does not prohibit all proposed construction that increases emissions. Rather, the program contemplates that increased emissions resulting from construction or modification of major stationary sources may be authorized after verifying that the proposed construction will

incorporate state-of-the-art pollution controls and that the operation of the new or modified major source will not result in unhealthy levels of air pollution (or significantly increase air pollutant concentrations) in the affected area. The PSD program required by Congress is specifically designed to prevent “significant” deterioration of air quality, not all deterioration of air quality. Further, one goal of the PSD program is to “insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources.” 42 U.S.C. § 7470(3). Thus, the PSD program strikes a balance that allows construction and modification of major stationary sources that will result in increased emissions, but only after appropriate safeguards are in place to prevent significant deterioration of existing clean air resources.

In light of these considerations, the inclusion of the phrase “cause, or contribute to” in section 165(a)(3) of the Act indicates that Congress intended for the reviewing authority to exercise some judgment in the course of reviewing a permit application. Section 165(a)(3) of the Act does not say a source must show it has “no impact” on a predicted violation. Instead, this provision says the source must show it does not “cause, or contribute to” a violation. This choice by Congress militates against reading section 165(a)(3) to mean that any degree of projected impact (no matter how small) must be considered to contribute to a predicted violation of the NAAQS or PSD increment. Under such a reading, the permitting authority need not exercise any judgment. A source could only qualify for a permit by showing that there would be no violation of the NAAQS or PSD increment in the area affected by the source or that emissions from the source have no projected impact whatsoever on any area where the NAAQS or PSD increment is already or predicted to be exceeded. If Congress had intended in section 165(a)(3) to preclude permitting authorities from exercising discretion to determine the degree of impact that equals a contribution, it would have used a less ambiguous term or specified that no degree of impact on a predicted violation is permissible.

In addition, Congress explicitly recognized that air quality models would be needed to make the showing required under section 165(a)(3) to obtain a PSD permit, and directed the EPA to specify such models in regulations. 42 U.S.C. § 7575(e)(3). Given their mathematical nature, models used for this purpose under the PSD program are capable of predicting small increases in air pollutant concentrations. In order for the “cause or contribute” language in section 165(a)(3) to be implementable as a practical matter in permitting, there must be some point at which a projected air quality impact from a proposed new or modified source becomes so small that PSD

permitting authorities may reasonably conclude that such an impact does not cause, or contribute to, an existing or predicted violation of air quality standards.

Furthermore, the PSD permitting requirements in part C of Title I of the Act are one of many required elements of a State Implementation Plan (SIP) under section 110 of the Act. *See generally* 42 U.S.C. 7410(a)(2). The PSD permitting requirements are specifically incorporated as one of these elements under section 110(a)(2)(C) of the Act. The focus of the PSD program is on controlling increased emissions from the construction and modification of large stationary sources, while other provisions under section 110(a)(2) require states to target emissions from existing sources. Where air quality concentrations are high in a specific area because of sources already in operation, section 110 and other provisions of the Act provide tools for addressing this existing pollution through a SIP. In this context, where existing sources have already caused air quality to very nearly approach or even exceed a NAAQS, it is not necessary to construe the PSD provisions to require a permit applicant to show that increased emissions will have absolutely no effect on air quality concentrations. The goals of the PSD program are achieved by demonstrating that increased emissions from construction or modification of the source will be controlled to the point that these emissions will not have a meaningful impact on air quality in the affected area, while looking to other aspects of a SIP to address emissions from existing sources that bear responsibility for high levels of air pollution in the area.

Recognizing this, the EPA has previously supported the use of concentration values called “significant impact levels” (SILs) to represent the point below which the impact of increased emissions from a new or modified major source on ambient air quality does not cause or contribute to a violation of the NAAQS or PSD increment. 61 Fed. Reg. 38250, 38293 (July 23, 1996).² At the same time, where a violation is nevertheless predicted in the course of

² The historic use of a quantified threshold for this purpose in the PSD program differs from the EPA’s practice of using a multi-factor test to define “contribution” in the context of designations under section 107(d) of the CAA. *See Catawba County, N.C. v. EPA*, 571 F.3d 20, 38-39 (D.C. Cir. 2009). While this case held that a quantified threshold is not required to define contribution in the context of section 107(d), the court’s reasoning does not preclude PSD permitting authorities from choosing to use a quantitative level of impact to represent a contribution to a violation of the NAAQS or PSD increment when implementing section 165(a)(3) of the Act. For purposes of implementing section 165(a)(3) of the Act, the EPA has found it more expedient and practical to use a quantitative threshold (expressed as a level of change in air quality concentration) to determine whether increased emissions from proposed construction or modification of a source will contribute to air quality concentrations in excess of applicable standards. Under the reasoning of *Catawba County*, using a quantified threshold for this purpose is permissible as long as the EPA or the appropriate permitting authority provides a reasoned explanation for why impacts below that threshold do not constitute a contribution to a violation in this context.

the PSD permitting process, EPA has emphasized the need to address the source of such air pollution problem through a SIP under section 110 of the Act, rather than preventing construction that will not meaningfully add to the adverse conditions. *See* Memorandum from Gerald A. Emison, EPA OAQPS, to Thomas J. Maslany, EPA Air Management Division, EPA Region 3, “Air Quality Analysis for Prevention of Significant Deterioration (PSD)” (July 5, 1988).

This practice in the PSD program has been based, in part, on an interpretation by EPA that the phrase “cause, or contribute to” in section 165(a)(3) does not to apply to an “insignificant” impact. In this context, EPA has used the term “insignificant” to describe a degree of impact that is “trivial” or “*de minimis*” in nature. Conversely, in this context, the EPA has described an impact that is greater than “trivial” or “*de minimis*” as a “significant impact,” which the EPA has represented quantitatively using the values called “significant impact levels.” As expressed by the EPA’s Environmental Appeals Board (EAB), “EPA has long interpreted the phrase ‘cause, or contribute to’ to refer to significant, or non-*de minimis*, emission contributions.” *In re Prairie State Generating Co.*, 13 E.A.D. 1, 105 (EAB 2006). Based on a review of the plain terms of the CAA in context, the EAB reasoned in this case that “the requirement of an owner or operator to demonstrate that emissions from a proposed facility will not ‘cause, or contribute to’ air pollution in excess of a NAAQS standard must mean that some non-zero emission of a NAAQS parameter is permissible.” *Id.* at 104. The EAB also illustrated how this historic interpretation of section 165(a)(3) of the Act “is reflected in both applicable EPA regulations and in long-standing EPA guidance.” *Id.*

One example of such an EPA regulation was section 10.2.3.2(a) of the EPA’s Guideline on Air Quality Models (40 C.F.R. Part 51, Appendix W). This provision of Appendix W addressed proposed sources “predicted to have a significant ambient impact” and called for permitting authorities, in evaluating whether the source will cause or contribute to an air quality violation, to consider “the significance of the spatial and temporal contribution to any modeled violation.” The EPA has recently proposed to revise and reorganize the Guideline on Air Quality Models, and an examination of whether a proposed source has a “significant ambient impact” is reflected in several sections of the proposed Guideline. 80 Fed. Reg. 45340 (July 29, 2015) (*see* sections 4.2(c), 8.1.2(a), and 9.2.3(a)).

In a 1988 guidance memorandum, the EPA said that “a PSD source will not be considered to cause or contribute to a predicted NAAQS or PSD increment violation if the source’s estimated air quality impact is insignificant (i.e. at or below defined de minimis levels).” Memorandum from Gerald A. Emison, EPA OAQPS, to Thomas J. Maslany, EPA Air Management Division, EPA Region 3, “Air Quality Analysis for Prevention of Significant Deterioration (PSD)” (July 5, 1988). Extending this logic, in 1990, the EPA also said that a permit applicant may demonstrate that it will not cause or contribute to air pollution in violation of any NAAQS or PSD increment by showing that the “proposed source will not result in a significant ambient impact anywhere.” 1990 NSR Workshop Manual, C.51 (Oct. 1990). More specifically, the EPA has generally considered it sufficient for an applicant to demonstrate that the source’s emissions alone have an insignificant impact on air quality in the area outside a facility fence line that is defined as “ambient air.” *See In the Matter of Hibbing Taconite Co.*, 2 E.A.D. 838 (Adm’r 1989); NSR Workshop Manual at C.42, C.52.

In this context, the EPA has often equated an insignificant impact with one that is trivial or *de minimis* in nature. In some instances, the intent of such statements by the EPA has been to justify an exemption to the requirement in section 165(a)(3) of the CAA based on the agency’s inherent authority to exempt *de minimis* circumstances from regulation. *See Alabama Power v. Costle*, 636 F.2d 323, 361-63 (D.C. Cir. 1980). After initially proposing in 1996 to add SILs to its PSD regulations but not taking final action on that regulation proposal, the EPA proposed such a regulation in 2007 for only the PM_{2.5} pollutant and finalized that rule in 2010. 75 Fed. Reg. 64864 (Oct. 10, 2010).³ In that rule, the EPA said that “the concept of a SIL is grounded on the de minimis principles described by the court in *Alabama Power*.” *Id.* at 64891. The EPA repeated this statement in a subsequent administrative order where the EPA also said that the Agency “has interpreted the de minimis doctrine to generally support use of the SILs ... for

³ In response to a challenge to the 2010 PM_{2.5} SILs regulation in the District of Columbia Circuit, EPA requested that the court remand and vacate two of the EPA’s SILs regulations for PM_{2.5} so that EPA could correct an inconsistency between the inflexible terms of the regulation and EPA’s exhortation in the record that permitting authorities should exercise discretion before using these values in some circumstances to justify the conclusion that a source does not cause or contribute to a violation of the NAAQS. *Sierra Club*, 705 F.3d at 463-64. The court then vacated these two PM_{2.5} SIL provisions adopted in 2010 “because they allow permitting authorities to automatically exempt sources with projected impacts below the SILs from having to make the demonstration required under 42 U.S.C. §7475(a)(3) even in situations where the demonstration may require a more comprehensive air quality analysis.” *Id.* at 465. The court said that “[o]n remand, the EPA may promulgate regulations that do not include SILs or do include SILs that do not allow the construction or modification of a source to evade the requirement of the Act as do the SILs in the current rule.”

purpose of determining whether a proposed source or modification contributes to predicted violation of a NAAQS.” Order Responding to Petitioner’s Request that the Administrator Object to Issuance of a State Operating Permit, In the Matter of CF&I Steel, L.P. dba EVRAZ Rocky Mountain Steel, Petition Number VIII-2011-01, at 15-17 (May 31, 2012) (“Rocky Mountain Steel Order”). This order referenced two prior opinions of the EAB that referenced the discussion of the *de minimis* doctrine in the D.C. Circuit’s opinion in *Alabama Power*. In the first of these opinions, the EAB observed that “Courts have long recognized that EPA has discretion under the Clean Air Act to exempt from review some emissions increases on the grounds of *de minimis* or administrative necessity.” *Prairie State*, 13 E.A.D. at 104 (internal quotations omitted). However, as discussed above, in this same opinion, the EAB also described how the EPA has interpreted the phrase “cause, or contribute to” to refer to significant emission contributions. *Id.* at 105.

Considering EPA’s longstanding and permissible interpretation of the phrase “cause, or contribute to” in section 165(a)(3) and the intended role and function of SILs, it was unnecessary for the EPA to reference its inherent *de minimis* exemption authority in these actions to justify the conclusion that an insignificant impact does not cause or contribute to a violation of the NAAQS or PSD increment within the meaning of section 165(a)(3) of the Act. As historically used on a permit-by-permit basis prior to the 2010 rule, the air quality concentration levels that the EPA has identified as SILs have not functioned to exempt a source from making the demonstration required by section 165(a)(3) of the Act. Rather, these concentration levels have been used by PSD permit applicants and permitting authorities as a means of making the air quality impact demonstration required by section 165(a)(3). To determine that its increased emissions will not exceed these concentration values, a new or modified source must conduct air quality modeling to determine the degree of impact the source will have on air pollutant concentrations. If the applicant thereby shows that its increased emissions do not have a significant impact on air pollutant concentrations, EPA and other permitting authorities have concluded that the applicant has made a demonstration that its increased emissions will not cause or contribute to any air pollutant concentrations that exceed the relevant NAAQS or PSD increment.

The EPA has previously communicated this view that the statutory requirement in section 165(a)(3) of the Act may be satisfied by showing that a source does not have a significant impact

on air pollutant concentrations. In its 2007 proposal of the PM_{2.5} SILs, the EPA said that when “a source can show that its emission alone will not increase ambient concentrations by more than the SILs, the EPA considers this to be a sufficient demonstration that a source will not cause or contribute to a violation of the NAAQS or increment.” 72 Fed. Reg. 54112, 54139 (Sept. 21, 2007). The EPA has subsequently expressed similar thoughts in a guidance memorandum. *See e.g.*, Memorandum from Acting Director of Air Quality Policy Division to Regional Air Division Directors, *General Guidance for Implementing the 1-hour NO₂ National Ambient Air Quality Standards in Prevention of Significant Deterioration Permits, Including an Interim 1-hour NO₂ Significant Impact Level*, at 11 (June 28, 2010) (“2010 NO₂ Guidance”). In the 2012 Rocky Mountain Steel Order described above, the EPA observed that a “SIL was a means of demonstrating through modeling that the source’s impact at the time and place of the predicted violation will be sufficiently low that such impact will not contribute to that violation.”

Although the EPA also referenced its inherent authority to establish a *de minimis* exception to a statutory requirement in these same documents, it was unnecessary for the agency to do so because the phrase “cause, or contribute to” in section 165(a)(3) of the Act is reasonably read not to apply to insignificant impacts on air quality. Likewise, in order to show that a particular degree of change in concentration is insignificant in this context, it is not necessary to make the showing required to establish a *de minimis* exception from a statutory requirement – that the burdens of regulation yield a gain of trivial or no value. Rather, when a concentration value (which may be described as a SIL) is used to quantify the point below which a new or modified source does not cause, or contribute to, a violation of the NAAQS or PSD increment, it is sufficient for the EPA or a state permitting authority to justify the value as a level below which an impact on air quality may be regarded as not significant or meaningful. In general terms, a trivial or *de minimis* impact on air quality may be considered “insignificant,” but the use of a SIL to identify such a level in the PSD program need not be based on inherent agency authority to establish a *de minimis* exception to section 165(a)(3) of the Act. The statutory language in this provision is reasonably construed in context not to apply to an insignificant impact on air quality.

While use of a SIL in PSD permitting need not be based on an agency’s inherent authority to establish a *de minimis* exception to a statutory requirement, any value used as a SIL must be supported by an appropriate record showing that impacts below that level will not cause, or contribute to, a violation. Thus, in the context of a case-by-case decision by a permitting

authority to issue a PSD permit and to use a specific SIL value in making the demonstration required in section 165(a)(3) of the Act, such permit must be supported by a record showing that the SIL value is representative of a level below which the projected impact of a proposed new or modified stationary source is insignificant. *See* Rocky Mountain Steel Order at 18; 2010 NO₂ Guidance at 11.