ORAL ARGUMENT NOT YET SCHEDULED

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 18-1167

SIERRA CLUB,

Petitioner,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, and ANDREW WHEELER, ADMINISTRATOR,

Respondents.

ON PETITION FOR REVIEW OF ACTION BY THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PROOF BRIEF OF RESPONDENTS

JEFFREY BOSSERT CLARK
Assistant Attorney General
JONATHAN D. BRIGHTBILL
Deputy Assistant Attorney General

BRIAN H. LYNK
U.S. Department of Justice
Environment & Natural Resources Division
Environmental Defense Section
P.O. Box 7611
Washington, D.C. 20044
(202) 514-6187

OF COUNSEL:
BRIAN DOSTER
MARK KATAOKA
U.S. Environmental Protection Agency
Office of General Counsel
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dated: March 18, 2019

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to Circuit Rule 28(a)(1), Respondent United States Environmental Protection Agency ("EPA" or the "Agency") states the following:

A. Parties, Intervenors, and Amici

All parties to this case are listed in petitioner's brief.

B. Rulings Under Review

Petitioner seeks review of a memorandum from Peter Tsirigotis, Director of EPA's Office of Air Quality Planning and Standards, dated April 17, 2018, titled "Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program."

C. Related Cases

None at present.

/s/ *Brian H. Lynk*
Brian H. Lynk
United States Department of Justice
Environment & Natural Resources Div.
Attorney for Respondents

Dated: March 18, 2019

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GLOSSARY

CAA	Clean Air Act
EPA	United States Environmental Protection Agency
JA	Joint Appendix
NAAQS	National Ambient Air Quality Standards
$PM_{2.5}$	Fine particulate matter (particles 2.5 micrometers and smaller in diameter)
PSD	Prevention of Significant Deterioration
SILs	Significant impact levels
$\mu g/m^3$	Micrograms per cubic meter

INTRODUCTION

Sierra Club's petition should be denied. EPA's non-binding "Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program" ("SILs Guidance" or "Guidance") is not final agency action. (JAxx).[1] On its face, the Guidance merely provides technical and legal advice to PSD permitting authorities. It does not alter regional and state-delegated case-by-case decision-making discretion on permit applications. Petitioners' facial challenge is thus unripe. Petitioners must await the actual application of this Guidance—in the context of actual facts—should it ever be applied in a manner Petitioners think problematic.

If the Court does reach the merits of Petitioners' facial challenge, EPA's Guidance reasonably facilitates implementation of Congress' statute. The Guidance concerns "significant impact levels" or "SILs." This tool is commonly used to make an air quality demonstration required to obtain a "Prevention of Significant Deterioration" ("PSD") permit under the Clean Air Act, 42 U.S.C. § 7475(a)(3). The Guidance is also accompanied by two primary supporting

[1] *See* Memorandum from Peter Tsirigotis, EPA's Director of the Office of Air Quality Planning and Standards, to EPA's Regional Air Division Directors (April 17, 2018) (JAxx).

documents explaining at greater length, respectively, the legal and technical bases for the recommendations in the Guidance.[2] As is reflected in these documents, EPA appropriately used its expertise to develop methods to help demonstrate that a proposed PSD source will not "cause, or contribute to" a violation of ambient air quality standards. *See* 42 U.S.C. § 7475(a)(3).

STATEMENT REGARDING JURISDICTION

Petitioner Sierra Club invokes jurisdiction under the Clean Air Act ("CAA" or "Act"), 42 U.S.C. § 7607(b)(1). *See* Opening Brief of Petitioner at 1 ("Pet. Br.") (Doc. No. 1759508). As explained in Arguments I and II below, jurisdiction over Petitioner's facial challenges is lacking because the challenged Guidance is not a final agency action and is not ripe for review.

STATUTES AND REGULATIONS

The pertinent statutes and regulations are set forth in a separate addendum.

[2] *See* "Legal Memorandum: Application of Significant Impact Levels in the Air Quality Demonstration for [PSD] Permitting under the Clean Air Act" ("Legal Memorandum" or "Memorandum") (JAxx); "Technical Basis for the EPA's Development of the Significant Impact Thresholds for $PM_{2.5}$ and Ozone" ("Technical Basis Document" or "Technical Basis") (JAxx).

STATEMENT OF ISSUES

1. Whether the Court has jurisdiction to review a guidance statement concerning permitting that is not the final step in an Agency rule-making process, but rather provides recommendations to permitting authorities of legal and technical analysis rather than binding determinations, and thus leaves ultimate decision-making on each permit application to the exercise of those permitting authorities' discretion in a manner reviewable elsewhere?

2. If the Court has jurisdiction, whether the Act is ambiguous regarding the degree of air quality impact from a proposed PSD source that will "cause, or contribute to" a violation, and whether EPA has reasonably interpreted that statutory phrase in light of the text, purposes and structure of the Act?

3. If the Court has jurisdiction, whether the significant impact levels recommended by the Guidance are a reasonable exercise of EPA's statutory authority to specify air quality models and the conditions under which they may be used by a permit applicant to "demonstrate" that its proposed construction will not "cause, or contribute to" a violation?

STATEMENT OF THE CASE

I. STATUTORY BACKGROUND

Congress enacted the CAA, 42 U.S.C. §§ 7401-7671q, in 1970 "to respond[] to the growing perception of air pollution as a serious national problem," *Alabama*

Power v. EPA, 636 F.2d 323, 346 (D.C. Cir. 1980), by establishing a comprehensive program for controlling and improving the Nation's air quality. *NRDC v. Gorsuch*, 685 F.2d 718, 720-21 (D.C. Cir. 1982). As part of the 1977 Amendments to the CAA, Congress codified the PSD program, 42 U.S.C. §§ 7470-79, which requires a permit prior to constructing a new "major" stationary source of air pollutants or modifying an existing one (commonly called a "preconstruction permit"). The PSD program is designed to protect the Nation's air quality in areas in which the air is relatively clean, while assuring economic growth consistent with such protection. *See* 42 U.S.C. § 7470. In addition to requirements relating to the six "criteria pollutants" covered by the National Ambient Air Quality Standards ("NAAQS") established under 42 U.S.C. § 7409, the PSD program requires that these preconstruction permits limit emissions of any air pollutant regulated under the CAA, other than hazardous air pollutants. *Id.* § 7475(a)(4).

A "major emitting facility" subject to PSD is defined as any stationary source that emits or has the potential to emit 100 or 250 tons per year (depending on the type of source) of any air pollutant. 42 U.S.C. § 7479(l); *see also id.* § 7479(2)(C) (governing modifications). Such facilities may not begin construction or make modifications in any area covered by the PSD program (an area designated attainment or unclassifiable for any NAAQS), without first obtaining a

PSD permit. *Id.* § 7475(a)(1); *see also* 40 C.F.R. §§ 52.21(a)(2)(iii), 52.21(b)(1), (2), (49) (50); *Utility Air Regulatory Group v. EPA*, 572 U.S. 302, 309 (2014).

States are required to develop and submit for EPA approval state implementation plans. Each plan must contain emission limitations and other control measures to ensure that the NAAQS are achieved and maintained. 42 U.S.C. §§ 7407(a), 7410(a)(1)-(2); *see Lead Indus. Ass'n v. EPA*, 647 F.2d 1130, 1137 (D.C. Cir. 1980). EPA reviews each submitted plan for compliance with the applicable provisions of the Act. *Louisiana Envtl. Action Network v. EPA*, 382 F.3d 575, 578-79 (5th Cir. 2004); 42 U.S.C. § 7410(k). The Act's PSD provisions are among those that the plans must address. 42 U.S.C. § 7410(a)(2)(C).

A PSD permit applicant must demonstrate that emissions from construction or operation of the applicant's proposed facility

> will not cause, or contribute to, air pollution in excess of any (A) maximum allowable increase or maximum allowable concentration for any pollutant in any area to which this part applies more than one time per year, [or] (B) national ambient air quality standard in any air quality control region.

42 U.S.C. § 7475(a)(3). The "maximum allowable increase" of an air pollutant is a marginal level of increase above a defined baseline concentration and is known as the PSD "increment." 75 Fed. Reg. 64,864, 64,868 (Oct. 20, 2010); 72 Fed. Reg. 54,112, 54,116 (Sept. 21, 2007); *see* 42 U.S.C. § 7473.

Section 7475(e)(3) authorizes EPA to promulgate regulations regarding the ambient air quality analysis required for PSD review, including rules that "specify with reasonable particularity each air quality model or models to be used under specified sets of conditions for purposes of this part." *Id.* § 7475(e)(3)(D). Over time, EPA has promulgated regulations setting forth detailed requirements for States to implement the PSD program, *see* 40 C.F.R. § 51.166, and has issued guidance to provide further implementation assistance. EPA also has established regulations for federal implementation of the PSD program in states that lack an EPA-approved PSD program in their state implementation plan. *Id.* § 52.21. However, the permitting process is implemented principally at the state level; over 40 states presently have an EPA-approved PSD program.[3]

II. REGULATORY BACKGROUND AND PRIOR LITIGATION REGARDING SIGNIFICANT IMPACT LEVELS

A. EPA's Regulations and Existing Policy Regarding the Use of Screening Tools Such as Significant Impact Levels in the PSD Permitting Process

As noted above, the Act directs EPA, *inter alia*, to specify air quality modeling for use in the PSD program. 42 U.S.C. § 7475(e)(3)(D). EPA has published a Guideline on Air Quality Models (the "Guideline"), which was

[3] *See* https://www.epa.gov/caa-permitting/caa-permitting-your-region (information on state PSD delegations is provided in each EPA region's webpage).

updated most recently in 2017. *See* 40 C.F.R. Pt. 51, App. W; 82 Fed. Reg. 5182, 5183-84, 5192 (Jan. 17, 2017). EPA's PSD regulations require modeling to be based on the Guideline. 40 C.F.R. §§ 51.166(*l*)(1), 52.21(*l*)(1). The Guideline identifies air quality models and modeling techniques for use in PSD air quality assessments. *Id.* Pt. 51, App. W, §§ 1.0.a, 5.3.2, 5.4.2; Guidance at 6 (JAxx).[4]

A fundamental principle of air quality modeling under the Guideline is that an air quality analysis generally should begin with relatively simple screening techniques or models. These provide conservative estimates of air quality impact, followed, as appropriate, by more complex and refined techniques or models that provide more precise estimates of air quality impact. 40 C.F.R. Pt. 51, App. W, §§ 2.2, 4.2.1, 4.2.2. With respect to PSD permit review, the Guideline states:

> [I]n the context of a PSD permit application, a simplified and conservative analysis may be sufficient where it shows the proposed construction clearly will not cause or contribute to ambient concentrations in excess of either the NAAQS or the PSD increments.

Id. § 2.2.a.

The Guideline also explains that the EPA may establish a "demonstration tool or method" as a means for a permit applicant to make a required air quality demonstration, either by itself or as part of a modeling

[4] EPA also issued guidance on $PM_{2.5}$ modeling in May 2014. *Id.* at 2 n.7 (JAxx).

demonstration. But, to be used for regulatory purposes, such a tool or method must be "reflected in a codified regulation or have a well-documented technical basis and reasoning that is contained or incorporated in the record of the regulatory decision in which it is applied." *Id.* § 2.2.e.

Consistent with these principles, EPA has historically used pollutant-specific concentration values known as "significant impact levels" as a demonstration tool. SILs identify the degree of air quality impact that either would or would not "cause, or contribute to" a violation of a NAAQS or PSD increment, for purposes of PSD permitting. EPA has previously issued guidance describing particular uses of SILs. *See* Guidance at 1 nn.1-4 (JAxx). None of these guidance documents were legally binding, and none were subject to a judicial challenge.

EPA has used the values in 40 C.F.R. § 51.165(b)(2) to determine what does (and does not) "cause, or contribute to" a violation in the context of section 7475(a)(3). EPA originally promulgated this regulation in 1987. 52 Fed. Reg. 24,672, 24,713 (July 1, 1987). Under this regulation, a proposed source seeking to operate in an attainment area will be considered to "cause, or contribute to" a violation of the NAAQS if its emissions impact would exceed specific values identified in the regulation. Over time, the air quality concentration "significance levels" specified in the regulation have become known as "significant *impact*

levels" or SILs, when used as part of an air quality demonstration in a PSD permit application. *See* Guidance at 9 (JAxx).

EPA also has supported using these values to show the inverse—*i.e.*, that air quality impact below such a value *does not* cause or contribute to a violation. But prior to 2010, EPA had not incorporated this idea into a regulation. This left permitting authorities with discretion to consider the inverse implication of SILs on a case-by-case basis.

Consistent with EPA guidance, SILs historically have been used, inter alia: (1) as part of a preliminary, single-source analysis that considers only the impact of the proposed source in the PSD permit application on air quality to determine whether a full (i.e., cumulative) impact analysis is necessary to assess whether the source would cause or contribute to a violation; and (2) as a part of a cumulative impact analysis which also considers the impact of existing sources as well as background concentrations. *See, e.g.*, 75 Fed. Reg. at 64,890; 61 Fed. Reg. 38,250, 38,293 (July 23, 1996). In the second context, EPA has supported using SILs to show that a proposed source is not "culpable" for a violation of the NAAQS or increment that might be predicted in an attainment area. This occurs through a cumulative source impact analysis on the total impacts of the proposed new or modified source and other sources in the area. 75 Fed. Reg. at 64,890; *In re Prairie State Generating Co.*, 13 E.A.D. 1, 103-09 (EAB 2006); *see also* Guidance

at 5 (JAxx) (citing other examples). EPA proposed to codify these uses of SILs into the PSD regulations in 1996, 61 Fed. Reg. at 38,291-93, but took no final action on that proposed rule.

B. Prior Rulemaking and Litigation Concerning $PM_{2.5}$ Significant Impact Levels

In 2010, EPA codified the use of the SILs described above for $PM_{2.5}$ by amending paragraph (k)(2) of the PSD regulations at 40 C.F.R. §§ 51.166 and 52.21. EPA also incorporated $PM_{2.5}$ values into its preexisting table of significance values at 40 C.F.R. § 51.165(b)(2). *See* 75 Fed. Reg. at 64,866, 64,902. However, EPA failed to recognize an inconsistency between the inflexible terms of part of the regulation and EPA's preamble statement. The preamble stated that, in some circumstances, permitting authorities should exercise discretion before using these values to justify the conclusion that a source does not cause or contribute to a violation of the NAAQS.

Recognizing this inconsistency only after a petition for review was filed, EPA asked this Court to vacate and remand the (k)(2) paragraphs of both PSD regulations so EPA could make a correction. *Sierra Club v. EPA*, 705 F.3d 458, 463-64 (D.C. Cir. 2013). The Court noted EPA's statement in its brief that the regulatory text it adopted "does not allow permitting authorities the discretion to require a cumulative impact analysis, notwithstanding that the source's impact is

below the SIL, where there is information that shows the proposed source would lead to a violation of the NAAQS or increments." *Id.* at 464. The Court then vacated the (k)(2) paragraphs "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 stated 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." *Id.* at 464. The Court left intact the $PM_{2.5}$ NAAQS significance levels separately promulgated at 40 C.F.R. § 51.165(b)(2), which were not challenged. *See Sierra Club,* 705 F.3d at 465-66; Guidance at 7 (JAxx).

III. THE CHALLENGED GUIDANCE

Following the litigation over the 2010 rule, EPA initially began developing a new rule. It subsequently elected to proceed with a two-step approach, with issuance of non-binding guidance as the first step. On August 1, 2016, EPA posted on the web and sought informal public comment on a draft of the Guidance, as

well as a draft Legal Memorandum and draft Technical Basis.[5] EPA explained that, having identified in the draft Guidance a revised set of SIL values based on technical and legal analysis, the Agency "believes it should first obtain experience with the application of these values in the permitting program before establishing a generally applicable rule." Draft SILs Guidance at 2 (JAxx); *accord* Guidance at 2 (JAxx). EPA further explained that it is providing non-binding guidance "so that we may gain valuable experience and information as permitting authorities use their discretion to apply and justify the application of the SIL values identified below on a case-by-case basis in the context of individual permitting decisions." *Id.* EPA then planned in a later second step to "use this experience and information to assess, refine and, as appropriate, codify SIL values and specific applications of those values in a future, potentially binding rulemaking." *Id*; *see also SEC v. Chenery*, 332 U.S. 194, 202 (1947).

EPA received twenty sets of public comments. Certified Index at D.40-59 (Doc. No. 1743895). EPA also conducted an external peer review of the draft Technical Basis. Guidance at 11 n. 40 (JAxx). EPA issued final versions of the Guidance, Legal Memorandum, and Technical Basis on April 17, 2018, with revisions and clarifications in response to the public and peer review comments.

[5] EPA substituted a corrected version of the draft Guidance on August 16, 2016.

The recommended SIL values, as well as the overall policy, legal, and technical approaches, were unchanged from the 2016 draft Guidance. EPA's technical approach is summarized below.[6]

A. EPA's Statistical Basis for the Recommended SILs

The SILs Guidance identifies numerical SIL values for the $PM_{2.5}$ and ozone NAAQS, and for the $PM_{2.5}$ PSD increments. Guidance at 15-17 (JAxx).[7] These values, unlike the $PM_{2.5}$ SIL values in the 2010 rulemaking or any other SILs used in the past, are based on a new EPA statistical analysis. This provides an improved analytical foundation for the EPA's selection of SIL values that permitting authorities may elect to use on a case-by-case basis to represent "an insignificant impact on air pollutant concentrations" in air quality analyses for PSD permitting. *Id.* at 10 (JAxx).

To develop the recommended, non-binding SILs for ozone and $PM_{2.5}$ in the Guidance, EPA assessed the variability in ambient ozone and $PM_{2.5}$ pollutant concentrations independently. This was determined through analysis of 17 years of monitoring data from the national air quality monitoring network, using the "design value" at each monitor. Guidance at 12 (JAxx). Because each NAAQS

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[6] EPA's legal analysis is described in Argument III *infra*.

[7] No PSD increments have been established for the ozone NAAQS. *Id.* at 16 (JAxx).

has a unique statistical form, it is necessary to derive a design value at a monitor, which is a statistic or summary metric for a specific NAAQS that describes the air quality at a location relative to the level of the NAAQS in the appropriate statistical form, based on (for the ozone and $PM_{2.5}$ NAAQS) the most recent three years of monitored data. Technical Basis at 5-6 (JAxx). For example, for the ozone NAAQS, the design value at a monitor location at a given time is the 3-year average of the annual 4th-highest daily maximum 8-hr average ozone concentration. An air quality monitor meets the ozone NAAQS if the design value is less than or equal to the ozone standard of 70 parts per billion. *Id.* at 8 (JAxx); *see also id.* (describing design values for the $PM_{2.5}$ NAAQS).

EPA used a well-established statistical approach known as "bootstrapping." This enables an analyst to quantify the uncertainty of a statistical sample, making it easier to interpret the data. Technical Basis at 6-7 (JAxx). This technique was applied to the ambient data from the 1,708 ozone and the 1,773 $PM_{2.5}$ monitoring stations over a 17-year period (2000-2016). EPA determined the air quality variability as a function of the design values reported by this nationwide air quality monitoring network. *Id.* at 9-10 (JAxx).

EPA's statistical analysis determined, for each air quality monitor in the national network (based on ambient data from that monitor), a range of "confidence intervals." These are "statistical measures of the variability associated

with the monitor-based [design values], to inform the degree of air quality change that can be considered an 'insignificant impact' for PSD applications." *Id.* at 7 (JAxx). The fundamental concept behind this approach is that "an anthropogenic perturbation of air quality that is within a specified range may be considered indistinguishable from the inherent variability in the measured atmospheric concentrations and is, from a statistical standpoint, *not significant* at the given confidence level." *Id.* (emphasis in original).

EPA applied the bootstrapping analysis to the ambient data such that the specific forms and data handling requirements of each NAAQS were accounted for in the variability estimates. Technical Basis at 21 (JAxx). The analysis determined 20,000 potential design values for each of the 1,708 ozone and 1,773 $PM_{2.5}$ monitors for each consecutive 3-year design period in the 17 years analyzed. These 20,000 samples allow for an estimate of the range of air quality variability, with the 25%, 50%, 68%, 75% and 95% confidence intervals calculated for each monitoring site and each 3-year design period representing various levels of variability based on the selected confidence interval. *Id.* at 22-23 (JAxx). Each confidence interval is associated with a range of air quality variability that becomes narrower as the stated percentage decreases—e.g., a 75% confidence interval represents a narrower range of variability than 95%. The variability estimates at each confidence interval were aggregated for each design period and

compared across the range of baseline design values in order to characterize the behavior of the variability as underlying air quality changed. *Id.* at 25-28 (JAxx). Additionally, the variability determined from the bootstrapping analysis was compared to the variability in air quality as determined by comparing design values from pairs of monitors that were geographically close to one another. *Id.* at 29-34 (JAxx); *see also id.* at 35-37 (JAxx).

After deriving these variability estimates across a range of confidence intervals, EPA then sought to identify one of these estimates that could be used to determine a degree of air quality impact that would be *not* statistically significant (and thus could represent an impact that would not "cause, or contribute to" a violation of the NAAQS or PSD increment). To do this, EPA considered four factors. *See* Technical Basis at 38 (JAxx); Guidance at 13-14 (JAxx).

First, EPA considered which confidence interval would best represent the inherent variability in measured ozone and $PM_{2.5}$ atmospheric concentrations. Technical Basis at 38 (JAxx). EPA observed that the 68% confidence interval corresponds to one standard deviation from the mean value (here, the "design value" as described above), which in statistics is traditionally regarded as the minimum deviation above which a deviation from the mean would be considered statistically significant. *Id.* at 38-39 (JAxx). Because EPA's purpose was to identify a value below which variability in air quality concentrations could be

considered *not* statistically significant, EPA reasoned that it should use a confidence interval smaller than 68%. *Id.* at 39 (JAxx). But EPA then had to determine how much smaller—whether to use the values based on the 50% or 25% confidence interval. EPA found that a 50 percent confidence interval "represents a protective approach for a SIL value because it is sufficiently within the 68 percent [interval], while still being sufficiently higher than zero such that it can be a useful compliance demonstration tool for the PSD permitting process." Guidance at 13 (JAxx).

Second, EPA considered whether to calculate the 50% confidence interval as an absolute amount of change or as a relative percentage of change from the design value at each monitoring location. Technical Basis at 39 (JAxx). EPA chose relative variability because that metric was "fairly consistent across the range of design values" at monitoring sites nationwide, irrespective of baseline air quality level and other variables. *Id.*

Third, EPA considered whether to recommend national SIL values based on aggregate air quality variability or local or regional SILs based on statistical analysis at particular sites or in particular regions. Technical Basis at 39-40 (JAxx). EPA's analysis showed that there were no large scale (i.e., region-to-region) trends, with few instances of regional patterns in air quality variability, and no strong instances of east/west or north/south trends. *Id.* at 40 (JAxx). For this

and other reasons, EPA recommended national values. *Id.*; *accord* Guidance at 13-14 (JAxx).

Finally, EPA considered whether to use all of the air quality data available from 2000 through 2016, or only a subset. Technical Basis at 40 (JAxx). EPA observed that using a recent subset of the data would generally result in lower SIL values (due to less air quality variability) and also would enable the SILs to "reflect the most representative state of the atmosphere." Accordingly, EPA used the average of the three most recent design value periods to calculate the SILs. *Id.*; *accord* Guidance at 14 (JAxx).

B. The SIL Values Calculated by EPA

Applying each of the above methodological determinations, EPA's Guidance recommends the following SIL values for the ozone and $PM_{2.5}$ NAAQS:

Pollutant (averaging period)	NAAQS level	Recommended SIL
Ozone (8-hour)	70 parts per billion	1.0 part per billion
$PM_{2.5}$ (24-hour)	35 $\mu g/m^3$	1.2 $\mu g/m^3$
$PM_{2.5}$ (annual)	12 $\mu g/m^3$ (primary) or 15 $\mu g/m^3$ (secondary)	0.2 $\mu g/m^3$

See Guidance at 15 (JAxx). For the 24-hour $PM_{2.5}$ NAAQS, EPA preliminarily derived a SIL value of 1.5 $\mu g/m^3$ using the statistical approach summarized above.

But as EPA explained, the Agency remains bound by the 2010 regulatory provisions at 40 C.F.R. § 51.165(b)(2) that were not vacated and are still in effect, under which a $PM_{2.5}$ air quality impact above 1.2 $\mu g/m^3$ is deemed to cause or contribute to a violation of the 24-hour $PM_{2.5}$ NAAQS at any location that does not meet this standard. Guidance at 15 (JAxx).

For $PM_{2.5}$ PSD increments, EPA developed SILs using the same air quality variability approach, but differentiated between areas of the country designated "Class I" under the Act—i.e., areas in which "the need to prevent deterioration of air quality is the greatest," and which have smaller PSD increments as a result—from other areas. Guidance at 16-17 and n.43 (JAxx). As shown below, the Guidance conservatively recommends lower SIL values for $PM_{2.5}$ PSD increments in Class I areas than the recommended SIL values for the corresponding $PM_{2.5}$ NAAQS. In Class II and III areas, the recommended SILs for the $PM_{2.5}$ NAAQS and PSD increments are identical:

Criteria Pollutant (averaging period)	PSD Increments[8]			Recommended SIL		
	Class I	Class II	Class III[9]	Class I	Class II	Class III
$PM_{2.5}$ (24-hour)	2 $\mu g/m^3$	9 $\mu g/m^3$	18 $\mu g/m^3$	0.27 $\mu g/m^3$	1.2 $\mu g/m^3$	1.2 $\mu g/m^3$
$PM_{2.5}$ (annual)	1 $\mu g/m^3$	4 $\mu g/m^3$	8 $\mu g/m^3$	0.05 $\mu g/m^3$	0.2 $\mu g/m^3$	0.2 $\mu g/m^3$

C. EPA's Explanation Regarding the Use of The Guidance and Permitting Authorities' Discretion

EPA discussed in the SILs Guidance its recommended uses of the Guidance and the decision-making discretion that PSD permitting authorities retain. EPA "recommends that permitting authorities consider using these SIL values for ozone and $PM_{2.5}$ on a case-by-case basis at the same points in the PSD air quality analysis as SIL values historically have been used in the PSD program [with one exception not relevant here]." Guidance at 17-18 (JAxx). However, "permitting authorities

[8] Table 2 in Petitioner's Proof Opening Brief inadvertently errs in presenting the PSD increment values. *Id.* at 17; *see* 40 C.F.R. § 51.166(c)(1); *id.* § 52.21(c); 75 Fed. Reg. at 64,865.

[9] There are currently no areas designated as Class III. Guidance at 17 (JAxx).

retain the discretion not to use SILs as described here, either in specific cases or programmatically." *Id.* at 19 (JAxx). Permitting authorities "are also not precluded from developing and using lower SIL values than recommended in this guidance," or higher SIL values than those recommended for the ozone NAAQS or $PM_{2.5}$ PSD increments (as neither is addressed by the 2010 rule provision concerning $PM_{2.5}$ NAAQS "significance values" in 51.165(b)(2) that this Court left in place).[10]

In contrast to the regulatory text in the 2010 rule that was vacated by this Court, where a SIL is used and the modeled air quality impacts from a proposed PSD source are below the SIL, the Guidance nonetheless states that:

> [U]pon considering the permit record in an individual case, if a permitting authority has a basis for concern that a demonstration that a proposed source's impact is below the relevant SIL value at all locations is not sufficient to demonstrate that the proposed source will not cause or contribute to a violation, then the permitting authority should require additional information from the permit applicant to make the required air quality impact demonstration.

Guidance at 18 (JAxx). The Guidance further makes clear that "[t]he case-by-case use of SIL values should be justified in the record for each permit," and that the

[10] Under the 2010 rule, any air quality impact greater than the significance values codified at 40 C.F.R. § 51.165(b)(2) in 2010 for $PM_{2.5}$ is deemed to cause or contribute to a violation of the $PM_{2.5}$ NAAQS at any location that does not meet the standard, for purposes of PSD permitting. *See* Guidance at 7 (JAxx).

record for any PSD permitting decision using a SIL recommended in the Guidance should fully incorporate the information contained in the Guidance, including the technical and legal documents. *Id.* at 19 (JAxx); *accord* 40 C.F.R. Pt. 51, App. W, § 2.2.e.

STANDARD OF REVIEW

Petitioners bear the burden of demonstrating that the Court has subject-matter jurisdiction. *Kokkonen v. Guardian Life Ins. Co.*, 511 U.S. 375, 377 (1994); *Moms Against Mercury v. FDA*, 483 F.3d 824, 828 (D.C. Cir. 2007). The "case-or-controversy" requirement of Article III of the Constitution must be satisfied at all stages of the litigation. *Steel Co. v. Citizens for a Better Env't*, 523 U.S. 83, 94-95 (1998).

If there is jurisdiction, the CAA sets forth the standard of review, which is the same as that in the Administrative Procedure Act, 5 U.S.C. § 706(2)(A). *Catawba County, N.C. v. EPA*, 571 F.3d 20, 41 (D.C. Cir. 2009) (citations omitted). The Court considers whether EPA's action was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 42 U.S.C. § 7607(d)(9)(A). The Court "must affirm the Rule if the record shows EPA considered all relevant factors and articulated a 'rational connection between the facts found and the choice made.'" *Catawba*, 571 F.3d at 41 (citing *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962)). EPA is also entitled to an

"extreme degree of deference [] when it is evaluating scientific data within its technical expertise." *City of Waukesha v. EPA*, 320 F.3d 228, 247 (D.C. Cir. 2003) (internal quotation marks omitted). "Such deference is especially appropriate in [the Court's] review of EPA's administration of the complicated provisions of the Clean Air Act." *Catawba*, 571 F.3d at 41 (citation omitted).

In reviewing EPA's interpretation of the Act, the Court must inquire whether Congress "has directly spoken to the precise question at issue" and, if so, must give effect to Congress' "unambiguously expressed intent." *Chevron, U.S.A., Inc. v. NRDC*, 467 U.S. 837, 842-43 (1984). If the statute is "silent or ambiguous with respect to the specific issue," the Court considers "whether the agency's answer is based on a permissible construction," *id.* at 843, and "may not substitute its own construction . . . for [EPA's] reasonable interpretation." *Id.* at 844.

SUMMARY OF ARGUMENT

The Guidance is not a final agency action subject to this Court's review, as it does not establish any new binding legal norm. SILs have been used for decades, consistent with EPA regulations, in making the air quality demonstration that is required of a PSD permit applicant. The Guidance does not alter how SILs have historically been used in that context. Rather, it identifies new SIL values for $PM_{2.5}$ and ozone based on an improved statistical and analytic approach and

recommends that PSD applicants and permitting authorities apply those values in making the required demonstration.

Additionally, the Guidance is supported by a more robust legal justification of how the use of SILs comports with applicable statutory provisions and case law. The Guidance only makes *recommendations* and supplies a supporting rationale that states and EPA field offices may elect to use in their PSD permitting decisions. The Guidance is *not* binding in any particular permit application review, has no legal effect, and does not substitute for or reduce the discretion that individual permitting authorities have in reviewing each PSD permit application and in making permitting decisions subject to review. The decision each PSD permitting authority makes must stand or fall on the record developed in that permitting proceeding and based on the justification that the permitting authority provides. The Guidance does not purport to and in fact does not, merely by its issuance, "authorize" any particular decision by a permitting authority. As such, the Guidance is not a reviewable final action, and the issues Petitioner seeks to raise will not be ripe unless and until they arise in the context of a specific PSD permitting decision. *See infra* Arguments I, II.

On the merits (Argument III), EPA's interpretation of the "cause, and contribute to" language in 42 U.S.C.§ 7475(a)(3) is consistent with the Court's case law finding that the term "contribute" does not have a plain and obvious

meaning and is ambiguous in the context of air pollutant emissions. EPA reasonably interprets the language to allow permitting authorities to conclude that modeled air quality impacts below the recommended SILs, based on consideration of the facts in each permitting action and the statistical analysis developed by EPA, do not cause or contribute to a violation in the modeled area. EPA thoroughly explained the statistical methodology underlying the recommended SIL values. Petitioner fails to overcome the extreme deference owed to EPA regarding the development of that methodology.

ARGUMENT

I. THE GUIDANCE IS NOT FINAL AGENCY ACTION.

The Clean Air Act's judicial review provision states, in pertinent part, that "nationally applicable regulations promulgated, or [any other] final action taken, by the Administrator under this chapter" is subject to review. 42 U.S.C. § 7607(b)(1). EPA did not "promulgate" the Guidance as a "regulation[]", but rather wrote informal Guidance consistent with its stated aim of giving non-binding recommendations.[11] Thus, the Guidance is reviewable only if it is "other . . . *final* action." *Id.* § 7607(b)(1) (emphasis added); *see Portland Cement Ass'n v. EPA*, 665 F.3d 177, 193 (D.C. Cir. 2011). This finality inquiry is governed by the

[11] Petitioner has not mounted any procedural challenge to the Guidance.

familiar two-part test in *Bennett v. Spear*, 520 U.S. 154 (1997). Under *Bennett*, to be final, an action "must be one by which rights or obligations have been determined, or from which legal consequences will flow," and "must mark the consummation of the agency's decisionmaking process . . . it must not be of a merely tentative or interlocutory nature." *Id.* at 177-78 (internal quotations and citations omitted). The Guidance meets neither criterion.

A. The Guidance Does Not Have Binding Legal Consequences or Conclusively Determine Rights or Obligations.

When deciding whether guidance statements "determine rights or obligations," this Court has considered factors including: (1) "most important[ly,] . . . the actual legal effect (or lack thereof) of the agency action in question on regulated entities"; (2) "the agency's characterization of the guidance"; and (3) "whether the agency has applied the guidance as if it were binding on regulated parties." *National Mining Ass'n v. McCarthy*, 758 F.3d 243, 253 (D.C. Cir. 2014). Here, all of these factors weigh against finality.

1. The Guidance has no legal effect on regulated entities.

As to the Guidance's "actual legal effect . . . on regulated entities": it has none. The Guidance contains recommended SIL values that "permit applicants and permitting authorities may elect to use," and supporting legal and technical analyses that "permitting authorities may choose to adopt [as well as the Guidance

itself]" in supporting the use of the SILs in particular PSD permitting actions. Guidance at 1 (JAxx). In advance of a planned future EPA SILs rulemaking, decisions on whether to allow the use of SILs in PSD permitting actions are made under existing statutory and regulatory PSD permitting requirements by individual permitting authorities. They "retain discretion whether to apply SILs as a general matter, or in particular permitting actions." *Id.* at 10 (JAxx). EPA explicitly stated in the Guidance that "[s]ince this guidance is neither a final determination nor a binding regulation, permitting authorities retain the discretion not to use the SILs as described here, either in specific cases or programmatically." *Id.* at 19 (JAxx). Permitting authorities also may develop and justify the use of different SIL values than those the Guidance recommends, supported by a record showing that "the value represents a level below which a proposed source does not cause or contribute to a violation of the NAAQS or PSD increment." *Id.* at 19-20 (JAxx).

Contrary to Petitioner's claims, *e.g.*, Pet. Br. at 13, the Guidance does not in any legal or regulatory sense "authorize" a determination that any specific proposed source will not cause or contribute to a violation. Legal requirements in the Clean Air Act and EPA's regulations for the issuance of PSD permits, including the "demonstration" requirement of 42 U.S.C. § 7475(a)(3), remain wholly unchanged by the Guidance. And, apart from its general complaints about

"authorization," Petitioner does not show that the Guidance is written or has been applied in a binding manner.

Petitioner contends that the Guidance has legal effect based on its understanding that "EPA's rationale for SILs . . . departs from any prior [legal] approach EPA has taken to the PSD permitting process." Pet. Br. at 18. Petitioner exaggerates. While it is true that some prior EPA actions (such as the 2010 rule) relied on *de minimis* authority for allowing the use of SILs, EPA has recognized in many such actions the alternative legal basis that "cause, or contribute to" could be construed not to apply to insignificant air quality impacts. *See* Memorandum at 13 n.9 (JAxx). Moreover, the "finality" of a legal interpretation does not turn solely on whether it is "new"; rather, the question under *Bennett* is whether PSD permitting authorities are *required* to adopt or implement the interpretation.[12] As EPA's above-quoted explanations of the Guidance's effect makes clear, they are not. *See National Mining Ass'n*, 758 F.3d at 252 (holding that a guidance statement was not final action because, "[a]s a matter of law, state

[12] Although Petitioner has not expressly challenged the Guidance on the ground of failure to follow rule-making procedures (and has therefore waived any such challenge), its argument echoes the logic of the now-overruled *Paralyzed Veterans* doctrine. *See Perez v. Mortgage Bankers Ass'n*, 135 S. Ct. 1199, 1206-07 (2015) (abrogating *Paralyzed Veterans of Am. v. D.C. Arena, L.P.*, 117 F.3d 579 (1997), and holding that interpretive rules are not subject to Administrative Procedure Act notice-and-comment requirements even if the interpretation is new).

permitting authorities . . . may ignore EPA's . . . Guidance without facing any legal consequences"; *Holistic Candlers & Consumers Ass'n v. FDA*, 664 F.3d 940, 944 (D.C. Cir. 2012) (FDA warning letter not final because it did not compel action by the recipient or agency).

The Guidance also does not establish any new norms with respect to the process by which PSD permit applicants may make the demonstration that a proposed source "will not cause or contribute." Instead, it recommends that permitting authorities consider using the SILS EPA developed "*at the same points* in the PSD air quality analysis as SIL values historically have been used in the PSD program [with one irrelevant exception]." Guidance at 17 (JAxx) (emphasis added). Thus, for example, the Guidance did not "establish" a "new" demonstration procedure by recommending that "permitting authorities may use SILs in a preliminary analysis 'that considers only the impact of the proposed source on air quality,'" Pet. Br. at 13. SILs have been used in that manner in the PSD permitting process since at least 1988. *See* Memorandum from Gerald A. Emison to Thomas J. Maslany, "Air Quality Analysis for [PSD]" (July 5, 1988) (JAxx); *see also* Memorandum at 1 n.1, 9-10 (JAxx); 40 C.F.R. Pt. 51, App. W, § 9.2.3; *Sur Contra La Contaminacion v. EPA*, 202 F.3d 443, 448 (1st Cir. 2000) (upholding EPA's reliance on SILs). In short, the Guidance does not create a new and binding legal regime.

2. EPA did not characterize the Guidance in binding terms.

This Court has also given weight to EPA's own characterization of its guidance statements when considering whether they constitute final action. "[A]n agency pronouncement will be considered binding as a practical matter if it . . . appears on its face to be binding." *Catawba County*, 571 F.3d at 33. By this measure, as well, the SILs Guidance plainly is not a final agency action. The Guidance expressly states that "[s]ince this guidance is neither a final determination nor a binding regulation, permitting authorities retain the discretion not to use SILs as described here, either in specific cases or programmatically." *Id.* at 19 (JAxx); *see also id.* at Cover Memo, 3. (JAxx, xx).

More specifically, permitting authorities "retain the discretion to use other values that may be justified separately from this guidance as levels of insignificant impact," including values lower than those EPA recommends; or they may elect "programmatically" not to use SILs in PSD analysis at all. *Id.* at 19-20 (JAxx); *see also id.* at 4 (JAxx) ("The experience of permitting authorities using these SILs on a case-by-case basis, or in choosing to limit or forego their use in specific situations, will be valuable information for the EPA"). Thus, contrary to the types of guidance statements that courts have held to be judicially reviewable, the SILs Guidance is expressed in terms that make clear repeatedly and throughout the document that EPA did not intend to foreclose the discretion of permitting

authorities. *See National Mining Ass'n*, 758 F.3d at 252-53 (finding that guidance was not final action where "the caveats" regarding its effect "r[a]n throughout the document" and it was "devoid of . . . commands," and contrasting *Appalachian Power Co. v. EPA*, 208 F.3d 1015, 1023 (D.C. Cir. 2000)).

Both *Catawba County* and *National Mining Ass'n* are instructive cases. *Catawba County* involved challenges to an EPA memo that "provide[d] guidance to State and local air pollution agencies . . . on the process for designating areas for purposes of implementing the [$PM_{2.5}$ NAAQS]." 571 F.3d at 33 (quoting memo). It then "explicitly state[d] that it [wa]s 'not binding' on the states or EPA and note[d] that it provide[d] only EPA's 'current views' on the designation process suggesting that those views were open to revision." *Id.* at 33-34. The court concluded that such language did not "impose binding duties on states or the agency." *Id.* at 34. Here, likewise, the SILs Guidance plainly states that permitting authorities "retain the discretion to apply and justify different approaches and to require additional information from the permit applicant to make the required . . . demonstration, consistent with the relevant PSD permitting requirements." Guidance at 4 (JAxx).

National Mining Ass'n involved challenges to an EPA guidance document providing recommendations to States concerning National Pollutant Discharge Elimination System permits under the Clean Water Act. 758 F.3d at 247-48, 250.

Despite that guidance document's express assurances that it was not binding, the petitioner "argue[d] that permit applicants (and state permitting authorities) really have no choice when faced with EPA 'recommendations' except to fold," *id.* at 253, a claim Petitioner echoes here.[13] The Court reasoned, however, that "while regulated parties may feel pressure to voluntarily conform their behavior because the writing is on the wall about what will be needed to obtain a permit, there has been no order compelling the regulated entity to do anything." 758 F.3d at 253; *accord Panhandle Producers & Royalty Owners Ass'n v. Econ. Regulatory Admin.*, 822 F.2d 1105, 1110 (D.C. Cir. 1987) ("An agency pronouncement is not deemed a binding regulation merely because it may have some substantive impact, as long as it leaves [the relevant decisionmaker] free to exercise his [or her] informed discretion."). Similarly, here, the fact that some permitting authorities have chosen to use the Guidance does not establish that it is legally binding.

Finally, the Court re-emphasized in *National Mining Ass'n* the longstanding rule that "[w]hen [an] agency applies a [general statement of] policy in a particular situation, it must be prepared to support the policy just as if the policy statement had never been issued." 758 F.3d at 253. The SILs Guidance is faithful to this

[13] One of Petitioner's standing declarants asserts that "permitting authorities and applicants have already been relying on" the Guidance. Declaration of Mary Anne Hitt at 12 (DEC0019).

rule, instructing permitting authorities that "the case-by-case use of SILs values should be justified in the record for each permit." Guidance at 19 (JAxx). It further instructs that "[t]o ensure an adequate record, any PSD permitting decision that is based on this guidance (including the technical and legal documents) should incorporate the information contained in them" as well as any additional relevant information. *Id.* In short, under *Catawba County and National Mining Ass'n*, the SILs Guidance is not final action.

3. EPA has not applied the SILs as if they were binding.

On the remaining factor this Court has identified—whether the Agency has applied its guidance as if it were binding—Petitioner's assertions also fall short of the mark. *See National Mining Ass'n*, 758 F.3d at 253. Even assuming that "EPA plans to use SILs in its administration of PSD permitting" in States and areas without an approved PSD program in their state implementation plan, Pet. Br. at 13, Petitioner points to no evidence (beyond its bare assertion) that EPA has actually applied the Guidance inflexibly. On its face, the Guidance preserves the Agency's discretion regarding what degree of modeling or analysis may be necessary in some case-by-case circumstances. *See* Guidance at 3 (JAxx) ("EPA believes that the application of these SILs in the manner described below would be sufficient in *most* situations for a permitting authority to conclude that a proposed

source will not cause or contribute to a [ozone or $PM_{2.5}$] violation") (emphasis added).

For example, while Petitioner cites the approval of the Palmdale Energy Project permit as an instance in which EPA followed the rationale in the Memorandum, Hitt Decl. at 13 (DEC0031), in that decision EPA decided not to rely solely on single-source analysis using SILs. Instead, EPA performed cumulative modeling analysis of $PM_{2.5}$ air quality impacts. Attachment A at 57-58.[14] EPA also noted that its air quality assessments for other criteria pollutants were "justified and appropriate even without any consideration of or comparison to" the SILs for those pollutants. DEC0143.

B. The Guidance Did Not Mark the Consummation of EPA's Rulemaking Process for SILs.

The Guidance also is not final action because issuing the Guidance neither ends the process EPA has undertaken in response to the Court's partial vacatur and remand of the 2010 rule, nor does its application unalterably lead to determinations that PSD facilities will not "cause or contribute" to a violation.

[14] EPA Region 9, "Fact Sheet, Palmdale Energy Project, PSD Permit: SE 17-01" (Aug. 2017) (JAxx).

As to the development of the Guidance itself, EPA explains it "intends at this point to take a two-step approach." *Id.* at 2 (JAxx). First, "EPA is providing non-binding guidance so that we may gain valuable experience and information as permitting authorities use their discretion to apply and justify the application of the SILs values identified below on a case-by-case basis . . . ." *Id.* Second, "EPA will use this experience and information to assess, refine and, as appropriate, codify SIL values and specific applications of those values in a future, potentially binding rulemaking." *Id.*; *see also* RIN 2060-AR28 (JAxx) (EPA's Fall 2018 regulatory agenda, noting that "[b]ased on the information gathered from the implementation of [the SILs Guidance] by the permitting authorities, EPA will complete a rulemaking action, as appropriate").

EPA indicated that it will consider whether the case-by-case permitting experience "has confirmed that the recommended SIL values are suitable in all circumstances to show that an increase in air quality concentration below the value does not cause or contribute to a violation." Guidance at 3 (JAxx). However, pending that, EPA's Guidance cannot, by itself, be the basis for a permit decision. EPA emphasized permitting authorities' discretion "to develop alternative SIL values," including SILs based on different confidence intervals or taking into account regional or local factors. *Id.* Thus, the content of a future proposed rulemaking for ozone and $PM_{2.5}$ SILs, let alone a final regulation, is undetermined.

See SEC v. Chenery, 332 U.S. at 202 ("Not every principle essential to the effective administration of a statute can or should be cast immediately into the mold of a general rule.").

For the above reasons, *Bennett*'s first prong also is not satisfied. *See Portland Cement Ass'n*, 665 F.3d at 193 (decision not to address greenhouse gas emissions in new source performance standards was not final action because EPA indicated it was "working towards a proposal" for such standards); *Utility Air Regulatory Group v. EPA*, 320 F.3d 272, 278-79 (D.C. Cir. 2003) (guidance document interpreting regulatory provisions not final where its language was not binding and EPA was undertaking a rulemaking to amend those provisions).

II. THE GUIDANCE ALSO IS NOT RIPE FOR REVIEW.

Lack of ripeness is an additional reason to dismiss this petition. "Courts are obliged to avoid 'entangling themselves in abstract disagreements over administrative policies [] and . . . to protect the agencies from judicial interference until an administrative decision has been formalized and its effects felt in a concrete way . . . ." *Utility Air Regulatory Group*, 320 F.3d at 278 (quoting *Abbott Labs. v. Gardner*, 387 U.S. 136, 148-19 (1967) (alterations in original)). To determine ripeness, courts consider the fitness of the issues for judicial decision—encompassing factors that include whether consideration of the issues would benefit from a more concrete setting, and whether the agency's action is

sufficiently final—as well as the hardship to the parties of postponing review. *Utility Air Reg. Group*, 320 F.3d at 279 (internal quotations and citations omitted).

Here, Petitioner cannot satisfy the "fitness" test for the same reasons discussed in Argument I. Merely issuing the Guidance did not have any immediate, binding legal effect, and decisions on individual permits may make the particular issues Petitioner now attempts to raise more concrete. *See, e.g.*, *Utility Air Reg. Group*, 320 F.3d at 278-29. For example, Petitioners' concerns about the use of SILs in areas "where the increment or NAAQS is already mostly consumed or where many sources are being built" are better tested in the context of actual data from a specific air quality demonstration in an area presenting those circumstances. Pet. Br. at 47.

There is also no "hardship" from postponing review. Petitioner and other interested parties would have the opportunity to raise their objections to the Guidance's interpretation of 42 U.S.C. § 7475(a)(3) in the context of any individual permit application in which the permitting authority chooses to follow that legal rationale. Moreover, for state-issued permits—i.e., the bulk of PSD permits—the proper forum for raising such objections is not federal court, but rather the state administrative and (if necessary) judicial process. *See, e.g.*, *Nucor Steel-Arkansas v. Big River Steel, LLC*, 824 F.3d 444, 451 (8th Cir. 2016) (holding that state judicial review was the proper means to challenge the state's issuance of

a PSD permit); 77 Fed. Reg. 65,305, 65,306 (Oct. 26, 2012) (EPA "interpret[s] the CAA to require an opportunity for judicial review of a decision to grant or deny a PSD permit, whether issued by EPA or by a State under a SIP-approved or delegated PSD program" (citing 61 Fed. Reg. 1880, 1882–83 (Jan. 24, 1996)). A state permitting agency's decision to use the SILs recommended in the Guidance would likewise be reviewable by a state court.

III. THE GUIDANCE REASONABLY INTERPRETS 42 U.S.C. § 7475(a)(3).

The Act provides that a PSD permit applicant must "demonstrate[] that emissions from construction or operation of the applicant's proposed facility will not cause, or contribute to" a violation of the NAAQS or a PSD increment. 42 U.S.C. § 7475(a)(3). This Court has held that the term "contribute" is ambiguous, leaving EPA and permitting authorities discretion to determine what air quality impact "causes, or contributes." Petitioner's plain meaning argument is contrary to the statutory text and well established case law.

A. The Act Is Ambiguous Regarding The Degree of Air Quality Impact That "Causes, or Contributes to" a Violation and Leaves EPA and Permitting Authorities Discretion in Making That Judgment.

As discussed above, the Act states that the owner or operator of a proposed PSD source must "demonstrate[] that emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of any" PSD

increment or NAAQS. 42 U.S.C. § 7475(a)(3)(A), (B). However, the Act does not specify how a PSD permit applicant or permitting authority is to demonstrate or determine whether a proposed new or modified source will (or will not) cause or contribute to a violation of a NAAQS or applicable PSD increment. *See Sierra Club*, 705 F.3d at 465. Further, the phrase "cause, or contribute," as used in section 7475, is ambiguous. It therefore leaves to a PSD permitting authority's discretion the determination of what level of impact "causes, or contributes" to a violation. Petitioner's reading is contrary to the words of the statute and longstanding precedent and should be rejected.

To begin with, the phrase "cause, or contribute to," and the included terms "cause" and "contribute" are not defined in 42 U.S.C. §§ 7479 or 7602, or any other section of the Act. In the absence of a statutory definition, courts consider whether a disputed term has an ordinary meaning. *See Petit v. Dep't of Education*, 675 F.3d 769, 781 (D.C. Cir. 2012); *NRDC v. EPA*, 489 F.3d 1250, 1258 (D.C. Cir. 2007); Memorandum at 2 (JAxx). But the meaning of a statutory term also depends on the context in which it is used. *See, e.g.*, *Bell Atlantic Tel. Co. v. FCC*, 131 F.3d 1044, 1047 (D.C. Cir. 1997).

The verb "cause," in the context of section 7475(a)(3), may be understood to refer to emissions from a proposed PSD source that will "be responsible for, be the reason for, or result in" a violation of a NAAQS or a PSD increment. In other

words, emissions from a proposed source that, when modeled, produce a violation that "would not be projected to occur 'but for' the increased emissions." Memorandum at 2-3 (JAxx) (citing dictionary definitions of "cause" and 57A Am. Jur. 2d Negligence § 415). However, the inclusion of "or contribute to" in the phrase "cause, or contribute to" makes clear that Congress did not intend for section 7475(a)(3) to apply *only* when emissions from a proposed source are a "'but for' cause of a violation." Memorandum at 3 (JAxx). Instead, it should be read to also apply where a proposed source would "contribute" to a violation that might be modeled even without the impact of the proposed source. *Id.*

Petitioner acknowledges that the phrase "cause, or contribute to" expands the application of section 7475(a)(3) beyond the circumstance of "but for" causation, (*See* Pet. Br. at 33). For this reason, Petitioner's citation to *North Carolina v. EPA* is inapt. *See* Pet. Br. at 31, 33, *citing* 531 F.3d 896, 910 (D.C. Cir. 2008). As discussed further below, EPA's interpretation does not "reduce [the] coverage" of section 7475(a)(3) to something less than if it simply applied to air quality impacts that "cause" a violation. Pet. Br. at 33. Rather, EPA's interpretation *broadens* the section's application to include other "meaningful" (that is, more than "inconsequential" or "negligible") air quality impacts that may not, by themselves, "cause" a violation. *Infra* Argument III.B.

Moreover, Petitioner's suggestion that Congress' use of the terms "cause" and "contribute" together can be "unambiguously" understood as an intention to prohibit all "air quality impacts," no matter how "small" is wrong. *See* Pet. Br. at 34; *see also id*. at 31. This Court has held on multiple occasions that "contribute" does *not* have a consistent, ordinary meaning and, when used in other CAA provisions, is ambiguous with respect to the degree of air quality effect to which it applies. *See Catawba County*, 571 F.3d at 39; *EDF v. EPA*, 82 F.3d 451, 459, *as amended by* 92 F.3d 1209 (D.C. Cir. 1996); *see also* Memorandum at 3 (JAxx).

EDF involved 42 U.S.C. § 7506(c). This provides for conformity determinations to be made for transportation plans, programs and projects before EPA approves a plan revision. 82 F.3d at 458. Under this provision, such plans and programs may be found to conform if they, "with respect to ozone and carbon monoxide nonattainment areas, *contribute to annual emissions reductions consistent with*" specified CAA provisions. 42 U.S.C. § 7506(c)(3)(A)(iii), *quoted with emphasis in* 82 F.3d at 458. The petitioners' argument in *EDF* assumed that the plain meaning of section 7506(c) required each individual plan or program to "produce an absolute reduction in the given emissions." *Id.* at 459. By contrast, EPA found that the language was not that clear. *Id.* The Court reasoned that "'contribute to' in section [7506(c)] . . . is ambiguous and 'leaves wide open the

question of how large a reduction in emissions must be to constitute a contribution.'" Memorandum at 4 (JAxx) (quoting 82 F.3d at 459).

More recently, *Catawba County* presented challenges to EPA's interpretation of 42 U.S.C. § 7407(d). There, EPA must designate as "nonattainment" any area that does not meet a NAAQS or "that contributes to ambient air quality in a nearby area that does not meet" the NAAQS. *Id.* § 7407(d)(1)(A)(i). The petitioner asserted that "contribute[]" necessarily implies "a significant causal relationship" and requires quantification of a threshold amount of air pollution that "contributed" to the nearby area. 571 F.3d at 38-39. As in *EDF*, the Court disagreed. Contrasting dictionary definitions of "contribute" "suggest[ed] an ambiguity that fatally undermines petitioners' *Chevron* step one argument." *Id.* at 39. The Court thus held that "section [7407(d)] is ambiguous as to how the EPA should measure contribution and what degree of contribution is sufficient to deem an area nonattainment." *Id.* at 39; Memorandum at 4 (JAxx).

Petitioner cites a case in which the Court upheld EPA's interpretation of the phrase "cause, or contribute to" in a CAA provision governing nonroad vehicle emissions, where EPA stated that the provision "does not require a finding of 'significant contribution,' but merely 'contribution,' for individual categories of nonroad engines." *Bluewater Network v. EPA*, 370 F.3d 1, 13 (D.C. Cir. 2004); Pet. Br. at 32-33. The Court began its inquiry by examining dictionary definitions

of "contribute" and finding that "[s]tanding alone, the term contribute "has no inherent connotation as to the magnitude or importance of the relevant 'share' in the effect; certainly it does not incorporate any 'significance' requirement." *Id.*

EPA agrees. There is no plain, unambiguous, inherent magnitude associated with the term "contribute," part of the reason the term is ambiguous in the context of section 7475(a)(3). But the statutory provisions at issue in *Bluewater* contained *two* pertinent phrases: first, "significant contributor," and second, "cause, or contribute to" without the "significant" modifier. *See* 42 U.S.C. § 7547(a)(2), (3); *Bluewater*, 370 F.3d at 13. The Court reasoned, in part, that Congress' use of these two distinct formulations within section 7547(a) made it clear that Congress intended to require a "significance" threshold where that modifying term was included in the statutory paragraph, and not where it was absent. *Id.*

Here, in contrast, there is no other formulation or analogous clarifying text in section 7475(a). EPA does not read the term "contribute" as having an "inherent connotation" of "significance" in section 7545(a)(3). Rather, the term is ambiguous in this context.

Moreover, EPA does not read the term "significantly" into section 7475(a)(3). As EPA explained, the Guidance does not use the term "significant contribution." Memorandum at 9 n.6. (JAxx). Rather, it uses the term "significant impact" to identify a degree of change in air quality that is distinguishable from the

inherent variability in pollutant concentrations and can thus represent an impact that causes or contributes to a violation of air quality standards.

In short, Petitioner identifies no sound basis to depart from *Catawba County* and *EDF* and conclude that Congress has unambiguously commanded Petitioner's reading of "contribute." Accordingly, if the Court reaches the merits, it should find that the statutory text is ambiguous and subject to reasonable interpretation.

B. EPA's Non-binding Interpretation of Section 7475(a)(3) to Apply to Meaningful Impacts on Air Quality is Reasonable.

In the absence of specific language in section 7475(a)(3) regarding the degree of contribution that is required, EPA or another PSD permitting authority has discretion to exercise its expertise. They can apply their judgment to determine the degree of impact that "contributes" to a violation of the NAAQS or increment based on the particular context in which that term is used. *Id.* at 4-5 (JAxx). For purposes of the Guidance, EPA determined that the $PM_{2.5}$ and ozone SILs may be used as acceptable quantitative criteria to identify the degree of impact on air quality that is a "significant" or "meaningful" "impact"—i.e., "more than 'inconsequential' or 'negligible'—and thus amounts to a "contribution" for purposes of section 7475(a)(3). Memorandum at 9 n.6 (JAxx). This approach is reasonable.

1. EPA's legal interpretation is consistent with the purposes and structure of the Act's PSD provisions.

Contrary to Petitioner's arguments, EPA explained how its interpretation of "cause, or contribute to" fits the context in which the language is used and "the overall statutory scheme." *See* Pet. Br. at 35. To begin with, EPA's interpretation is consistent with the purposes of the Act's PSD provisions. Two purposes of the PSD program are: (1) to "insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources" and (2) to "assure that any decision to permit increased air pollution . . . is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation." Memorandum at 5 (JAxx), *quoting* "Congressional declaration of purpose," 42 U.S.C. § 7470(3), (5). This Court has held that these statements of purpose express Congress' desire to "balance the values of clean air, on the one hand, and economic development and productivity, on the other." *NRDC v. EPA*, 937 F.2d 641, 645-46 (D.C. Cir. 1991); Memorandum at 5 (JAxx). The statutory text together with Congress' declaration of purpose is another indication that permitting authorities may exercise some judgment in the course of reviewing a permit application and militates against a view that any degree of impact must be considered to "cause, or contribute to" a

violation, without any consideration of whether that degree of impact is meaningful. Memorandum at 5-6 (JAxx).

Petitioner acknowledges that there is an inherent tension between these goals that must be balanced. Yet it argues that certain statutory exceptions already provide sufficient "flexibility," making SILs unnecessary. Pet. Br. at 41-42; *see also* Pet. Br. at 37-39. This argument misses the mark. The Guidance does not assert that the use of SILs is justified because they provide flexibility. Rather, the SILs provide permitting authorities one tool for identifying the *degree* of air quality impact that "causes, or contributes to" NAAQS or PSD increment violations, consistent with Congress' directive that EPA specify models and the conditions under they should be used for purpose of making the required PSD demonstration. *See* 42 U.S.C. § 7475(e)(3)(D).

To confirm the reasonableness of its interpretation, EPA also compared the Act's PSD provisions with its preconstruction permitting program for nonattainment areas. This is known as "Nonattainment New Source Review." Memorandum at 6-7 (JAxx). The nonattainment area provisions require that a proposed major source or major modification in a nonattainment area offset projected emissions increases by an equal or greater reduction in actual emissions from other sources. 42 U.S.C. § 7503(a)(1)(A), (c). This requirement is mandatory in the Nonattainment New Source Review context. It allows no

discretion to the permitting authority. Because the Act requires the source to offset its emissions increase, the Act in effect conclusively presumes that emissions from the source "cause" or "contribute to" the nonattainment condition. Memorandum at 6 (JAxx).

By contrast, the Act provides discretion to PSD permitting authorities. They may determine, through the use of modeling and other statistical tools as identified by EPA, whether the emission increase from a proposed PSD source will "cause, or contribute to" a violation, before the source would find it necessary to mitigate its ambient impact. *See* 42 U.S.C. § 7475(a)(3), (e); Memorandum at 7 (JAxx). This makes sense. Had Congress meant to prevent PSD permitting authorities from exercising discretion where there is any modeled violation, including any preexisting violation, regardless of whether the proposed source has been determined to contribute to such violation, it presumably would have included a mandatory offset requirement for such circumstances in section 7475 similar to that in section 7503. *See* Pet. Br. at 35 ("When 'Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely [.]'"), *quoting Barnhart v. Sigmon Coal Co.*, 534 U.S. 438, 452-53 (2002).

EPA's reading of "contribute" is further supported by Congress' explicit recognition in the statutory text that air quality models would be needed to make

the showing required under section 7475(a)(3). Congress did not specify particular models or how EPA must apply them. It conferred on EPA discretion to specify models through regulation and to place conditions on the models' use. 42 U.S.C. § 7475(e)(3); *see also id.* § 7620(a); Memorandum at 7 (JAxx).

That section 7475(e)(3) gives EPA responsibility to determine the methods to be used by PSD permit applicants to make the required demonstration is further evidence of legislative intent that EPA "exercise its judgment to determine the degree of impact that 'contributes to' a violation of the NAAQS and thereby fill a gap in the statutory scheme." Memorandum at 7 (JAxx). Although section 7545(a)(3) does not expressly refer to the exercise of "judgment" or agency "discretion" (Pet. Br. at 37), this power can reasonably be inferred from, among other things, section 7475(e)(3)'s direction to promulgate regulations regarding "the analysis required under this subsection" and to specify air quality models to be used under specified sets of conditions. *See EDF*, 82 F.3d at 459-60 (deferring to EPA's reasonable interpretation "given the statute's express directive to the Agency to 'promulgate criteria and procedures for demonstrating and assuring conformity'"), *quoting* 42 U.S.C. § 7506(c)(4)(A). Further, EPA reasonably understands that Congress, having directed EPA to develop air quality models, anticipated that those models would be capable of predicting relatively small increases in air pollutant concentrations and that "there would be a point at which a

small projected air quality impact . . . becomes so inconsequential that PSD permitting authorities may reasonably conclude that such an impact does not cause, or contribute . . . ." Memorandum at 8 (JAxx).

Finally, by demonstrating that increased emissions from a proposed PSD source will be controlled to the point that these emissions will not have a meaningful impact on air quality in the affected area, EPA's interpretation is appropriately mindful of the PSD program's focus on controlling increased emissions from the construction and modification of large stationary sources, as opposed to other provisions of the Act. Those provisions require states to target emissions from existing stationary sources through the state implementation planning process.

The EPA's recommended application of SILs does not remove or amend the requirement to make the PSD air quality demonstration. EPA's technical analysis, if adopted by a permitting authority, would support a conclusion that air quality impacts from the proposed source below the level of the SIL will not be discernable from changes (or lack of changes) to the design value due to the inherent variability that would otherwise occur—e.g., those induced by weather, existing sources, and upwind contributions—so that any such level of predicted impact from the proposed source may be considered not meaningful. Therefore, the approach EPA describes in its Guidance is consistent with this Court's

observation in *Sierra Club*, 705 F.3d at 465, that it would be unlawful to "rely[] on permitting authorities to address violations [by revising their plans], rather than to prevent violations by requiring demonstration that a proposed source or modification will not cause a violation."

2. The Guidance does not "exempt" sources or "authorize violations."

Petitioners' remaining criticisms of EPA's legal interpretation are also misplaced. Nowhere does the Guidance purport to "authorize 'permitting authorities to automatically exempt sources with projected impacts below the SILs" from the demonstration requirement. Pet. Br. at 29, *quoting Sierra Club*, 705 F.3d at 465. On the contrary, EPA said directly that "SILs do not function to exempt a source from making the demonstration required by section 165(a)(3)" but rather "provide a streamlined means of making the air quality impact demonstration" required by this provision. Memorandum at 13 (JAxx); see also Guidance at 5 (JAxx). EPA also made clear that the Guidance, unlike the 2010 rule, does not rely on any theory of inherent agency authority to exempt *de minimis* circumstances from regulation. *See* Memorandum at 12-14 (JAxx). Rather, as shown above, the Guidance expresses the interpretive view that "the phrase 'cause, or contribute to' in section [7475(a)(3)] . . . is reasonably read in context to not apply to impacts on air quality that are not meaningful or significant." *Id.* at 13

(JAxx); *accord NRDC v. EPA*, 571 F.3d 1245, 1260 (D.C. Cir. 2009) (finding reasonable EPA's interpretation that planning requirements for the ozone NAAQS did not apply to areas in certain circumstances, and rejecting the notion that this reading improperly "waive[d]" the requirements).[15]

Further, the Guidance provides a technical basis to help permitting authorities make the judgment that a source's impacts are not meaningful enough that they would "cause, or contribute to" a violation. *See infra* Argument III.C. Moreover, EPA emphasized that even where a proposed source's projected air quality impacts are below the relevant SIL, permitting authorities "have the discretion to require further information or a cumulative impact analysis." Memorandum at 13 (JAxx); *accord* Guidance at 19-20 (JAxx).

Nor does the Guidance purport to nullify the preconstruction monitoring requirements in 42 U.S.C. § 7475(e)(2). Pet. Br. at 39-40. Petitioner claims that "for sources complying with a SIL, permitting authorities may ignore the results of this monitoring and analysis entirely, draining meaning from these requirements." *Id.* at 40. But section 7475(e)(2) only governs what preconstruction monitoring

[15] Likewise, the Guidance does not add to the Act's express exceptions from the demonstration requirement, for it does not suggest SILs are justified as an "exception" to the requirement, but rather as a partial means of demonstrating that a proposed source will not have an impact that "causes, or contributes to" a violation. *See* Pet. Br. at 37-39.

data collection should be performed, and when the analysis of such data should be made publicly available. It does not dictate how that data is to be used to inform the permitting authority's decision under section 7475(a)(3). *Id.* § 7475(e)(2).

Finally, the Guidance and Memorandum explicitly provide that each decision of a permitting authority on a PSD permit application must be supported by the administrative record and legal justification provided for that specific permitting decision. This includes any decision to use a SIL as part of an air quality demonstration. *See* Guidance at 3, 19-20 (JAxx, xx); Memorandum at 14 (JAxx). The Guidance does not purport, simply by virtue of its issuance and application, to "authorize" *any* decision.

C. The SILs Are Based on a Conservative and Sound Statistical Methodology That EPA Thoroughly Explained.

Petitioner generally does not challenge EPA's statistical methodology in support of the Guidance. Indeed, it concedes that EPA's approach "provides a measure of [the] magnitude" of a proposed source's emissions impact. Yet Petitioner claims that it is arbitrary because it does not measure "whether the impact exists or will cause or contribute to a violation." Pet. Br. at 44-45. This argument fundamentally overlooks that violations of the NAAQS and PSD increments are measured by looking at the relevant design value. This generally is based on an average of pollutant concentrations over a defined period. If the air

quality impact of a proposed new source is much less than the inherent variability of the atmosphere, such that the level of impact is indiscernible from the inherent variability —which will generally be the case when the source's projected impacts are lower than the SIL—then such information, in light of the EPA's technical analysis, rationally supports a conclusion that the source will not "cause, or contribute to" a violation. EPA explained this point in the Guidance: "for purposes of the PSD program, we are seeking to identify a concentration value that constitutes an insignificant impact, meaning a change in the design value that does not reflect a meaningful difference in air quality based on the introduction of a new source." Guidance at 13 (JAxx). In other words, it is not just that proposed source impacts below the level of the SILs are "small," but that they do not meaningfully change an area's air quality as measured by design value.

Petitioner's analogies to a football placed one inch from the end zone, or pouring water into a bucket, do not fit. They fail to capture, among other things, the inherent variability that causes air quality to fluctuate over time, the temporal aspect of design value measurement, and the predictive aspect of PSD air quality analysis. Pet. Br. at 45, 48. For example, EPA's Guidance recognizes the reality in PSD permitting that Petitioner's football (air quality) is not standing still but vibrating back and forth before the snap (when the proposed source begins to operate and the atmosphere sees increased emissions). Likewise, the level of water

in a bucket (or perhaps more aptly a swimming pool) is neither unchanging nor flat, e.g., due to wind, weather, and other factors. It is thus reasonable to conclude that a modeled degree of change that is within the range of the inherent variability in the baseline conditions is not meaningful and may reasonably be considered not to "cause, or contribute to" a subsequent touchdown or an overflowing bucket. EPA also reasonably looked at air quality variability in locations across the country and had reason to conclude that this variability was relatively consistent notwithstanding differences in the level of background air quality or location. *Supra* at 17-18.

Furthermore, while the Guidance thus uses SILs to identify degrees of air quality impact from a proposed source that may be considered insignificant and not meaningful at any location independent of background levels and impacts from other sources, the Guidance itself does not *determine* that a proposed source's impact is "insignificant" in the context of any particular PSD permitting application. As EPA explained, "permitting authorities *may generally* conclude there is no need to conduct a cumulative impact analysis" when single-source analysis shows that a proposed source will not have a significant impact on air quality. Guidance at 17-18 (JAxx) (emphasis added). "However, upon considering the permit record in an individual case, if a permitting authority has a basis for concern" that this demonstration is not sufficient, "then the permitting

authority should require additional information from the permit applicant to make the required air quality impact demonstration." *Id.* at 18 (JAxx). This means that permitting authorities retain the discretion to require more information from a proposed source notwithstanding that its modeled impact is within the Guidance's recommended SILs, if (as Petitioner posits may occur) information suggests that the air quality impacts identified in the Guidance are "not . . . small . . . in the context of [that] particular air quality region." Pet. Br. at 47. This may (in the case-by-case judgment of a permitting authority) include situations where "the increment or NAAQS is already mostly consumed or where many sources are being built." *Id.* at 47-48. To use Petitioner's football analogy, even if the ball is initially spotted short of the goal line based on EPA's guidance, for a close call, the referees still need to look at videotape (other information in the permitting record) and retain the discretion to conclude that the ball did cross the plane of the goal line based on the video evidence.

Thus, the Guidance recommends that the SILs EPA derived are suitable for use "*on a case-by-case basis* at the same points in the PSD air quality analysis as SIL values historically have been used in the PSD program [with one exception not relevant here]." Guidance at 17 (JAxx) (emphasis added). The Guidance does *not*, however, restrict permitting authorities' ability to seek additional data and analysis, and makes clear that the record and stated rationale in each individual case must

support that particular permitting decision. *See* Guidance at 17-20 (JAxx); *supra* at Argument I.A. It is inaccurate, therefore, to say EPA "fail[ed] to consider [this] aspect of the problem." Pet. Br. at 47 (internal quotation omitted). Rather, EPA appropriately left such issues for case-by-case consideration in the review of each permitting application, as the Guidance is not intended to "determine" whether sources cause, or contribute to violations. Likewise, the Guidance does not represent a "depart[ure]" from past EPA statements recognizing that there may be individual cases in which the use of a SIL is not appropriate. *See* Pet. Br at 48-49.

Finally, EPA took a reasonable approach in selecting SIL values for Class I, II, and III areas. *See* Pet. Br. at 49-50. For the $PM_{2.5}$ PSD increments, which are smaller for Class I than for Classes II and III, the recommended SIL values also are smaller for Class I areas than for other areas. Guidance at 17 (JAxx).[16] For the ozone and $PM_{2.5}$ NAAQS, which, in contrast, are "uniform throughout the class areas," EPA concluded that "no class-specific protection via SILs is necessary when assessing whether a source causes or contributes to a violation of the NAAQS," and recommended that the same SILs values apply to all areas. *Id.* at 16 (JAxx). Petitioner claims that this is arbitrary. EPA recognized that "historically, Congress has provided special protections to Class I areas." *Id.* But the "special

[16] As previously noted, there currently are no areas designated Class III. *Id.*

protections" to which EPA referred include the notably lower Class I PSD increments, as well as the provisions for Federal land managers to identify and protect "air quality related values" in the different class I areas, none of which are affected by the Guidance. *Id.* at 16 n.43 (JAxx).

CONCLUSION

For the reasons stated in Arguments I and II, the Court should dismiss the petition for lack of subject matter jurisdiction. If the Court reaches the merits, it should deny the petition for the reasons stated in Argument III.

Respectfully submitted,

JEFFREY BOSSERT CLARK
Assistant Attorney General

JOHNATHAN D. BRIGHTBILL
Deputy Assistant Attorney General

Dated: March 18, 2019

/s/ *Brian H. Lynk*
BRIAN H. LYNK
United States Department of Justice
Environment & Natural Resources Division
Environmental Defense Section
P.O. Box 7611
Washington, D.C. 20024
Tel: 202-514-6187
brian.lynk@usdoj.gov

Of Counsel:
BRIAN DOSTER
MARK KATAOKA
United States Environmental Protection Agency

Office of General Counsel
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Attorneys for Respondents

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Proof Brief of Respondents was served, this 18th day of March, 2019, on all registered counsel, through the Court's CM/ECF system.

/s/ *Brian H. Lynk*
Brian H. Lynk
United States Department of Justice
Environment & Natural Resources Div.
Attorney for Respondents

CERTIFICATE OF COMPLIANCE WITH WORD LIMITATION

Pursuant to Federal Rule of Appellate Procedure 32(a)(7)(C), I hereby certify that the foregoing proof Brief of Respondent EPA contains 12,963 words as counted by the Microsoft Office Word 2007 word processing system, and thus complies with the applicable word limitation.

/s/ *Brian H. Lynk*
Brian H. Lynk
United States Department of Justice
Environment & Natural Resources Div.
Attorney for Respondents

ATTACHMENT A

U.S. Environmental Protection Agency
Pacific Southwest - Region 9
Clean Air Act Permit

Fact Sheet

Palmdale Energy Project
PSD Permit: SE 17-01

August 2017

Fact Sheet

Proposed Prevention of Significant Deterioration Permit

Palmdale Energy Project
Palmdale, California

PSD Permit No. SE 17-01

Contents

Table 24 Summary of Maximum Project Impacts, SILs, Background Concentrations, NAAQS, and PSD Class II Increments

NAAQS pollutant & averaging time	Maximum Project-Only Modeled Impact, µg/m³	SIL, µg/m³	Background Concentration, µg/m³	NAAQS µg/m³	PSD Class II Increment, µg/m³	Project Impact at or above SIL?
CO, 1-hr	124	2000	2,176	Primary: 40,000 (35 ppm)	N/A	No
CO, 1-hr (Startup/shutdown)	575	2000	2, 176	Primary: 40,000 (35 ppm)	N/A	No
CO, 8-hr	29	500	1,603	Primary: 10,000 (9 ppm)	N/A	No
CO, 8-hr (Startup)	89	500	1,603	Primary: 10,000 (9 ppm)	N/A	No
NO_2, 1-hr	14	7.5 (4 ppb)	81	Primary: 188 (100 ppb)	N/A	**Yes**
NO_2, 1-hr (Startup)	57	7.5 (4 ppb)	81	Primary: 188 (100 ppb)	N/A	**Yes**
NO_2, annual	0.98	1.0	15.1	Primary and Secondary: 100 (53 ppb)	25 (13 ppb)	No
PM_{10}, 24-hr	7	5	80	Primary and Secondary: 150	30	**Yes**
$PM_{2.5}$, 24-hr	7	1.2	18	Primary and Secondary: 35	9	**Yes**
$PM_{2.5}$, annual	0.7	0.2	6.1	Primary: 12 Secondary:15	4	**Yes**

Source: See Section 7.3 and Tables 7-2 and 7-4 of the October 2015 Application

SIL Values: The 1-hr NO_2 SIL is provided in the EPA's June 28, 2010 and March 1, 2011 memos entitled "Applicability of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard" and "Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO2 National Ambient Air Quality Standard," respectively.[83] The 24-hr and annual $PM_{2.5}$ SIL values are provided in the EPA's August 18, 2016 draft $PM_{2.5}$ guidance entitled "Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program" as well as the supporting "Technical Basis for the EPA's Development of Significant Impact Thresholds for PM2.5 and Ozone" and the supporting "Legal Support Memorandum: Application of Significant Impact Levels in the Air Quality Demonstration for Prevention of Significant Deterioration Permitting under the Clean Air Act," both dated August 1, 2016. [84] For the 1-hr and 8-hr CO, annual NO_2, and 24-hr PM_{10} SILs, see 40 CFR 51.165(b)(2).

[83] https://www3.epa.gov/scram001/guidance/clarification/ClarificationMemo_AppendixW_Hourly-NO2-NAAQS_FINAL_06-28-2010.pdf and https://www.epa.gov/sites/production/files/2015-07/documents/appwno2_2.pdf

[84] https://www.epa.gov/nsr/draft-guidance-comment-significant-impact-levels-ozone-and-fine-particle-prevention-significant

7.3.4: Results of the Cumulative Impacts Analysis

The results of the PSD cumulative impacts modeling analysis for PEP's normal operations and startup and shutdown periods are shown in Table 25. The analysis demonstrates that emissions from PEP during normal operations and startup and shutdown will not cause or contribute to a violation of the NAAQS for 1-hour NO_2, 24-hour PM_{10}, 24-hour $PM_{2.5}$, or annual $PM_{2.5}$ or the applicable PSD increments for these pollutants and averaging periods. For cumulative impacts, as compared to the NAAQS, the modeled impacts of the Project and appropriate nearby sources were added to the background concentration. The modeled impacts of the Project and appropriate nearby sources may vary from the Project-only impacts provided above in Table 24 because the cumulative analysis considers the form of the NAAQS, and the Project-only analysis considered a more conservative worst-case impact. As described further in Section 7.4.2.2, for Class II PSD increments, the modeled impacts of the Project and appropriate nearby sources may be compared to the applicable increment.

Table 25 Summary of Project and Nearby Sources Impacts, PSD Class II Increments, Background Concentrations, Cumulative Impacts with Background, and NAAQS

NAAQS pollutant & averaging time	Project and Nearby Sources Modeled Impact (µg/m³)	PSD Increment, Class II (µg/m³)	Background Concentration (µg/m³)	Cumulative Impact (µg/m³)	NAAQS (µg/m³)
NO_2, 1-hr	See note	N/A	See note	111	Primary: 188 (100 ppb)
NO_2, 1-hr (startup/shut down)	See note	N/A	See note	126	Primary: 188 (100 ppb)
PM_{10}, 24-hr	7	30	80	87	Primary & Secondary: 150
$PM_{2.5}$, 24-hr	5	9	18	23	Primary & Secondary: 35
$PM_{2.5}$, annual	0.77	4	6.1	6.9	Primary: 12 Secondary: 15

Sources: October 2015 PSD Application Table 7-8 and 7-9, p.7.4-7 and 7.4-8.
Note: NO_2 impacts were evaluated using the Tier 3 Ozone Limiting Method (OLM), with hourly seasonal background values added consistent with EPA modeling guidelines, and as a result, separate modeled and background values not available. There are no PSD increments for 1-hour NO_2. See Section 7.4.6.

STATUTORY AND REGULATORY ADDENDUM

TABLE OF CONTENTS

STATUTES

CODE OF FEDERAL REGULATIONS

TREATISE

42 U.S.C.A. § 7503

§ 7503. Permit requirements

Currentness

(a) In general

The permit program required by section 7502(b)(6) of this title shall provide that permits to construct and operate may be issued if--

(1) in accordance with regulations issued by the Administrator for the determination of baseline emissions in a manner consistent with the assumptions underlying the applicable implementation plan approved under section 7410 of this title and this part, the permitting agency determines that--

(A) by the time the source is to commence operation, sufficient offsetting emissions reductions have been obtained, such that total allowable emissions from existing sources in the region, from new or modified sources which are not major emitting facilities, and from the proposed source will be sufficiently less than total emissions from existing sources (as determined in accordance with the regulations under this paragraph) prior to the application for such permit to construct or modify so as to represent (when considered together with the plan provisions required under section 7502 of this title) reasonable further progress (as defined in section 7501 of this title); or

(B) in the case of a new or modified major stationary source which is located in a zone (within the nonattainment area) identified by the Administrator, in consultation with the Secretary of Housing and Urban Development, as a zone to which economic development should be targeted, that emissions of such pollutant resulting from the proposed new or modified major stationary source will not cause or contribute to emissions levels which exceed the allowance permitted for such pollutant for such area from new or modified major stationary sources under section 7502(c) of this title;

(2) the proposed source is required to comply with the lowest achievable emission rate;

(3) the owner or operator of the proposed new or modified source has demonstrated that all major stationary sources owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in such State are subject to emission limitations and are in compliance, or on a schedule for compliance, with all applicable emission limitations and standards under this chapter; and [1]

(4) the Administrator has not determined that the applicable implementation plan is not being adequately implemented for the nonattainment area in which the proposed source is to be constructed or modified in accordance with the requirements of this part; and

(5) an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source demonstrates that benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification.

Any emission reductions required as a precondition of the issuance of a permit under paragraph (1) shall be federally enforceable before such permit may be issued.

(b) Prohibition on use of old growth allowances

Any growth allowance included in an applicable implementation plan to meet the requirements of section 7502(b)(5) of this title (as in effect immediately before November 15, 1990) shall not be valid for use in any area that received or receives a notice under section 7410(a)(2)(H)(ii) of this title (as in effect immediately before November 15, 1990) or under section 7410(k)(1) of this title that its applicable implementation plan containing such allowance is substantially inadequate.

(c) Offsets

(1) The owner or operator of a new or modified major stationary source may comply with any offset requirement in effect under this part for increased emissions of any air pollutant only by obtaining emission reductions of such air pollutant from the same source or other sources in the same nonattainment area, except that the State may allow the owner or operator of a source to obtain such emission reductions in another nonattainment area if (A) the other area has an equal or higher nonattainment classification than the area in which the source is located and (B) emissions from such other area contribute to a violation of the national ambient air quality standard in the nonattainment area in which the source is located. Such emission reductions shall be, by the time a new or modified source commences operation, in effect and enforceable and shall assure that the total tonnage of increased emissions of the air pollutant from the new or modified source shall be offset by an equal or greater reduction, as applicable, in the actual emissions of such air pollutant from the same or other sources in the area.

(2) Emission reductions otherwise required by this chapter shall not be creditable as emissions reductions for purposes of any such offset requirement. Incidental emission reductions which are not otherwise required by this chapter shall be creditable as emission reductions for such purposes if such emission reductions meet the requirements of paragraph (1).

(d) Control technology information

The State shall provide that control technology information from permits issued under this section will be promptly submitted to the Administrator for purposes of making such information available through the RACT/BACT/LAER clearinghouse to other States and to the general public.

(e) Rocket engines or motors

The permitting authority of a State shall allow a source to offset by alternative or innovative means emission increases from rocket engine and motor firing, and cleaning related to such firing, at an existing or modified major source that tests rocket engines or motors under the following conditions:

(1) Any modification proposed is solely for the purpose of expanding the testing of rocket engines or motors at an existing source that is permitted to test such engines on November 15, 1990.

(2) The source demonstrates to the satisfaction of the permitting authority of the State that it has used all reasonable means to obtain and utilize offsets, as determined on an annual basis, for the emissions increases beyond allowable levels, that all available offsets are being used, and that sufficient offsets are not available to the source.

(3) The source has obtained a written finding from the Department of Defense, Department of Transportation, National Aeronautics and Space Administration or other appropriate Federal agency, that the testing of rocket motors or engines at the facility is required for a program essential to the national security.

(4) The source will comply with an alternative measure, imposed by the permitting authority, designed to offset any emission increases beyond permitted levels not directly offset by the source. In lieu of imposing any alternative offset measures, the permitting authority may impose an emissions fee to be paid to such authority of a State which shall be an amount no greater than 1.5 times the average cost of stationary source control measures adopted in that area during the previous 3 years. The permitting authority shall utilize the fees in a manner that maximizes the emissions reductions in that area.

CREDIT(S)

(July 14, 1955, c. 360, Title I, § 173, as added Pub.L. 95-95, Title I, § 129(b), Aug. 7, 1977, 91 Stat. 748; amended Pub.L. 95-190, § 14(a)(57), (58), Nov. 16, 1977, 91 Stat. 1403; Pub.L. 101-549, Title I, § 102(c), Nov. 15, 1990, 104 Stat. 2415.)

Notes of Decisions (16)

Footnotes

1 So in original. The word “and” probably should not appear.

42 U.S.C.A. § 7503, 42 USCA § 7503

Current through P.L. 116-5. Title 26 current through 116-7.

End of Document

KeyCite Yellow Flag - Negative Treatment
Proposed Legislation

United States Code Annotated
Title 42. The Public Health and Welfare
Chapter 85. Air Pollution Prevention and Control (Refs & Annos)
Subchapter I. Programs and Activities
Part D. Plan Requirements for Nonattainment Areas
Subpart 1. Nonattainment Areas in General (Refs & Annos)

42 U.S.C.A. § 7506

§ 7506. Limitations on certain Federal assistance

Effective: August 10, 2005
Currentness

(a), (b) Repealed. Pub.L. 101-549, Title I, § 110(4), Nov. 15, 1990, 104 Stat. 2470

(c) Activities not conforming to approved or promulgated plans

(1) No department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve, any activity which does not conform to an implementation plan after it has been approved or promulgated under section 7410 of this title. No metropolitan planning organization designated under section 134 of Title 23, shall give its approval to any project, program, or plan which does not conform to an implementation plan approved or promulgated under section 7410 of this title. The assurance of conformity to such an implementation plan shall be an affirmative responsibility of the head of such department, agency, or instrumentality. Conformity to an implementation plan means--

(A) conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and

(B) that such activities will not--

(i) cause or contribute to any new violation of any standard in any area;

(ii) increase the frequency or severity of any existing violation of any standard in any area; or

(iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

The determination of conformity shall be based on the most recent estimates of emissions, and such estimates shall be determined from the most recent population, employment, travel and congestion estimates as determined by the metropolitan planning organization or other agency authorized to make such estimates.

(2) Any transportation plan or program developed pursuant to Title 23 or chapter 53 of Title 49 shall implement the transportation provisions of any applicable implementation plan approved under this chapter applicable to all or part of the area covered by such transportation plan or program. No Federal agency may approve, accept or fund any transportation plan, program or project unless such plan, program or project has been found to conform to any applicable implementation plan in effect under this chapter. In particular--

(A) no transportation plan or transportation improvement program may be adopted by a metropolitan planning organization designated under Title 23 or chapter 53 of Title 49, or be found to be in conformity by a metropolitan planning organization until a final determination has been made that emissions expected from implementation of such plans and programs are consistent with estimates of emissions from motor vehicles and necessary emissions reductions contained in the applicable implementation plan, and that the plan or program will conform to the requirements of paragraph (1)(B);

(B) no metropolitan planning organization or other recipient of funds under Title 23 or chapter 53 of Title 49 shall adopt or approve a transportation improvement program of projects until it determines that such program provides for timely implementation of transportation control measures consistent with schedules included in the applicable implementation plan;

(C) a transportation project may be adopted or approved by a metropolitan planning organization or any recipient of funds designated under Title 23 or chapter 53 of Title 49, or found in conformity by a metropolitan planning organization or approved, accepted, or funded by the Department of Transportation only if it meets either the requirements of subparagraph (D) or the following requirements--

(i) such a project comes from a conforming plan and program;

(ii) the design concept and scope of such project have not changed significantly since the conformity finding regarding the plan and program from which the project derived; and

(iii) the design concept and scope of such project at the time of the conformity determination for the program was adequate to determine emissions.

(D) Any project not referred to in subparagraph (C) shall be treated as conforming to the applicable implementation plan only if it is demonstrated that the projected emissions from such project, when considered together with emissions projected for the conforming transportation plans and programs within the nonattainment area, do not cause such plans and programs to exceed the emission reduction projections and schedules assigned to such plans and programs in the applicable implementation plan.

(E) The appropriate metropolitan planning organization shall redetermine conformity of existing transportation plans and programs not later than 2 years after the date on which the Administrator--

(i) finds a motor vehicle emissions budget to be adequate in accordance with section 93.118(e)(4) of title 40, Code of Federal Regulations (as in effect on October 1, 2004);

(ii) approves an implementation plan that establishes a motor vehicle emissions budget if that budget has not yet been determined to be adequate in accordance with clause (i); or

(iii) promulgates an implementation plan that establishes or revises a motor vehicle emissions budget.

(3) Until such time as the implementation plan revision referred to in paragraph (4)(C) is approved, conformity of such plans, programs, and projects will be demonstrated if--

(A) the transportation plans and programs--

(i) are consistent with the most recent estimates of mobile source emissions;

(ii) provide for the expeditious implementation of transportation control measures in the applicable implementation plan; and

(iii) with respect to ozone and carbon monoxide nonattainment areas, contribute to annual emissions reductions consistent with sections 7511a(b)(1) and 7512a(a)(7) of this title; and

(B) the transportation projects--

(i) come from a conforming transportation plan and program as defined in subparagraph (A) or for 12 months after November 15, 1990, from a transportation program found to conform within 3 years prior to November 15, 1990; and

(ii) in carbon monoxide nonattainment areas, eliminate or reduce the severity and number of violations of the carbon monoxide standards in the area substantially affected by the project.

With regard to subparagraph (B)(ii), such determination may be made as part of either the conformity determination for the transportation program or for the individual project taken as a whole during the environmental review phase of project development.

(4) Criteria and procedures for determining conformity

(A) In general

The Administrator shall promulgate, and periodically update, criteria and procedures for determining conformity (except in the case of transportation plans, programs, and projects) of, and for keeping the Administrator informed about, the activities referred to in paragraph (1).

(B) Transportation plans, programs, and projects

The Administrator, with the concurrence of the Secretary of Transportation, shall promulgate, and periodically update, criteria and procedures for demonstrating and assuring conformity in the case of transportation plans, programs, and projects.

(C) Civil action to compel promulgation

A civil action may be brought against the Administrator and the Secretary of Transportation under section 7604 of this title to compel promulgation of such criteria and procedures and the Federal district court shall have jurisdiction to order such promulgation.

(D) The procedures and criteria shall, at a minimum--

(i) address the consultation procedures to be undertaken by metropolitan planning organizations and the Secretary of Transportation with State and local air quality agencies and State departments of transportation before such organizations and the Secretary make conformity determinations;

(ii) address the appropriate frequency for making conformity determinations, but the frequency for making conformity determinations on updated transportation plans and programs shall be every 4 years, except in a case in which--

(I) the metropolitan planning organization elects to update a transportation plan or program more frequently; or

(II) the metropolitan planning organization is required to determine conformity in accordance with paragraph (2)(E); and

(iii) address how conformity determinations will be made with respect to maintenance plans.

(E) Inclusion of criteria and procedures in SIP

Not later than 2 years after August 10, 2005, the procedures under subparagraph (A) shall include a requirement that each State include in the State implementation plan criteria and procedures for consultation required by subparagraph (D)(i), and enforcement and enforceability (pursuant to sections 93.125(c) and 93.122(a)(4)(ii) of title 40, Code of Federal Regulations) in accordance with the Administrator's criteria and procedures for consultation, enforcement and enforceability.

(F) Compliance with the rules of the Administrator for determining the conformity of transportation plans, programs, and projects funded or approved under Title 23 or chapter 53 of Title 49 to State or Federal implementation plans shall not be required for traffic signal synchronization projects prior to the funding, approval or implementation of such projects. The supporting regional emissions analysis for any conformity determination made with respect to a transportation plan, program, or project shall consider the effect on emissions of any such project funded, approved, or implemented prior to the conformity determination.

(5) Applicability

This subsection shall apply only with respect to--

(A) a nonattainment area and each pollutant for which the area is designated as a nonattainment area; and

(B) an area that was designated as a nonattainment area but that was later redesignated by the Administrator as an attainment area and that is required to develop a maintenance plan under section 7505a of this title with respect to the specific pollutant for which the area was designated nonattainment.

(6) Notwithstanding paragraph 5,[1] this subsection shall not apply with respect to an area designated nonattainment under section 7407(d)(1) of this title until 1 year after that area is first designated nonattainment for a specific national ambient air quality standard. This paragraph only applies with respect to the national ambient air quality standard for which an area is newly designated nonattainment and does not affect the area's requirements with respect to all other national ambient air quality standards for which the area is designated nonattainment or has been redesignated from nonattainment to attainment with a maintenance plan pursuant to section 7505a of this title (including any pre-existing national ambient air quality standard for a pollutant for which a new or revised standard has been issued).

(7) Conformity horizon for transportation plans

(A) In general

Each conformity determination required under this section for a transportation plan under section 134(i) of Title 23 or section 5303(i) of Title 49 shall require a demonstration of conformity for the period ending on either the final year of the transportation plan, or at the election of the metropolitan planning organization, after consultation with the air pollution control agency and solicitation of public comments and consideration of such comments, the longest of the following periods:

(i) The first 10-year period of any such transportation plan.

(ii) The latest year in the implementation plan applicable to the area that contains a motor vehicle emission budget.

(iii) The year after the completion date of a regionally significant project if the project is included in the transportation improvement program or the project requires approval before the subsequent conformity determination.

ADD8

(B) Regional emissions analysis

The conformity determination shall be accompanied by a regional emissions analysis for the last year of the transportation plan and for any year shown to exceed emission budgets by a prior analysis, if such year extends beyond the applicable period as determined under subparagraph (A).

(C) Exception

In any case in which an area has a revision to an implementation plan under section 7505a(b) of this title and the Administrator has found the motor vehicles emissions budgets from that revision to be adequate in accordance with section 93.118(e)(4) of title 40, Code of Federal Regulations (as in effect on October 1, 2004), or has approved the revision, the demonstration of conformity at the election of the metropolitan planning organization, after consultation with the air pollution control agency and solicitation of public comments and consideration of such comments, shall be required to extend only through the last year of the implementation plan required under section 7505a(b) of this title.

(D) Effect of election

Any election by a metropolitan planning organization under this paragraph shall continue in effect until the metropolitan planning organization elects otherwise.

(E) Air pollution control agency defined

In this paragraph, the term "air pollution control agency" means an air pollution control agency (as defined in section 7602(b) of this title) that is responsible for developing plans or controlling air pollution within the area covered by a transportation plan.

(8) Substitution of transportation control measures

(A) In general

Transportation control measures that are specified in an implementation plan may be replaced or added to the implementation plan with alternate or additional transportation control measures--

(i) if the substitute measures achieve equivalent or greater emissions reductions than the control measure to be replaced, as demonstrated with an emissions impact analysis that is consistent with the current methodology used for evaluating the replaced control measure in the implementation plan;

(ii) if the substitute control measures are implemented--

(I) in accordance with a schedule that is consistent with the schedule provided for control measures in the implementation plan; or

(II) if the implementation plan date for implementation of the control measure to be replaced has passed, as soon as practicable after the implementation plan date but not later than the date on which emission reductions are necessary to achieve the purpose of the implementation plan;

(iii) if the substitute and additional control measures are accompanied with evidence of adequate personnel and funding and authority under State or local law to implement, monitor, and enforce the control measures;

(iv) if the substitute and additional control measures were developed through a collaborative process that included--

(I) participation by representatives of all affected jurisdictions (including local air pollution control agencies, the State air pollution control agency, and State and local transportation agencies);

(II) consultation with the Administrator; and

(III) reasonable public notice and opportunity for comment; and

(v) if the metropolitan planning organization, State air pollution control agency, and the Administrator concur with the equivalency of the substitute or additional control measures.

(B) Adoption

(i) Concurrence by the metropolitan planning organization, State air pollution control agency and the Administrator as required by subparagraph (A)(v) shall constitute adoption of the substitute or additional control measures so long as the requirements of subparagraphs (A)(i), (A)(ii), (A)(iii) and (A)(iv) are met.

(ii) Once adopted, the substitute or additional control measures become, by operation of law, part of the State implementation plan and become federally enforceable.

(iii) Within 90 days of its concurrence under subparagraph (A)(v), the State air pollution control agency shall submit the substitute or additional control measure to the Administrator for incorporation in the codification of the applicable implementation plan. Nothwithstanding [2] any other provision of this chapter, no additional State process shall be necessary to support such revision to the applicable plan.

(C) No requirement for express permission

The substitution or addition of a transportation control measure in accordance with this paragraph and the funding or approval of such a control measure shall not be contingent on the existence of any provision in the applicable implementation plan that expressly permits such a substitution or addition.

(D) No requirement for new conformity determination

The substitution or addition of a transportation control measure in accordance with this paragraph shall not require--

(i) a new conformity determination for the transportation plan; or

(ii) a revision of the implementation plan.

(E) Continuation of control measure being replaced

A control measure that is being replaced by a substitute control measure under this paragraph shall remain in effect until the substitute control measure is adopted by the State pursuant to subparagraph (B).

(F) Effect of adoption

Adoption of a substitute control measure shall constitute rescission of the previously applicable control measure.

(9) Lapse of conformity

If a conformity determination required under this subsection for a transportation plan under section 134(i) of Title 23 or section 5303(i) of Title 49 or a transportation improvement program under section 134(j) of such Title 23 or under section 5303(j) of such Title 49 is not made by the applicable deadline and such failure is not corrected by additional measures to either reduce motor vehicle emissions sufficient to demonstrate compliance with the requirements of this subsection within 12 months after such deadline or other measures sufficient to correct such failures, the transportation plan shall lapse.

(10) Lapse

In this subsection, the term "lapse" means that the conformity determination for a transportation plan or transportation improvement program has expired, and thus there is no currently conforming transportation plan or transportation improvement program.

(d) Priority of achieving and maintaining national primary ambient air quality standards

Each department, agency, or instrumentality of the Federal Government having authority to conduct or support any program with air-quality related transportation consequences shall give priority in the exercise of such authority, consistent with statutory requirements for allocation among States or other jurisdictions, to the implementation of those portions of plans prepared under this section to achieve and maintain the national primary ambient air-quality standard. This paragraph extends to, but is not limited to, authority exercised under chapter 53 of Title 49, Title 23, and the Housing and Urban Development Act.

CREDIT(S)

(July 14, 1955, c. 360, Title I, § 176, as added Pub.L. 95-95, Title I, § 129(b), Aug. 7, 1977, 91 Stat. 749; amended Pub.L. 95-190, § 14(a)(59), Nov. 16, 1977, 91 Stat. 1403; Pub.L. 101-549, Title I, §§ 101(f), 110(4), Nov. 15, 1990, 104 Stat. 2409,

ADD11

2470; Pub.L. 104-59, Title III, § 305(b), Nov. 28, 1995, 109 Stat. 580; Pub.L. 104-260, § 1, Oct. 9, 1996, 110 Stat. 3175; Pub.L. 106-377, § 1(a)(1) [Title III], Oct. 27, 2000, 114 Stat. 1441, 1441A-44; Pub.L. 109-59, Title VI, § 6011(a) to (f), Aug. 10, 2005, 119 Stat. 1878.)

Notes of Decisions (48)

Footnotes

1 So in original. Probably should be “paragraph (5),”.

2 So in original. Probably should be “Notwithstanding”.

42 U.S.C.A. § 7506, 42 USCA § 7506

Current through P.L. 116-5. Title 26 current through 116-7.

End of Document

KeyCite Yellow Flag - Negative Treatment
Proposed Legislation

United States Code Annotated
Title 42. The Public Health and Welfare
Chapter 85. Air Pollution Prevention and Control (Refs & Annos)
Subchapter III. General Provisions

42 U.S.C.A. § 7602

§ 7602. Definitions

Currentness

When used in this chapter--

(a) The term "Administrator" means the Administrator of the Environmental Protection Agency.

(b) The term "air pollution control agency" means any of the following:

(1) A single State agency designated by the Governor of that State as the official State air pollution control agency for purposes of this chapter.

(2) An agency established by two or more States and having substantial powers or duties pertaining to the prevention and control of air pollution.

(3) A city, county, or other local government health authority, or, in the case of any city, county, or other local government in which there is an agency other than the health authority charged with responsibility for enforcing ordinances or laws relating to the prevention and control of air pollution, such other agency.

(4) An agency of two or more municipalities located in the same State or in different States and having substantial powers or duties pertaining to the prevention and control of air pollution.

(5) An agency of an Indian tribe.

(c) The term "interstate air pollution control agency" means--

(1) an air pollution control agency established by two or more States, or

(2) an air pollution control agency of two or more municipalities located in different States.

(d) The term "State" means a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, and American Samoa and includes the Commonwealth of the Northern Mariana Islands.

(e) The term "person" includes an individual, corporation, partnership, association, State, municipality, political subdivision of a State, and any agency, department, or instrumentality of the United States and any officer, agent, or employee thereof.

(f) The term "municipality" means a city, town, borough, county, parish, district, or other public body created by or pursuant to State law.

(g) The term "air pollutant" means any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive (including source material, special nuclear material, and byproduct material) substance or matter which is emitted into or otherwise enters the ambient air. Such term includes any precursors to the formation of any air pollutant, to the extent the Administrator has identified such precursor or precursors for the particular purpose for which the term "air pollutant" is used.

(h) All language referring to effects on welfare includes, but is not limited to, effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutants.

(i) The term "Federal land manager" means, with respect to any lands in the United States, the Secretary of the department with authority over such lands.

(j) Except as otherwise expressly provided, the terms "major stationary source" and "major emitting facility" mean any stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant (including any major emitting facility or source of fugitive emissions of any such pollutant, as determined by rule by the Administrator).

(k) The terms "emission limitation" and "emission standard" mean a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under this chapter.. [1]

(l) The term "standard of performance" means a requirement of continuous emission reduction, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction.

(m) The term "means of emission limitation" means a system of continuous emission reduction (including the use of specific technology or fuels with specified pollution characteristics).

(n) The term "primary standard attainment date" means the date specified in the applicable implementation plan for the attainment of a national primary ambient air quality standard for any air pollutant.

(o) The term "delayed compliance order" means an order issued by the State or by the Administrator to an existing stationary source, postponing the date required under an applicable implementation plan for compliance by such source with any requirement of such plan.

(p) The term "schedule and timetable of compliance" means a schedule of required measures including an enforceable sequence of actions or operations leading to compliance with an emission limitation, other limitation, prohibition, or standard.

(q) For purposes of this chapter, the term "applicable implementation plan" means the portion (or portions) of the implementation plan, or most recent revision thereof, which has been approved under section 7410 of this title, or promulgated under section 7410(c) of this title, or promulgated or approved pursuant to regulations promulgated under section 7601(d) of this title and which implements the relevant requirements of this chapter.

(r) Indian tribe.--The term "Indian tribe" means any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village, which is Federally recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

(s) VOC.--The term "VOC" means volatile organic compound, as defined by the Administrator.

(t) PM-10.--The term "PM-10" means particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers, as measured by such method as the Administrator may determine.

(u) NAAQS and CTG.--The term "NAAQS" means national ambient air quality standard. The term "CTG" means a Control Technique Guideline published by the Administrator under section 7408 of this title.

(v) NO_x.--The term "NO_x" means oxides of nitrogen.

(w) CO.--The term "CO" means carbon monoxide.

(x) Small source.--The term "small source" means a source that emits less than 100 tons of regulated pollutants per year, or any class of persons that the Administrator determines, through regulation, generally lack technical ability or knowledge regarding control of air pollution.

(y) Federal implementation plan.--The term "Federal implementation plan" means a plan (or portion thereof) promulgated by the Administrator to fill all or a portion of a gap or otherwise correct all or a portion of an inadequacy in a State implementation plan, and which includes enforceable emission limitations or other control measures, means

or techniques (including economic incentives, such as marketable permits or auctions of emissions allowances), and provides for attainment of the relevant national ambient air quality standard.

(z) Stationary source.--The term "stationary source" means generally any source of an air pollutant except those emissions resulting directly from an internal combustion engine for transportation purposes or from a nonroad engine or nonroad vehicle as defined in section 7550 of this title.

CREDIT(S)

(July 14, 1955, c. 360, Title III, § 302, formerly § 9, as added Pub.L. 88-206, § 1, Dec. 17, 1963, 77 Stat. 400, renumbered Pub.L. 89-272, Title I, § 101(4), Oct. 20, 1965, 79 Stat. 992; amended Pub.L. 90-148, § 2, Nov. 21, 1967, 81 Stat. 504; Pub.L. 91-604, § 15(a)(1), (c)(1), Dec. 31, 1970, 84 Stat. 1710, 1713; Pub.L. 95-95, Title II, § 218(c), Title III, § 301, Aug. 7, 1977, 91 Stat. 761, 769; Pub.L. 95-190, § 14(a)(76), Nov. 16, 1977, 91 Stat. 1404; Pub.L. 101-549, Title I, §§ 101(d)(4), 107(a), (b), 108(j), 109(b), Title III, § 302(e), Title VII, § 709, Nov. 15, 1990, 104 Stat. 2409, 2464, 2468, 2470, 2574, 2684.)

Notes of Decisions (11)

Footnotes

1 So in original.

42 U.S.C.A. § 7602, 42 USCA § 7602

Current through P.L. 116-5. Title 26 current through 116-7.

End of Document

United States Code Annotated
Title 42. The Public Health and Welfare
Chapter 85. Air Pollution Prevention and Control (Refs & Annos)
Subchapter III. General Provisions

42 U.S.C.A. § 7620

§ 7620. Standardized air quality modeling

Currentness

(a) Conferences

Not later than six months after August 7, 1977, and at least every three years thereafter, the Administrator shall conduct a conference on air quality modeling. In conducting such conference, special attention shall be given to appropriate modeling necessary for carrying out part C of subchapter I of this chapter (relating to prevention of significant deterioration of air quality).

(b) Conferees

The conference conducted under this section shall provide for participation by the National Academy of Sciences, representatives of State and local air pollution control agencies, and appropriate Federal agencies, including the National Science Foundation; [1] the National Oceanic and Atmospheric Administration, and the National Institute of Standards and Technology.

(c) Comments; transcripts

Interested persons shall be permitted to submit written comments and a verbatim transcript of the conference proceedings shall be maintained.

(d) Promulgation and revision of regulations relating to air quality modeling

The comments submitted and the transcript maintained pursuant to subsection (c) of this section shall be included in the docket required to be established for purposes of promulgating or revising any regulation relating to air quality modeling under part C of subchapter I of this chapter.

CREDIT(S)

(July 14, 1955, c. 360, Title III, § 320, as added Pub.L. 95-95, Title III, § 310, Aug. 7, 1977, 91 Stat. 782; amended Pub.L. 100-418, Title V, § 5115(c), Aug. 23, 1988, 102 Stat. 1433.)

Footnotes

Code of Federal Regulations
Title 40. Protection of Environment
Chapter I. Environmental Protection Agency (Refs & Annos)
Subchapter C. Air Programs
Part 51. Requirements for Preparation, Adoption, and Submittal of Implementation Plans (Refs & Annos)

40 C.F.R. Pt. 51, App. W

Appendix W to Part 51—Guideline on Air Quality Models

Effective: May 22, 2017
Currentness

Preface

a. Industry and control agencies have long expressed a need for consistency in the application of air quality models for regulatory purposes. In the 1977 Clean Air Act (CAA), Congress mandated such consistency and encouraged the standardization of model applications. The Guideline on Air Quality Models (hereafter, Guideline) was first published in April 1978 to satisfy these requirements by specifying models and providing guidance for their use. The Guideline provides a common basis for estimating the air quality concentrations of criteria pollutants used in assessing control strategies and developing emissions limits.

b. The continuing development of new air quality models in response to regulatory requirements and the expanded requirements for models to cover even more complex problems have emphasized the need for periodic review and update of guidance on these techniques. Historically, three primary activities have provided direct input to revisions of the Guideline. The first is a series of periodic EPA workshops and modeling conferences conducted for the purpose of ensuring consistency and providing clarification in the application of models. The second activity was the solicitation and review of new models from the technical and user community. In the March 27, 1980, Federal Register, a procedure was outlined for the submittal to the EPA of privately developed models. After extensive evaluation and scientific review, these models, as well as those made available by the EPA, have been considered for recognition in the Guideline. The third activity is the extensive on-going research efforts by the EPA and others in air quality and meteorological modeling.

c. Based primarily on these three activities, new sections and topics have been included as needed. The EPA does not make changes to the guidance on a predetermined schedule, but rather on an as-needed basis. The EPA believes that revisions of the Guideline should be timely and responsive to user needs and should involve public participation to the greatest possible extent. All future changes to the guidance will be proposed and finalized in the Federal Register. Information on the current status of modeling guidance can always be obtained from the EPA's Regional Offices.

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Appendix A to Appendix W of Part 51—Summaries of Preferred Air Quality Models

List of Tables

1.0 Introduction

a. The Guideline provides air quality modeling techniques that should be applied to State Implementation Plan (SIP) submittals and revisions, to New Source Review (NSR), including new or modifying sources under Prevention of Significant Deterioration (PSD),[1] [2] [3] conformity analyses,[4] and other air quality assessments required under EPA regulation. Applicable only to criteria air pollutants, the Guideline is intended for use by the EPA Regional Offices in judging the adequacy of modeling analyses performed by the EPA, by state, local, and tribal permitting authorities, and by industry. It is appropriate for use by other federal government agencies and by state, local, and tribal agencies with air quality and land management responsibilities. The Guideline serves to identify, for all interested parties, those modeling techniques and databases that the EPA considers acceptable. The Guideline is not intended to be a compendium of modeling techniques. Rather, it should serve as a common measure of acceptable technical analysis when supported by sound scientific judgment.

b. Air quality measurements [5] are routinely used to characterize ambient concentrations of criteria pollutants throughout the nation but are rarely sufficient for characterizing the ambient impacts of individual sources or demonstrating adequacy of emissions limits for an existing source due to limitations in spatial and temporal coverage of ambient monitoring networks. The impacts of new sources that do not yet exist, and modifications to existing sources that have yet to be implemented, can only be determined through modeling. Thus, models have become a primary analytical tool in most air quality assessments. Air quality measurements can be used in a complementary manner to air quality models, with due regard for the strengths and weaknesses of both analysis techniques, and are particularly useful in assessing the accuracy of model estimates.

c. It would be advantageous to categorize the various regulatory programs and to apply a designated model to each proposed source needing analysis under a given program. However, the diversity of the nation's topography and climate, and variations in source configurations and operating characteristics dictate against a strict modeling "cookbook." There is no one model capable of properly addressing all conceivable situations even within a broad category such as point sources. Meteorological phenomena associated with threats to air quality standards are rarely amenable to a single mathematical treatment; thus, case-by-case analysis and judgment are frequently required. As modeling efforts become more complex, it is increasingly important that they be directed by highly competent individuals with a broad range of experience and knowledge in air quality meteorology. Further, they should be coordinated closely with specialists in emissions characteristics, air monitoring and data processing. The judgment of experienced meteorologists, atmospheric scientists, and analysts is essential.

d. The model that most accurately estimates concentrations in the area of interest is always sought. However, it is clear from the needs expressed by the EPA Regional Offices, by state, local, and tribal agencies, by many industries and trade

• Supportive analyses (diagnostic evaluations, code verification, sensitivity analyses);

• Diagnostic and performance evaluations with data obtained in trial locations; and

• Statistical performance evaluations in the circumstances of the intended applications.

Performance evaluations and diagnostic evaluations assess different qualities of how well a model is performing, and both are needed to establish credibility within the client and scientific community.

d. Performance evaluations allow the EPA and model users to determine the relative performance of a model in comparison with alternative modeling systems. Diagnostic evaluations allow determination of a model capability to simulate individual processes that affect the results, and usually employ smaller spatial/temporal scale data sets (e.g., field studies). Diagnostic evaluations enable the EPA and model users to build confidence that model predictions are accurate for the right reasons. However, the objective comparison of modeled concentrations with observed field data provides only a partial means for assessing model performance. Due to the limited supply of evaluation datasets, there are practical limits in assessing model performance. For this reason, the conclusions reached in the science peer reviews and the supportive analyses have particular relevance in deciding whether a model will be useful for its intended purposes.

2.2 Levels of Sophistication of Air Quality Analyses and Models

a. It is desirable to begin an air quality analysis by using simplified and conservative methods followed, as appropriate, by more complex and refined methods. The purpose of this approach is to streamline the process and sufficiently address regulatory requirements by eliminating the need of more detailed modeling when it is not necessary in a specific regulatory application. For example, in the context of a PSD permit application, a simplified and conservative analysis may be sufficient where it shows the proposed construction clearly will not cause or contribute to ambient concentrations in excess of either the NAAQS or the PSD increments. [2] [3]

b. There are two general levels of sophistication of air quality models. The first level consists of screening models that provide conservative modeled estimates of the air quality impact of a specific source or source category based on simplified assumptions of the model inputs (e.g., preset, worst-case meteorological conditions). In the case of a PSD assessment, if a screening model indicates that the increase in concentration attributable to the source could cause or contribute to a violation of any NAAQS or PSD increment, then the second level of more sophisticated models should be applied unless appropriate controls or operational restrictions are implemented based on the screening modeling.

c. The second level consists of refined models that provide more detailed treatment of physical and chemical atmospheric processes, require more detailed and precise input data, and provide spatially and temporally resolved concentration estimates. As a result, they provide a more sophisticated and, at least theoretically, a more accurate estimate of source impact and the effectiveness of control strategies.

d. There are situations where a screening model or a refined model is not available such that screening and refined modeling are not viable options to determine source-specific air quality impacts. In such situations, a screening technique or reduced-form model may be viable options for estimating source impacts.

i. Screening techniques are differentiated from a screening model in that screening techniques are approaches that make simplified and conservative assumptions about the physical and chemical atmospheric processes important to determining source impacts, while screening models make assumptions about conservative inputs to a specific model. The complexity of screening techniques ranges from simplified assumptions of chemistry applied to refined or screening model output to sophisticated approximations of the chemistry applied within a refined model.

ii. Reduced-form models are computationally efficient simulation tools for characterizing the pollutant response to specific types of emission reductions for a particular geographic area or background environmental conditions that reflect underlying atmospheric science of a refined model but reduce the computational resources of running a complex, numerical air quality model such as a photochemical grid model.

In such situations, an attempt should be made to acquire or improve the necessary databases and to develop appropriate analytical techniques, but the screening technique or reduced-form model may be sufficient in conducting regulatory modeling applications when applied in consultation with the EPA Regional Office.

e. Consistent with the general principle described in paragraph 2.2(a), the EPA may establish a demonstration tool or method as a sufficient means for a user or applicant to make a demonstration required by regulation, either by itself or as part of a modeling demonstration. To be used for such regulatory purposes, such a tool or method must be reflected in a codified regulation or have a well-documented technical basis and reasoning that is contained or incorporated in the record of the regulatory decision in which it is applied.

2.3 Availability of Models

a. For most of the screening and refined models discussed in the Guideline, codes, associated documentation and other useful information are publicly available for download from the EPA's Support Center for Regulatory Atmospheric Modeling (SCRAM) Web site at https://www.epa.gov/scram. This is a Web site with which air quality modelers should become familiar and regularly visit for important model updates and additional clarifications and revisions to modeling guidance documents that are applicable to EPA programs and regulations. Codes and documentation may also be available from the National Technical Information Service (NTIS), http://www.ntis.gov, and, when available, is referenced with the appropriate NTIS accession number.

3.0 Preferred and Alternative Air Quality Models

a. This section specifies the approach to be taken in determining preferred models for use in regulatory air quality programs. The status of models developed by the EPA, as well as those submitted to the EPA for review and possible inclusion in this Guideline, is discussed in this section. The section also provides the criteria and process for obtaining EPA approval for use of alternative models for individual cases in situations where the preferred models are not applicable or available. Additional sources of relevant modeling information are: the EPA's Model Clearinghouse [23] (section 3.3); EPA modeling conferences; periodic Regional, State, and Local Modelers' Workshops; and the EPA's SCRAM Web site (section 2.3).

b. When approval is required for a specific modeling technique or analytical procedure in this Guideline, we refer to the “appropriate reviewing authority.” Many states and some local agencies administer NSR permitting under programs approved into SIPs. In some EPA regions, federal authority to administer NSR permitting and related activities has been delegated to state or local agencies. In these cases, such agencies “stand in the shoes” of the respective EPA Region. Therefore, depending on the circumstances, the appropriate reviewing authority may be an EPA Regional Office, a state, local, or tribal agency, or perhaps the Federal Land Manager (FLM). In some cases, the Guideline requires review and approval of the use of an alternative model by the EPA Regional Office (sometimes stated as “Regional Administrator”). For all approvals of alternative models or techniques, the EPA Regional Office will coordinate and shall seek concurrence with the EPA's Model Clearinghouse. If there is any question as to the appropriate reviewing authority, you should contact the EPA Regional Office modeling contact (https://www3.epa.gov/ttn/scram/guidance_cont_regions.htm), whose jurisdiction generally includes the physical location of the source in question and its expected impacts.

comparisons when the number of available measurements are limited. [34] [35] Because of the uncertainty in paired modeled and observed concentrations, any attempts at calibration of models based on these comparisons is of questionable benefit and shall not be done.

4.2 Requirements

a. For NAAQS compliance demonstrations under PSD, use of the screening and preferred models for the pollutants listed in this subsection shall be limited to the near-field at a nominal distance of 50 km or less. Near-field application is consistent with capabilities of Gaussian plume models and, based on the EPA's assessment, is sufficient to address whether a source will cause or contribute to ambient concentrations in excess of a NAAQS. In most cases, maximum source impacts of inert pollutants will occur within the first 10 to 20 km from the source. Therefore, the EPA does not consider a long-range transport assessment beyond 50 km necessary for these pollutants if a near-field NAAQS compliance demonstration is required. 36

b. For assessment of PSD increments within the near-field distance of 50 km or less, use of the screening and preferred models for the pollutants listed in this subsection shall be limited to the same screening and preferred models approved for NAAQS compliance demonstrations.

c. To determine if a compliance demonstration for NAAQS and/or PSD increments may be necessary beyond 50 km (i.e., long-range transport assessment), the following screening approach shall be used to determine if a significant ambient impact will occur with particular focus on Class I areas and/or the applicable receptors that may be threatened at such distances.

i. Based on application in the near-field of the appropriate screening and/or preferred model, determine the significance of the ambient impacts at or about 50 km from the new or modifying source. If a near-field assessment is not available or this initial analysis indicates there may be significant ambient impacts at that distance, then further assessment is necessary.

ii. For assessment of the significance of ambient impacts for NAAQS and/or PSD increments, there is not a preferred model or screening approach for distances beyond 50 km. Thus, the appropriate reviewing authority (paragraph 3.0(b)) and the EPA Regional Office shall be consulted in determining the appropriate and agreed upon screening technique to conduct the second level assessment. Typically, a Lagrangian model is most appropriate to use for these second level assessments, but applicants shall reach agreement on the specific model and modeling parameters on a case-by-case basis in consultation with the appropriate reviewing authority (paragraph 3.0(b)) and EPA Regional Office. When Lagrangian models are used in this manner, they shall not include plume-depleting processes, such that model estimates are considered conservative, as is generally appropriate for screening assessments.

d. In those situations where a cumulative impact analysis for NAAQS and/or PSD increments analysis beyond 50 km is necessary, the selection and use of an alternative model shall occur in agreement with the appropriate reviewing authority (paragraph 3.0(b)) and approval by the EPA Regional Office based on the requirements of paragraph 3.2.2(e).

4.2.1 Screening Models and Techniques

a. Where a preliminary or conservative estimate is desired, point source screening techniques are an acceptable approach to air quality analyses.

b. As discussed in paragraph 2.2(a), screening models or techniques are designed to provide a conservative estimate of concentrations. The screening models used in most applications are the screening versions of the preferred models for refined applications. The two screening models, AERSCREEN [37] [38] and CTSCREEN, are screening versions of AERMOD (American Meteorological Society (AMS)/EPA Regulatory Model) and CTDMPLUS (Complex Terrain Dispersion Model Plus Algorithms for Unstable Situations), respectively. AERSCREEN is the recommended screening model for most applications in all types of terrain and for applications involving building downwash. For those applications in complex terrain where the application involves a well-defined hill or ridge, CTSCREEN [39] can be used.

c. Although AERSCREEN and CTSCREEN are designed to address a single-source scenario, there are approaches that can be used on a case-by-case basis to address multi-source situations using screening meteorology or other conservative model assumptions. However, the appropriate reviewing authority (paragraph 3.0(b)) shall be consulted, and concurrence obtained, on the protocol for modeling multiple sources with AERSCREEN or CTSCREEN to ensure that the worst case is identified and assessed.

d. As discussed in section 4.2.3.4, there are also screening techniques built into AERMOD that use simplified or limited chemistry assumptions for determining the partitioning of NO and NO_2 for NO_2 modeling. These screening techniques are part of the EPA's preferred modeling approach for NO_2 and do not need to be approved as an alternative model. However, as with other screening models and techniques, their usage shall occur in agreement with the appropriate reviewing authority (paragraph 3.0(b)).

e. As discussed in section 4.2(c)(ii), there are screening techniques needed for long-range transport assessments that will typically involve the use of a Lagrangian model. Based on the long-standing practice and documented capabilities of these models for long-range transport assessments, the use of a Lagrangian model as a screening technique for this purpose does not need to be approved as an alternative model. However, their usage shall occur in consultation with the appropriate reviewing authority (paragraph 3.0(b)) and EPA Regional Office.

f. All screening models and techniques shall be configured to appropriately address the site and problem at hand. Close attention must be paid to whether the area should be classified urban or rural in accordance with section 7.2.1.1. The climatology of the area must be studied to help define the worst-case meteorological conditions. Agreement shall be reached between the model user and the appropriate reviewing authority (paragraph 3.0(b)) on the choice of the screening model or technique for each analysis, on the input data and model settings, and the appropriate metric for satisfying regulatory requirements.

4.2.1.1 AERSCREEN

a. Released in 2011, AERSCREEN is the EPA's recommended screening model for simple and complex terrain for single sources including point sources, area sources, horizontal stacks, capped stacks, and flares. AERSCREEN runs AERMOD in a screening mode and consists of two main components: 1) the MAKEMET program which generates a site-specific matrix of meteorological conditions for input to the AERMOD model; and 2) the AERSCREEN command-prompt interface.

b. The MAKEMET program generates a matrix of meteorological conditions, in the form of AERMOD–ready surface and profile files, based on user-specified surface characteristics, ambient temperatures, minimum wind speed, and anemometer height. The meteorological matrix is generated based on looping through a range of wind speeds, cloud covers, ambient temperatures, solar elevation angles, and convective velocity scales (w*, for convective conditions only) based on user-specified surface characteristics for surface roughness (Z_o), Bowen ratio (B_o), and albedo (r). For unstable cases, the convective mixing height (Z_{ic}) is calculated based on w*, and the mechanical mixing height (Z_{im}) is calculated for unstable and stable conditions based on the friction velocity, u*.

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c. Other screening techniques may be acceptable for complex terrain cases where established procedures [43] are used. The user is encouraged to confer with the appropriate reviewing authority (paragraph 3.0(b)) if any unforeseen problems are encountered, e.g., applicability, meteorological data, receptor siting, or terrain contour processing issues.

4.2.2 Refined Models

a. A brief description of each preferred model for refined applications is found in appendix A. Also listed in that appendix are availability, the model input requirements, the standard options that shall be selected when running the program, and output options.

4.2.2.1 AERMOD

a. For a wide range of regulatory applications in all types of terrain, and for aerodynamic building downwash, the required model is AERMOD. [44] [45] The AERMOD regulatory modeling system consists of the AERMOD dispersion model, the AERMET meteorological processor, and the AERMAP terrain processor. AERMOD is a steady-state Gaussian plume model applicable to directly emitted air pollutants that employs best state-of-practice parameterizations for characterizing the meteorological influences and dispersion. Differentiation of simple versus complex terrain is unnecessary with AERMOD. In complex terrain, AERMOD employs the well-known dividing-streamline concept in a simplified simulation of the effects of plume-terrain interactions.

b. The AERMOD modeling system has been extensively evaluated across a wide range of scenarios based on numerous field studies, including tall stacks in flat and complex terrain settings, sources subject to building downwash influences, and low-level non-buoyant sources. [27] These evaluations included several long-term field studies associated with operating plants as well as several intensive tracer studies. Based on these evaluations, AERMOD has shown consistently good performance, with "errors" in predicted versus observed peak concentrations, based on the Robust Highest Concentration (RHC) metric, consistently within the range of 10 to 40 percent (cited in paragraph 4.1(e)).

c. AERMOD incorporates the PRIME algorithm to account for enhanced plume growth and restricted plume rise for plumes affected by building wake effects. [46] The PRIME algorithm accounts for entrainment of plume mass into the cavity recirculation region, including re-entrainment of plume mass into the wake region beyond the cavity.

d. AERMOD incorporates the Buoyant Line and Point Source (BLP) Dispersion model to account for buoyant plume rise from line sources. The BLP option utilizes the standard meteorological inputs provided by the AERMET meteorological processor.

e. The state-of-the-science for modeling atmospheric deposition is evolving, new modeling techniques are continually being assessed, and their results are being compared with observations. Consequently, while deposition treatment is available in AERMOD, the approach taken for any purpose shall be coordinated with the appropriate reviewing authority (paragraph 3.0(b)).

4.2.2.2 CTDMPLUS

a. If the modeling application involves an elevated point source with a well-defined hill or ridge and a detailed dispersion analysis of the spatial pattern of plume impacts is of interest, CTDMPLUS is available. CTDMPLUS provides greater resolution of concentrations about the contour of the hill feature than does AERMOD through a different plume-terrain interaction algorithm.

4.2.2.3 OCD

a. If the modeling application involves determining the impact of offshore emissions from point, area, or line sources on the air quality of coastal regions, the recommended model is the OCD (Offshore and Coastal Dispersion) Model. OCD is a straight-line Gaussian model that incorporates overwater plume transport and dispersion as well as changes that occur as the plume crosses the shoreline. OCD is also applicable for situations that involve platform building downwash.

4.2.3 Pollutant Specific Modeling Requirements

4.2.3.1 Models for Carbon Monoxide

a. Models for assessing the impact of CO emissions are needed to meet NSR requirements to address compliance with the CO NAAQS and to determine localized impacts from transportations projects. Examples include evaluating effects of point sources, congested roadway intersections and highways, as well as the cumulative effect of numerous sources of CO in an urban area.

b. The general modeling recommendations and requirements for screening models in section 4.2.1 and refined models in section 4.2.2 shall be applied for CO modeling. Given the relatively low CO background concentrations, screening techniques are likely to be adequate in most cases. In applying these recommendations and requirements, the existing 1992 EPA guidance for screening CO impacts from highways may be consulted. 47

4.2.3.2 Models for Lead

a. In January 1999 (40 CFR part 58, appendix D), the EPA gave notice that concern about ambient lead impacts was being shifted away from roadways and toward a focus on stationary point sources. Thus, models for assessing the impact of lead emissions are needed to meet NSR requirements to address compliance with the lead NAAQS and for SIP attainment demonstrations. The EPA has also issued guidance on siting ambient monitors in the vicinity of stationary point sources. [48] For lead, the SIP should contain an air quality analysis to determine the maximum rolling 3–month average lead concentration resulting from major lead point sources, such as smelters, gasoline additive plants, etc. The EPA has developed a post-processor to calculate rolling 3–month average concentrations from model output. [49] General guidance for lead SIP development is also available. [50]

b. For major lead point sources, such as smelters, which contribute fugitive emissions and for which deposition is important, professional judgment should be used, and there shall be coordination with the appropriate reviewing authority (paragraph 3.0(b)). For most applications, the general requirements for screening and refined models of section 4.2.1 and 4.2.2 are applicable to lead modeling.

4.2.3.3 Models for Sulfur Dioxide

a. Models for SO_2 are needed to meet NSR requirements to address compliance with the SO_2 NAAQS and PSD increments, for SIP attainment demonstrations, [51] and for characterizing current air quality via modeling. [52] SO_2 is one of a group of highly reactive gases known as "oxides of sulfur" with largest emissions sources being fossil fuel combustion at power plants and other industrial facilities.

b. Given the relatively inert nature of SO_2 on the short-term time scales of interest (i.e., 1–hour) and the sources of SO_2 (i.e., stationary point sources), the general modeling requirements for screening models in section 4.2.1 and refined

c. Regardless of the modeling system used to estimate secondary impacts of ozone and/or $PM_{2.5}$, model results should be compared to observation data to generate confidence that the modeling system is representative of the local and regional air quality. For ozone related projects, model estimates of ozone should be compared with observations in both time and space. For $PM_{2.5}$, model estimates of speciated $PM_{2.5}$components (such as sulfate ion, nitrate ion, etc.) should be compared with observations in both time and space. [65]

d. Model performance metrics comparing observations and predictions are often used to summarize model performance. These metrics include mean bias, mean error, fractional bias, fractional error, and correlation coefficient. [65] There are no specific levels of any model performance metric that indicate "acceptable" model performance. The EPA's preferred approach for providing context about model performance is to compare model performance metrics with similar contemporary applications. [60] [65] Because model application purpose and scope vary, model users should consult with the appropriate reviewing authority (paragraph 3.0(b)) to determine what model performance elements should be emphasized and presented to provide confidence in the regulatory model application.

e. There is no preferred modeling system or technique for estimating ozone or secondary $PM_{2.5}$ for specific source impacts or to assess impacts from multiple sources. For assessing secondary pollutant impacts from single sources, the degree of complexity required to assess potential impacts varies depending on the nature of the source, its emissions, and the background environment. The EPA recommends a two-tiered approach where the first tier consists of using existing technically credible and appropriate relationships between emissions and impacts developed from previous modeling that is deemed sufficient for evaluating a source's impacts. The second tier consists of more sophisticated case-specific modeling analyses. The appropriate tier for a given application should be selected in consultation with the appropriate reviewing authority (paragraph 3.0(b)) and be consistent with EPA guidance. 66

5.3 Recommended Models and Approaches for Ozone

a. Models that estimate ozone concentrations are needed to guide the choice of strategies for the purposes of a nonattainment area demonstrating future year attainment of the ozone NAAQS. Additionally, models that estimate ozone concentrations are needed to assess impacts from specific sources or source complexes to satisfy requirements for NSR and other regulatory programs. Other purposes for ozone modeling include estimating the impacts of specific events on air quality, ozone deposition impacts, and planning for areas that may be attaining the ozone NAAQS.

5.3.1 Models for NAAQS Attainment Demonstrations and Multi–Source Air Quality Assessments

a. Simulation of ozone formation and transport is a complex exercise. Control agencies with jurisdiction over areas with ozone problems should use photochemical grid models to evaluate the relationship between precursor species and ozone. Use of photochemical grid models is the recommended means for identifying control strategies needed to address high ozone concentrations in such areas. Judgment on the suitability of a model for a given application should consider factors that include use of the model in an attainment test, development of emissions and meteorological inputs to the model, and choice of episodes to model.Guidance on the use of models and other analyses for demonstrating attainment of the air quality goals for ozone is available. [59] [60] Users should consult with the appropriate reviewing authority (paragraph 3.0(b)) to ensure the most current modeling guidance is applied.

5.3.2 Models for Single–Source Air Quality Assessments

a. Depending on the magnitude of emissions, estimating the impact of an individual source's emissions of NO_X and VOC on ambient ozone is necessary for obtaining a permit. The simulation of ozone formation and transport requires realistic treatment of atmospheric chemistry and deposition. Models (e.g., Lagrangian and photochemical grid models) that integrate chemical and physical processes important in the formation, decay, and transport of ozone and important precursor species should be applied. Photochemical grid models are primarily designed to characterize precursor emissions and impacts from a wide variety of sources over a large geographic area but can also be used to assess the impacts from specific sources. [7] [11] [12]

b. The first tier of assessment for ozone impacts involves those situations where existing technical information is available (e.g., results from existing photochemical grid modeling, published empirical estimates of source specific impacts, or reduced-form models) in combination with other supportive information and analysis for the purposes of estimating secondary impacts from a particular source. The existing technical information should provide a credible and representative estimate of the secondary impacts from the project source. The appropriate reviewing authority (paragraph 3.0(b)) and appropriate EPA guidance [66] should be consulted to determine what types of assessments may be appropriate on a case-by-case basis.

c. The second tier of assessment for ozone impacts involves those situations where existing technical information is not available or a first tier demonstration indicates a more refined assessment is needed. For these situations, chemical transport models should be used to address single-source impacts. Special considerations are needed when using these models to evaluate the ozone impact from an individual source. Guidance on the use of models and other analyses for demonstrating the impacts of single sources for ozone is available. [66] This guidance document provides a more detailed discussion of the appropriate approaches to obtaining estimates of ozone impacts from a single source. Model users should use the latest version of the guidance in consultation with the appropriate reviewing authority (paragraph 3.0(b)) to determine the most suitable refined approach for single-source ozone modeling on a case-by-case basis.

5.4 Recommended Models and Approaches for Secondarily Formed $PM_{2.5}$

a. Models that estimate $PM_{2.5}$ concentrations are needed to guide the choice of strategies for the purposes of a nonattainment area demonstrating future year attainment of the $PM_{2.5}$ NAAQS. Additionally, models that estimate $PM_{2.5}$ concentrations are needed to assess impacts from specific sources or source complexes to satisfy requirements for NSR and other regulatory programs. Other purposes for $PM_{2.5}$ modeling include estimating the impacts of specific events on air quality, visibility, deposition impacts, and planning for areas that may be attaining the $PM_{2.5}$ NAAQS.

5.4.1 Models for NAAQS Attainment Demonstrations and Multi–Source Air Quality Assessments

a. Models for $PM_{2.5}$ are needed to assess the adequacy of a proposed strategy for meeting the annual and 24–hour $PM_{2.5}$NAAQS. Modeling primary and secondary $PM_{2.5}$ can be a multi-faceted and complex problem, especially for secondary components of $PM_{2.5}$ such as sulfates and nitrates. Control agencies with jurisdiction over areas with secondary $PM_{2.5}$ problems should use models that integrate chemical and physical processes important in the formation, decay, and transport of these species (e.g., photochemical grid models). Suitability of a modeling approach or mix of modeling approaches for a given application requires technical judgment as well as professional experience in choice of models, use of the model(s) in an attainment test, development of emissions and meteorological inputs to the model, and selection of days to model. Guidance on the use of models and other analyses for demonstrating attainment of the air quality goals for $PM_{2.5}$ is available. [59] [60] Users should consult with the appropriate reviewing authority (paragraph 3.0(b)) to ensure the most current modeling guidance is applied.

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5.4.2 Models for Single–Source Air Quality Assessments

a. Depending on the magnitude of emissions, estimating the impact of an individual source's emissions on secondary particulate matter concentrations may be necessary for obtaining a permit. Primary $PM_{2.5}$ components shall be simulated using the general modeling requirements in section 4.2.3.5. The simulation of secondary particulate matter formation and transport is a complex exercise requiring realistic treatment of atmospheric chemistry and deposition. Models should be applied that integrate chemical and physical processes important in the formation, decay, and transport of these species (e.g., Lagrangian and photochemical grid models). Photochemical grid models are primarily designed to characterize precursor emissions and impacts from a wide variety of sources over a large geographic area and can also be used to assess the impacts from specific sources.7 10 For situations where a project source emits both primary $PM_{2.5}$ and $PM_{2.5}$ precursors, the contribution from both should be combined for use in determining the source's ambient impact. Approaches for combining primary and secondary impacts are provided in appropriate guidance for single source permit related demonstrations. [66]

b. The first tier of assessment for secondary $PM_{2.5}$impacts involves those situations where existing technical information isavailable (e.g., results from existing photochemical grid modeling, published empirical estimates of source specific impacts, or reduced-form models) in combination with other supportive information andanalysis for the purposes of estimating secondaryimpacts from a particularsource. The existing technical information should provide a credible and representative estimate of the secondary impacts from the project source. The appropriate reviewing authority (paragraph 3.0(b)) and appropriate EPA guidance [66] should be consulted to determine compliance with the NO_2what types of assessmentsmay be appropriate on a case-by-case basis.

c. The second tier of assessment for secondary $PM_{2.5}$impacts involves those situations where existing technical information is not available or a first tier demonstration indicates a more refined assessment is needed. For these situations, chemical transport models should be used for assessments of single-sourceimpacts. Special considerations are needed when using these models to evaluate thesecondary particulate matter impact from an individual source. Guidance on the use of models and other analyses for demonstrating the impacts of single sources for secondary $PM_{2.5}$is available. [66] This guidance document provides a more detailed discussion of the appropriate approaches to obtaining

estimates of secondary particulate matter concentrations from a single source. Model users should use the latest version of this guidancein consultation with the appropriate reviewing authority (paragraph 3.0(b)) to determine the most suitable single-source modeling approach for secondary $PM_{2.5}$on a case-by-case basis.

6.0 Modeling for Air Quality Related Values and Other Governmental Programs

6.1 Discussion

a. Other federal government agencies and state, local, and tribal agencies with air quality and land management responsibilities have also developed specific modeling approaches for their own regulatory or other requirements. Although such regulatory requirements and guidance have come about because of EPA rules or standards, the implementation of such regulations and the use of the modeling techniques is under the jurisdiction of the agency issuing the guidance or directive. This section covers such situations with reference to those guidance documents, when they are available.

b. When using the model recommended or discussed in the Guideline in support of programmatic requirements not specifically covered by EPA regulations, the model user should consult the appropriate federal, state, local, or tribal agency to ensure the proper application and use of the models and/or techniques. These agencies have developed specific modeling approaches for their own regulatory or other requirements. Most of the programs have, or will have when fully developed, separate guidance documents that cover the program and a discussion of the tools that are needed. The following paragraphs reference those guidance documents, when they are available.

6.2 Air Quality Related Values

a. The 1990 CAA Amendments give FLMs an "affirmative responsibility" to protect the natural and cultural resources of Class I areas from the adverse impacts of air pollution and to provide the appropriate procedures and analysis techniques. The CAA identifies the FLM as the Secretary of the department, or their designee, with authority over these lands. Mandatory Federal Class I areas are defined in the CAA as international parks, national parks over 6,000 acres, and wilderness areas and memorial parks over 5,000 acres, established as of 1977. The FLMs are also concerned with the protection of resources in federally managed Class II areas because of other statutory mandates to protect these areas. Where state or tribal agencies have successfully petitioned the EPA and lands have been redesignated to Class I status, these agencies may have equivalent responsibilities to that of the FLMs for these non-federal Class I areas as described throughout the remainder of section 6.2.

b. The FLM agency responsibilities include the review of air quality permit applications from proposed new or modified major pollution sources that may affect these Class I areas to determine if emissions from a proposed or modified source will cause or contribute to adverse impacts on air quality related values (AQRVs) of a Class I area and making recommendations to the FLM. AQRVs are resources, identified by the FLM agencies, that have the potential to be affected by air pollution. These resources may include visibility, scenic, cultural, physical, or ecological resources for a particular area. The FLM agencies take into account the particular resources and AQRVs that would be affected; the frequency and magnitude of any potential impacts; and the direct, indirect, and cumulative effects of any potential impacts in making their recommendations.

indicated by the results of the first model run. Accordingly, the EPA neither anticipates nor encourages that numerous iterations of modeling runs be made to continually refine the receptor network.

9.2.3 NAAQS and PSD Increments Compliance Demonstrations for New or Modifying Sources

a. As described in this subsection, the recommended procedure for conducting either a NAAQS or PSD increments assessment under PSD permitting is a multi-stage approach that includes the following two stages:

i. The EPA describes the first stage as a single-source impact analysis, since this stage involves considering only the impact of the new or modifying source. There are two possible levels of detail in conducting a single-source impact analysis with the model user beginning with use of a screening model and proceeding to use of a refined model as necessary.

ii. The EPA describes the second stage as a cumulative impact analysis, since it takes into account all sources affecting the air quality in an area. In addition to the project source impact, this stage includes consideration of background, which includes contributions from nearby sources and other sources (e.g., natural, minor, and distant major sources).

b. Each stage should involve increasing complexity and details, as required, to fully demonstrate that a new or modifying source will not cause or contribute to a violation of any NAAQS or PSD increment. As such, starting with a single-source impact analysis is recommended because, where the analysis at this stage is sufficient to demonstrate that a source will not cause or contribute to any potential violation, this may alleviate the need for a more time-consuming and comprehensive cumulative modeling analysis.

c. The single-source impact analysis, or first stage of an air quality analysis, should begin by determining the potential of a proposed new or modifying source to cause or contribute to a NAAQS or PSD increment violation. In certain circumstances, a screening model or technique may be used instead of the preferred model because it will provide estimated worst-case ambient impacts from the proposed new or modifying source. If these worst case ambient concentration estimates indicate that the source will not cause or contribute to any potential violation of a NAAQS or PSD increment, then the screening analysis should generally be sufficient for the required demonstration under PSD. If the ambient concentration estimates indicate that the source's emissions have the potential to cause or contribute to a violation, then the use of a refined model to estimate the source's impact should be pursued. The refined modeling analysis should use a model or technique consistent with the Guideline (either a preferred model or technique or an alternative model or technique) and follow the requirements and recommendations for model inputs outlined in section 8. If the ambient concentration increase predicted with refined modeling indicates that the source will not cause or contribute to any potential violation of a NAAQS or PSD increment, then the refined analysis should generally be sufficient for the required demonstration under PSD. However, if the ambient concentration estimates from the refined modeling analysis indicate that the source's emissions have the potential to cause or contribute to a violation, then a cumulative impact analysis should be undertaken. The receptors that indicate the location of significant ambient impacts should be used to define the modeling domain for use in the cumulative impact analysis (section 8.2.2).

d. The cumulative impact analysis, or the second stage of an air quality analysis, should be conducted with the same refined model or technique to characterize the project source and then include the appropriate background concentrations (section 8.3). The resulting design concentrations should be used to determine whether the source will cause or contribute to a NAAQS or PSD increment violation. This determination should be based on: (1) The appropriate design concentration for each applicable NAAQS (and averaging period); and (2) whether the source's emissions cause or contribute to a violation at the time and location of any modeled violation (i.e., when and where the predicted design concentration is greater than the NAAQS). For PSD increments, the cumulative impact analysis should also consider the amount of the air quality increment that has already been consumed by other sources, or, conversely, whether increment has expanded relative to the baseline concentration. Therefore, the applicant should model the existing or permitted nearby increment-consuming and increment-expanding sources, rather than using past modeling analyses of

those sources as part of background concentration. This would permit the use of newly acquired data or improved modeling techniques if such data and/or techniques have become available since the last source was permitted.

9.2.3.1 Considerations in Developing Emissions Limits

a. Emissions limits and resulting control requirements should be established to provide for compliance with each applicable NAAQS (and averaging period) and PSD increment. It is possible that multiple emissions limits will be required for a source to demonstrate compliance with several criteria pollutants (and averaging periods) and PSD increments. Case-by-case determinations must be made as to the appropriate form of the limits, i.e., whether the emissions limits restrict the emission factor (e.g., limiting lb/MMBTU), the emission rate (e.g., lb/hr), or both. The appropriate reviewing authority (paragraph 3.0(b)) and appropriate EPA guidance should be consulted to determine the appropriate emissions limits on a case-by-case basis.

9.2.4 Use of Measured Data in Lieu of Model Estimates

a. As described throughout the Guideline, modeling is the preferred method for demonstrating compliance with the NAAQS and PSD increments and for determining the most appropriate emissions limits for new and existing sources. When a preferred model or adequately justified and approved alternative model is available, model results, including the appropriate background, are sufficient for air quality demonstrations and establishing emissions limits, if necessary. In instances when the modeling technique available is only a screening technique, the addition of air quality monitoring data to the analysis may lend credence to the model results. However, air quality monitoring data alone will normally not be acceptable as the sole basis for demonstrating compliance with the NAAQS and PSD increments or for determining emissions limits.

b. There may be rare circumstances where the performance of the preferred air quality model will be shown to be less than reasonably acceptable when compared with air quality monitoring data measured in the vicinity of an existing source. Additionally, there may not be an applicable preferred air quality model, screening technique, or justifiable alternative model suitable for the situation. In these unique instances, there may be the possibility of establishing emissions limits and demonstrating compliance with the NAAQS and PSD increments solely on the basis of analysis of observed air quality data in lieu of an air quality modeling analysis. However, only in the case of a modification to an existing source should air quality monitoring data alone be a basis for determining adequate emissions limits or for demonstration that the modification will not cause or contribute to a violation of any NAAQS or PSD increment.

c. The following items should be considered prior to the acceptance of an analysis of measured air quality data as the sole basis for an air quality demonstration or determining an emissions limit:

i. Does a monitoring network exist for the pollutants and averaging times of concern in the vicinity of the existing source?

ii. Has the monitoring network been designed to locate points of maximum concentration?

iii. Do the monitoring network and the data reduction and storage procedures meet EPA monitoring and quality assurance requirements?

iv. Do the dataset and the analysis allow impact of the most important individual sources to be identified if more than one source or emission point is involved?

v. Is at least one full year of valid ambient data available?

40 C.F.R. § 52.21

§ 52.21 Prevention of significant deterioration of air quality.

Effective: December 7, 2016
Currentness

(a)(1) Plan disapproval. The provisions of this section are applicable to any State implementation plan which has been disapproved with respect to prevention of significant deterioration of air quality in any portion of any State where the existing air quality is better than the national ambient air quality standards. Specific disapprovals are listed where applicable, in subparts B through DDD and FFF of this part. The provisions of this section have been incorporated by reference into the applicable implementation plans for various States, as provided in subparts B through DDD and FFF of this part. Where this section is so incorporated, the provisions shall also be applicable to all lands owned by the Federal Government and Indian Reservations located in such State. No disapproval with respect to a State's failure to prevent significant deterioration of air quality shall invalidate or otherwise affect the obligations of States, emission sources, or other persons with respect to all portions of plans approved or promulgated under this part.

(2) Applicability procedures.

(i) The requirements of this section apply to the construction of any new major stationary source (as defined in paragraph (b)(1) of this section) or any project at an existing major stationary source in an area designated as attainment or unclassifiable under sections 107(d)(1)(A)(ii) or (iii) of the Act.

(ii) The requirements of paragraphs (j) through (r) of this section apply to the construction of any new major stationary source or the major modification of any existing major stationary source, except as this section otherwise provides.

(iii) No new major stationary source or major modification to which the requirements of paragraphs (j) through (r)(5) of this section apply shall begin actual construction without a permit that states that the major stationary source or major modification will meet those requirements. The Administrator has authority to issue any such permit.

(iv) The requirements of the program will be applied in accordance with the principles set out in paragraphs (a)(2)(iv)(a) through (f) of this section.

(a) Except as otherwise provided in paragraphs (a)(2)(v) and (vi) of this section, and consistent with the definition of major modification contained in paragraph (b)(2) of this section, a project is a major modification for a regulated NSR pollutant if it causes two types of emissions increases—a significant emissions increase (as defined in paragraph (b)(40) of this section), and a significant net emissions increase (as defined in paragraphs (b)(3) and (b)(23) of this section). The project is not a major modification if it does not cause a significant emissions increase. If the project causes a significant emissions increase, then the project is a major modification only if it also results in a significant net emissions increase.

(b) The procedure for calculating (before beginning actual construction) whether a significant emissions increase (i.e., the first step of the process) will occur depends upon the type of emissions units being modified, according to paragraphs (a)(2)(iv)(c) through (f) of this section. The procedure for calculating (before beginning actual construction) whether a significant net emissions increase will occur at the major stationary source (i.e., the second step of the process) is contained in the definition in paragraph (b)(3) of this section. Regardless of any such preconstruction projections, a major modification results if the project causes a significant emissions increase and a significant net emissions increase.

(c) Actual-to-projected-actual applicability test for projects that only involve existing emissions units. A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions (as defined in paragraph (b)(41) of this section) and the baseline actual emissions (as defined in paragraphs (b)(48)(i) and (ii) of this section), for each existing emissions unit, equals or exceeds the significant amount for that pollutant (as defined in paragraph (b)(23) of this section).

(d) Actual-to-potential test for projects that only involve construction of a new emissions unit(s). A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the potential to emit (as defined in paragraph (b)(4) of this section) from each new emissions unit following completion of the project and the baseline actual emissions (as defined in paragraph (b)(48)(iii) of this section) of these units before the project equals or exceeds the significant amount for that pollutant (as defined in paragraph (b)(23) of this section).

(e) [Reserved]

(f) Hybrid test for projects that involve multiple types of emissions units. A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the emissions increases for each emissions unit, using the method specified in paragraphs (a)(2)(iv)(c) through (d) of this section as applicable with respect to each emissions unit, for each type of emissions unit equals or exceeds the significant amount for that pollutant (as defined in paragraph (b)(23) of this section).

(v) For any major stationary source for a PAL for a regulated NSR pollutant, the major stationary source shall comply with the requirements under paragraph (aa) of this section.

(vi) [Reserved]

(b) Definitions. For the purposes of this section:

(1)(i) Major stationary source means:

(a) Any of the following stationary sources of air pollutants which emits, or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant: Fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants (with thermal dryers), primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants (which does not include ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140), fossil-fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants;

(b) Notwithstanding the stationary source size specified in paragraph (b)(1)(i) of this section, any stationary source which emits, or has the potential to emit, 250 tons per year or more of a regulated NSR pollutant; or

(c) Any physical change that would occur at a stationary source not otherwise qualifying under paragraph (b)(1) of this section, as a major stationary source, if the changes would constitute a major stationary source by itself.

(ii) A major source that is major for volatile organic compounds or NO_X shall be considered major for ozone.

(iii) The fugitive emissions of a stationary source shall not be included in determining for any of the purposes of this section whether it is a major stationary source, unless the source belongs to one of the following categories of stationary sources:

(a) Coal cleaning plants (with thermal dryers);

(b) Kraft pulp mills;

(c) Portland cement plants;

(d) Primary zinc smelters;

(e) Iron and steel mills;

(f) Primary aluminum ore reduction plants;

(g) Primary copper smelters;

(h) Municipal incinerators capable of charging more than 250 tons of refuse per day;

(i) Hydrofluoric, sulfuric, or nitric acid plants;

(j) Petroleum refineries;

(k) Lime plants;

(l) Phosphate rock processing plants;

(m) Coke oven batteries;

(n) Sulfur recovery plants;

(o) Carbon black plants (furnace process);

(p) Primary lead smelters;

(q) Fuel conversion plants;

(r) Sintering plants;

(s) Secondary metal production plants;

(t) Chemical process plants—The term chemical processing plant shall not include ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140;

(u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;

(v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;

(w) Taconite ore processing plants;

(x) Glass fiber processing plants;

(y) Charcoal production plants;

(z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and

(aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

(2)(i) Major modification means any physical change in or change in the method of operation of a major stationary source that would result in: a significant emissions increase (as defined in paragraph (b)(40) of this section) of a regulated NSR pollutant (as defined in paragraph (b)(50) of this section); and a significant net emissions increase of that pollutant from the major stationary source.

(ii) Any significant emissions increase (as defined at paragraph (b)(40) of this section) from any emissions units or net emissions increase (as defined in paragraph (b)(3) of this section) at a major stationary source that is significant for volatile organic compounds or NO_X shall be considered significant for ozone.

(iii) A physical change or change in the method of operation shall not include:

(a) Routine maintenance, repair and replacement. Routine maintenance, repair and replacement shall include, but not be limited to, any activity(s) that meets the requirements of the equipment replacement provisions contained in paragraph (cc) of this section;

Note to paragraph (b)(2)(iii)(a): By court order on December 24, 2003, the second sentence of this paragraph (b)(2)(iii)(a) is stayed indefinitely. The stayed provisions will become effective immediately if the court terminates the stay. At that time, EPA will publish a document in the Federal Register advising the public of the termination of the stay.

(b) Use of an alternative fuel or raw material by reason of an order under sections 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) or by reason of a natural gas curtailment plant pursuant to the Federal Power Act;

(c) Use of an alternative fuel by reason of an order or rule under section 125 of the Act;

(d) Use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste;

(e) Use of an alternative fuel or raw material by a stationary source which:

(1) The source was capable of accommodating before January 6, 1975, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975 pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR subpart I or 40 CFR 51.166; or

(2) The source is approved to use under any permit issued under 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51.166;

(f) An increase in the hours of operation or in the production rate, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR subpart I or 40 CFR 51.166.

(g) Any change in ownership at a stationary source.

(h) [Reserved]

(i) The installation, operation, cessation, or removal of a temporary clean coal technology demonstration project, provided that the project complies with:

(1) The State implementation plan for the State in which the project is located, and

(2) Other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated.

(j) The installation or operation of a permanent clean coal technology demonstration project that constitutes repowering, provided that the project does not result in an increase in the potential to emit of any regulated pollutant emitted by the unit. This exemption shall apply on a pollutant-by-pollutant basis.

(k) The reactivation of a very clean coal-fired electric utility steam generating unit.

(iv) This definition shall not apply with respect to a particular regulated NSR pollutant when the major stationary source is complying with the requirements under paragraph (aa) of this section for a PAL for that pollutant. Instead, the definition at paragraph (aa)(2)(viii) of this section shall apply.

<Text of subsection (b)(2)(v) stayed effective March 30, 2011.>

(v) Fugitive emissions shall not be included in determining for any of the purposes of this section whether a physical change in or change in the method of operation of a major stationary source is a major modification, unless the source belongs to one of the source categories listed in paragraph (b)(1)(iii) of this section.

either the date the owner or operator begins actual construction of the project, or the date a complete permit application is received by the Administrator for a permit required under this section or by the reviewing authority for a permit required by a plan, whichever is earlier, except that the 10–year period shall not include any period earlier than November 15, 1990.

(a) The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions.

(b) The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above an emission limitation that was legally enforceable during the consecutive 24–month period.

(c) The average rate shall be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the major stationary source must currently comply, had such major stationary source been required to comply with such limitations during the consecutive 24–month period. However, if an emission limitation is part of a maximum achievable control technology standard that the Administrator proposed or promulgated under part 63 of this chapter, the baseline actual emissions need only be adjusted if the State has taken credit for such emissions reductions in an attainment demonstration or maintenance plan consistent with the requirements of § 51.165(a)(3)(ii)(G) of this chapter.

(d) For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24–month period must be used to determine the baseline actual emissions for all the emissions units being changed. A different consecutive 24–month period can be used For each regulated NSR pollutant.

(e) The average rate shall not be based on any consecutive 24–month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by paragraphs (b)(48)(ii)(b) and (c) of this section.

(iii) For a new emissions unit, the baseline actual emissions for purposes of determining the emissions increase that will result from the initial construction and operation of such unit shall equal zero; and thereafter, for all other purposes, shall equal the unit's potential to emit.

(iv) For a PAL for a stationary source, the baseline actual emissions shall be calculated for existing electric utility steam generating units in accordance with the procedures contained in paragraph (b)(48)(i) of this section, for other existing emissions units in accordance with the procedures contained in paragraph (b)(48)(ii) of this section, and for a new emissions unit in accordance with the procedures contained in paragraph (b)(48)(iii) of this section.

(49) Subject to regulation means, for any air pollutant, that the pollutant is subject to either a provision in the Clean Air Act, or a nationally-applicable regulation codified by the Administrator in subchapter C of this chapter, that requires actual control of the quantity of emissions of that pollutant, and that such a control requirement has taken effect and is operative to control, limit or restrict the quantity of emissions of that pollutant released from the regulated activity. Except that:

(i) Greenhouse gases (GHGs), the air pollutant defined in § 86.1818–12(a) of this chapter as the aggregate group of six greenhouse gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, shall not be subject to regulation except as provided in paragraphs (b)(49)(iv) through (v) of this section and shall not be subject to regulation if the stationary source maintains its total source-wide emissions below the GHG PAL level, meets the requirements in paragraphs (aa)(1) through (15) of this section, and complies with the PAL permit containing the GHG PAL.

(ii) For purposes of paragraphs (b)(49)(iii) through (v) of this section, the term tpy CO_2 equivalent emissions (CO_2e) shall represent an amount of GHGs emitted, and shall be computed as follows:

(a) Multiplying the mass amount of emissions (tpy), for each of the six greenhouse gases in the pollutant GHGs, by the gas's associated global warming potential published at Table A–1 to subpart A of part 98 of this chapter—Global Warming Potentials. For purposes of this paragraph, prior to July 21, 2014, the mass of the greenhouse gas carbon dioxide shall not include carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms (including products, by-products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material).

(b) Sum the resultant value from paragraph (b)(49)(ii)(a) of this section for each gas to compute a tpy CO_2e.

(iii) The term emissions increase as used in paragraphs (b)(49)(iv) through (v) of this section shall mean that both a significant emissions increase (as calculated using the procedures in paragraph (a)(2)(iv) of this section) and a significant net emissions increase (as defined in paragraphs (b)(3) and (b)(23) of this section) occur. For the pollutant GHGs, an emissions increase shall be based on tpy CO_2e, and shall be calculated assuming the pollutant GHGs is a regulated NSR pollutant, and "significant" is defined as 75,000 tpy CO_2e instead of applying the value in paragraph (b)(23)(ii) of this section.

(iv) Beginning January 2, 2011, the pollutant GHGs is subject to regulation if:

(a) The stationary source is a new major stationary source for a regulated NSR pollutant that is not GHGs, and also will emit or will have the potential to emit 75,000 tpy CO_2e or more; or

(b) The stationary source is an existing major stationary source for a regulated NSR pollutant that is not GHGs, and also will have an emissions increase of a regulated NSR pollutant, and an emissions increase of 75,000 tpy CO_2e or more; and,

(50) Regulated NSR pollutant, for purposes of this section, means the following:

(i) Any pollutant for which a national ambient air quality standard has been promulgated. This includes, but is not limited to, the following:

(a) $PM_{2.5}$ emissions and PM_{10} emissions shall include gaseous emissions from a source or activity, which condense to form particulate matter at ambient temperatures. On or after January 1, 2011, such condensable particulate matter shall be accounted for in applicability determinations and in establishing emissions limitations for $PM_{2.5}$ and PM_{10} in PSD permits. Compliance with emissions limitations for $PM_{2.5}$ and PM_{10} issued prior to this date shall not be based on condensable particulate matter unless required by the terms and conditions of the permit or the applicable implementation plan. Applicability determinations made prior to this date without accounting for condensable particulate matter shall not be considered in violation of this section unless the applicable implementation plan required condensable particulate matter to be included.

(b) Any pollutant identified under this paragraph (b)(50)(i)(b) as a constituent or precursor for a pollutant for which a national ambient air quality standard has been promulgated. Precursors identified by the Administrator for purposes of NSR are the following:

(1) Volatile organic compounds and nitrogen oxides are precursors to ozone in all attainment and unclassifiable areas.

(2) Sulfur dioxide is a precursor to $PM_{2.5}$ in all attainment and unclassifiable areas.

(3) Nitrogen oxides are presumed to be precursors to $PM_{2.5}$ in all attainment and unclassifiable areas, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to that area's ambient $PM_{2.5}$ concentrations.

(4) Volatile organic compounds are presumed not to be precursors to $PM_{2.5}$ in any attainment or unclassifiable area, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of volatile organic compounds from sources in a specific area are a significant contributor to that area's ambient $PM_{2.5}$ concentrations.

(ii) Any pollutant that is subject to any standard promulgated under section 111 of the Act;

(iii) Any Class I or II substance subject to a standard promulgated under or established by title VI of the Act;

(iv) Any pollutant that otherwise is subject to regulation under the Act as defined in paragraph (b)(49) of this section.

(v) Notwithstanding paragraphs (b)(50)(i) through (iv) of this section, the term regulated NSR pollutant shall not include any or all hazardous air pollutants either listed in section 112 of the Act, or added to the list pursuant to section 112(b)(2) of the Act, and which have not been delisted pursuant to section 112(b)(3) of the Act, unless the listed hazardous air pollutant is also regulated as a constituent or precursor of a general pollutant listed under section 108 of the Act.

(i) Any national ambient air quality standard in any air quality control region; or

(ii) Any applicable maximum allowable increase over the baseline concentration in any area.

(2) [Reserved by 78 FR 73702]

(l) Air quality models.

(1) All estimates of ambient concentrations required under this paragraph shall be based on applicable air quality models, data bases, and other requirements specified in appendix W of part 51 of this chapter (Guideline on Air Quality Models).

(2) Where an air quality model specified in appendix W of part 51 of this chapter (Guideline on Air Quality Models) is inappropriate, the model may be modified or another model substituted. Such a modification or substitution of a model may be made on a case-by-case basis or, where appropriate, on a generic basis for a specific state program. Written approval of the Administrator must be obtained for any modification or substitution. In addition, use of a modified or substituted model must be subject to notice and opportunity for public comment under procedures developed in accordance with paragraph (q) of this section.

(m) Air Quality Analysis—

(1) Preapplication analysis.

(i) Any application for a permit under this section shall contain an analysis of ambient air quality in the area that the major stationary source or major modification would affect for each of the following pollutants:

(a) For the source, each pollutant that it would have the potential to omit in a significant amount;

(b) For the modification, each pollutant for which it would result in a significant net emissions increase.

(ii) With respect to any such pollutant for which no National Ambient Air Quality Standard exists, the analysis shall contain such air quality monitoring data as the Administrator determines is necessary to assess ambient air quality for that pollutant in any area that the emissions of that pollutant would affect.

(iii) With respect to any such pollutant (other than nonmethane hydrocarbons) for which such a standard does exist, the analysis shall contain continuous air quality monitoring data gathered for purposes of determining whether emissions of that pollutant would cause or contribute to a violation of the standard or any maximum allowable increase.

57A Am. Jur. 2d Negligence § 415

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Negligence

Laura Hunter Dietz, J.D., Alan J. Jacobs, J.D., Theresa Leming, J.D., Lucas Martin, J.D., The National Legal Research Group, Inc., Jeffrey Shampo, J.D., Eric Surette, J.D., Lisa Zakolski, J.D.

VII. Proximate or Legal Cause

A. In General

1. Introduction; Terminology, Definitions, and Distinctions

§ 415. "Cause in fact"

Topic Summary | Correlation Table | References

West's Key Number Digest

- West's Key Number Digest, Negligence 371, 373, 375, 379

Treatises and Practice Aids

- Modern Tort Law: Liability and Litigation § 4:3

Cause in fact is an element of proximate cause, [1] which means that the wrongful act was a substantial factor in bringing about the injury and without which no harm would have been incurred. [2] "Causation" is an essential element of a prima facie case of negligence and means, at a minimum, causation in fact—that is, that the harm would not have occurred but for the defendant's conduct. [3]

Some courts distinguish between proximate cause and cause in fact, holding that while a defendant's conduct is the cause in fact of a plaintiff's injuries where the injuries would not have occurred but for that conduct, proximate cause is a limitation the law imposes upon the right to recover for the consequences of a negligent act. [4]

CUMULATIVE SUPPLEMENT

Cases:

Cause-in-fact element of proximate cause concerns whether the defendant's conduct is a material factor in bringing about the injury; a defendant's conduct is a material factor in bringing about the injury if, absent the conduct, the injury would not have occurred. Majetich v. P.T. Ferro Const. Co., 389 Ill. App. 3d 220, 329 Ill. Dec. 515, 906 N.E.2d 713 (3d Dist. 2009), appeal denied, 232 Ill. 2d 582, 331 Ill. Dec. 372, 910 N.E.2d 1128 (2009).

Causation in fact, one aspect of proximate cause, as an element of negligence, is concerned with the fundamental inquiry of whether defendant's conduct actually produced an injury. Hamilton v. Kirson, 439 Md. 501, 96 A.3d 714 (2014).

Causation, or cause in fact, as an element of negligence, means that the injury or harm would not have occurred but for the defendant's negligent conduct. Morrison v. Allen, 338 S.W.3d 417 (Tenn. 2011).

The test for cause in fact, as element of proximate cause, is whether the allegedly negligent act or omission was a substantial factor in causing the injury, without which the harm would not have occurred; if the defendant's negligence merely furnished a condition that made the injuries possible, there can be no cause in fact. Western Investments, Inc. v. Urena, 162 S.W.3d 547 (Tex. 2005).

"Cause in fact" in the context of an alleged premises defect means that the condition was a substantial factor in bringing about the injury which would not otherwise have occurred. Campos v. Nueces County, 162 S.W.3d 778 (Tex. App. Corpus Christi 2005), reh'g overruled, (May 26, 2005) and review denied, (Dec. 9, 2005).

[END OF SUPPLEMENT]

Footnotes

1 Downey v. Denton County, Tex., 119 F.3d 381 (5th Cir. 1997) (applying Texas law); USAir Inc. v. U.S. Dept. of Navy, 14 F.3d 1410 (9th Cir. 1994) (applying California law).
There is no distinction between legal cause and factual cause with respect to the law on proximate cause. Musch v. H-D Co-op., Inc., 487 N.W.2d 623 (S.D. 1992).

2 Gutierrez v. Excel Corp., 106 F.3d 683 (5th Cir. 1997) (applying Texas law).
Causation in fact depends on whether an act or omission played a material part in bringing about an event; the act or omission is not regarded as a "cause in fact" of the event if the particular event would have occurred without it. Fedorczyk v. Caribbean Cruise Lines, Ltd., 82 F.3d 69 (3d Cir. 1996) (applying New Jersey law).
"Cause in fact," occasionally referred to as actual cause, asks whether a defendant's conduct caused a plaintiff's injury. Stewart v. Federated Dept. Stores, Inc., 234 Conn. 597, 662 A.2d 753 (1995).
As to tests for cause in fact, see §§ 446 to 465.

3 Hiltgen v. Sumrall, 47 F.3d 695 (5th Cir. 1995) (applying Alabama law); Buckner v. Sam's Club, Inc., 75 F.3d 290 (7th Cir. 1996) (applying Indiana law).

4 U.S. v. St. Louis University, 336 F.3d 294, 61 Fed. R. Evid. Serv. 1222 (4th Cir. 2003) (applying Missouri law).
The element of causation may be broken into factual or "but-for" causation and legal or proximate causation; "factual causation" or "but-for causation" asks whether the complained of injury or damage would have occurred but for the act or omission of the party in question, while "proximate causation" or "legal causation" asks whether the act or omission of the party is of the nature that a court of law

will recognize it as a legal cause of the injury. Hiltgen v. Sumrall, 47 F.3d 695 (5th Cir. 1995) (applying Alabama law).

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