

ORAL ARGUMENT IS REQUESTED

No. 11-9552, No. 11-9557 & No. 11-9567

**IN THE UNITED STATES COURT OF APPEALS
FOR THE TENTH CIRCUIT**

WILDEARTH GUARDIANS,

Petitioner,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY and
Lisa Jackson, Administrator, United States Environmental Protection Agency,

Respondents.

PUBLIC SERVICE COMPANY OF NEW MEXICO,

Petitioner,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY and
Lisa Jackson, Administrator, United States Environmental Protection Agency,

Respondents.

SUSANA MARTINEZ, GOVERNOR OF THE STATE OF NEW MEXICO, AND NEW MEXICO
ENVIRONMENT DEPARTMENT.

Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY and
Lisa Jackson, Administrator, United States Environmental Protection Agency,

Respondents.

On Petitions for Review of Final Action of the
United States Environmental Protection Agency

BRIEF OF PETITIONERS IN NO. 11-9567
SUSANA MARTINEZ, GOVERNOR OF THE STATE OF NEW MEXICO,
AND THE NEW MEXICO ENVIRONMENT DEPARTMENT

(LIST OF COUNSEL APPEARS ON NEXT PAGE)

Jessica M. Hernandez
General Counsel
OFFICE OF GOVERNOR
SUSANA MARTINEZ
490 Old Santa Fe Trail #400
Santa Fe, New Mexico 87501
(505) 496-2200
Counsel for Petitioner
Governor Susana Martinez

Ryan Flynn, General Counsel
William G. Grantham, Assistant
General Counsel
NEW MEXICO ENVIRONMENT DEPARTMENT
1190 S. St. Francis Drive
P.O. Box 5469
Santa Fe, New Mexico 87502
(505) 827-2855
Counsel for Petitioner
New Mexico Environment Department

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STATEMENT OF RELATED CASES

There are no prior appeals, and there are no pending appeals related to Nos. 11-9552, 11-9557, and 11-9567.

GLOSSARY OF TERMS

BART:	Best Available Retrofit Technology
CAA:	(Federal) Clean Air Act
EGU:	Electric Generating Unit
EPA:	United States Environmental Protection Agency
Final Rule:	“Approval and Promulgation of Implementation Plans; New Mexico; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Best Available Retrofit Technology Determination, Final Rule.” 76 Fed. Reg. 52,388 (Aug. 22, 2011)
FIP:	Federal Implementation Plan
GCVTC:	Grand Canyon Visibility Transport Commission
mmBTU:	Million British Thermal Units
NMED:	New Mexico Environment Department
NOx:	Nitrogen Oxides
PNM:	Public Service Company of New Mexico
SCR:	Selective Catalytic Reduction
SIP:	State Implementation Plan
SJGS or San Juan:	San Juan Generation Station

SNCR: Selective Non-Catalytic Reduction

SO₂: Sulfur Dioxide

WRAP: Western Regional Air Partnership

JURISDICTIONAL STATEMENT

The New Mexico Environment Department (“NMED”), individually and on behalf of Susana Martinez, Governor of the State of New Mexico (“Petitioners”), seek review of a final action of the U.S. Environmental Protection Agency (“EPA” or “Agency”) entitled “Approval and Promulgation of Implementation Plans; New Mexico; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Best Available Retrofit Technology Determination, Final Rule.” 76 Fed. Reg. 52,388 (Aug. 22, 2011) (the “Final Rule”) (Joint Appendix (“JA”) ___). The petition for review of the Final Rule was filed on October 21, 2011, within the 60-day period prescribed by section 307(b)(1) of the Clean Air Act (“CAA” or the “Act”), 42 U.S.C. § 7607(b)(1).¹ This Court has jurisdiction under that provision.

STATEMENT OF ISSUES

1. Whether EPA’s promulgation of a Federal Implementation Plan (“FIP”) establishing Best Available Retrofit Technology (“BART”) emission limits for nitrogen oxides (“NO_x”) from the San Juan Generating Station (“SJGS” or “San Juan”) was arbitrary, capricious, an abuse of discretion, or otherwise contrary to law, where:

¹ Hereinafter, all citations in the brief are to the CAA; the Table of Authorities provides parallel citations to the U.S. Code.

(a) EPA usurped the authority and discretion afforded the State of New Mexico by the cooperative federalism scheme of the CAA generally, and by CAA §§ 110 and 169A in particular, in that EPA promulgated the BART FIP notwithstanding the previous submittal by New Mexico of a complete and approvable Regional Haze State Implementation Plan (“SIP”) that established a different BART determination that complied with the CAA and EPA’s long-standing BART rules, including EPA-established presumptive BART limits for NO_x emissions; and

(b) EPA determined that a consent decree setting deadlines for EPA action solely under CAA § 110(a)(2)(D) – the CAA’s provision addressing SIP requirements for “interstate transport” of pollutants – precluded EPA from considering New Mexico’s Regional Haze SIP for San Juan before EPA imposed a BART FIP pursuant to CAA §§ 110(c) and 169A; and

2. Whether EPA’s disapproval of the visibility component of New Mexico’s Interstate Transport SIP, which the State submitted in 2007 pursuant to CAA § 110(a)(2)(D), and its concomitant promulgation of an Interstate Transport FIP, was arbitrary, capricious, an abuse of discretion, or otherwise contrary to law, where:

(a) New Mexico developed and submitted its Interstate Transport SIP pursuant to applicable CAA provisions and complied with EPA guidance to the states; and

(b) a revised Interstate Transport SIP, submitted by New Mexico to EPA in 2011, incorporates an emission rate limit that is more stringent than the rate EPA stated was necessary and sufficient to meet CAA § 110 visibility-related interstate transport requirements.

STATUTES AND REGULATIONS

Pertinent statutes and regulations are reproduced in the Statutory and Regulatory Addendum.

STATEMENT OF THE CASE

The Final Rule challenged here does two things. First, invoking CAA § 110(c)(1), EPA promulgated as part of the Final Rule a FIP containing a BART determination for San Juan, an electricity-generating plant owned in part and operated by Public Service Company of New Mexico (“PNM”).² The BART FIP establishes a federally-enforceable emission limit for NO_x of 0.05 pounds per million British thermal units (“lb/mmBtu”), a limit that would require the installation at San Juan of an extremely expensive type of “post-combustion” emission controls known as selective catalytic reduction (“SCR”) at each of San Juan’s four electric generating units (“EGUs”). At the time EPA promulgated this FIP, the State of New Mexico

² PNM separately petitioned this Court for review of the Final Rule. *Public Service Co. of New Mexico v. EPA*, No. 11-9557, which the Court consolidated for purposes of briefing and oral argument with this case and with the petition for review of the Final Rule that WildEarth Guardians filed in No. 11-9552.

had already submitted – but EPA had refused to consider – a SIP addressing BART for San Juan that would establish a NO_x emission limit of 0.23 lb/mmBtu, which is the presumptive limit established by EPA rulemaking for EGUs like the ones at San Juan, based on an entirely different, and much less expensive, post-combustion control technology known as selective *noncatalytic* reduction (“SNCR”).

Second, EPA in the Final Rule disapproved a portion of New Mexico’s Interstate Transport SIP, first submitted by the state in 2007 pursuant to CAA § 110(a)(2)(D). In conjunction with this disapproval, EPA promulgated an Interstate Transport FIP, establishing emission limits for San Juan, ostensibly needed to prohibit emissions from San Juan from “interfering with” CAA-mandated visibility protection measures required to be included in other states’ SIPs.

On October 21, 2011, Petitioners filed a petition with EPA requesting that the Agency reconsider the Final Rule and stay its effectiveness pending reconsideration. PNM separately sought reconsideration and a stay from EPA. To date, EPA has not acted on these requests.

On November 23, 2011, Petitioners moved this Court for a stay of the Final Rule. PNM filed a separate motion for a stay on November 25. The motions were denied by an order dated March 1, 2012.

STATEMENT OF FACTS

I. Statutory and Regulatory Background

Two provisions of the CAA addressing “visibility” protection are implicated by the actions taken by EPA in the Final Rule. The first is CAA § 169A, a provision that, among other things, directs EPA to develop regulations (*i.e.*, “Regional Haze” rules) that require each state’s SIP to contain emission limits and other measures that the state determines may be necessary to make reasonable progress toward Congress’s goal of preventing any future, and remedying any existing, impairment of visibility in certain statutorily specified geographic areas. The second is CAA § 110(a)(2)(D)(i)(II) (which is an element of the Act’s “interstate transport” requirement), a provision that directs that each state’s SIP contain provisions that prohibit any emissions within that state from “interfer[ing]” with measures that are required under Part C of Title I of the Act (a part of the CAA that includes § 169A) to be included in any *other* state’s SIP to protect visibility.

Each of these provisions, which were added to the Act by the CAA Amendments of 1977, is discussed in turn below. First, however, it is necessary to address the provisions of CAA § 110, dating from the inception of the CAA in 1970, that establish what states must include in their SIPs in order for them to be “approvable” by EPA, and that define the scope of EPA’s authority to promulgate a FIP where a state’s plan is not approvable.

A. CAA § 110: SIP Development and Approval and FIP Promulgation

Upon its enactment in 1970, the CAA established a state-federal cooperative program for attaining within each state the national ambient air quality standards (“NAAQS”) that EPA establishes for certain pollutants under § 109 of the Act. Under CAA § 110(a)(1),³ states were called on to submit to EPA for its consideration and approval SIPs containing emission limitations and certain other measures directed toward attainment and maintenance of the NAAQS. The specific requirements for SIPs were described in CAA § 110(a)(2).

Under CAA § 110(a), as it was enacted in 1970, EPA was required to approve or disapprove SIP submittals within four months of submittal by the state.⁴ If a state failed to submit a SIP, or if EPA disapproved a SIP, EPA was required by CAA § 110(c)(1) to adopt an implementation plan “for a State.” Under CAA § 110(c)(1) as it then read, EPA was directed to “promptly prepare and publish proposed regulations setting forth an implementation plan, or portion thereof” where (i) a state had failed altogether to “submit an implementation plan”; (ii) the state *had* submitted a plan, which plan EPA thereafter “determined . . . not to be in accordance with the

³ This provision was codified in 1970 at 42 U.S.C. § 1857c-5(a)(1) (1976). The current codification of the CAA (*i.e.*, 42 U.S.C. §§ 7401 *et seq.*) was established at the time the Act was amended in 1977.

⁴ Under CAA § 110(a)(3), EPA was similarly required to “approve any *revision* of an implementation plan” where such revision “meets the requirements of paragraph (2)” of § 110(a) (emphasis added).

requirements” of CAA § 110(a)(2); or (iii) the state had failed, after being afforded notice by EPA that it was necessary for the state to revise its SIP, to submit such revision. *See* 42 U.S.C. § 1857c-5(c)(1)(A), (B), (C) (1976).

CAA § 110(c)(1) provided that EPA was required “within six months after the date required for [SIP] submission” to “promulgate any such regulations” setting forth an implementation plan “*unless*, prior to such promulgation,” the state had “adopted and submitted a plan (or revision) which [EPA] determines to be in accordance with the requirements of this section” (emphasis added). EPA-promulgated plans were eventually to become known as federal implementation plans, or FIPs.

In its seminal decision in *Train v. Natural Resources Defense Council*, 421 U.S. 60 (1975), the Supreme Court identified and described the scope of, and the boundary between, the respective responsibilities of the states and EPA under CAA § 110. The Court observed that EPA is “plainly charged by the Act with the responsibility for setting” the NAAQS. 421 U.S. at 78-79. “Just as plainly,” the Court continued, EPA is “relegated by the Act to a *secondary* role in the process of determining and enforcing the specific, source-by-source emission limitations” that are “necessary if the national standards it has set are to be met.” *Id.* at 79 (emphasis added). Thus, under CAA § 110(a)(2), EPA is “*required* to approve a state plan which provides for the timely maintenance of ambient air standards” and “which also satisfies that section’s other general requirements.” *Id.* (emphasis in original).

In light of this, the Supreme Court determined, the CAA “gives the Agency *no authority* to question the wisdom of a State’s choices of emission limitations” if such choices are “part of a plan which satisfies the standards of § 110(a)(2).” *Id.* (emphasis added). Accordingly, EPA “may devise and promulgate a specific plan of its own *only if* a State fails to submit an implementation plan which satisfies those standards.” *Id.* (emphasis added). Accordingly, the Court concluded, “so long as the ultimate effect of a State’s choice is compliance with the national standards for ambient air,” the “State is at liberty to adopt whatever mix of emission limitations it deems best suited to its particular situation.” *Id.*

The Supreme Court reiterated this understanding of the fundamental division of responsibilities between the states and EPA under CAA § 110 in *Union Electric Co. v. EPA*, 427 U.S. 246 (1976). “Each State,” the Supreme Court explained, is “given wide discretion in formulating its plan,” and the CAA provides that EPA “*shall approve*’ the proposed plan if it has been adopted after public notice and hearing and if it meets” the “specified criteria” set forth in CAA § 110(a)(2). *Id.* at 250 (emphasis added). This judicial confirmation of the narrow limits of EPA’s role under CAA § 110 is well established and, indeed, virtually axiomatic. *See, e.g., Luminant Generation Co. v. EPA*, ___ F.3d ___, 2012 WL 999435 (5th Cir. March 26, 2012) at *1 (“With regard to implementation, the Act confines the EPA to the ministerial function of reviewing SIPs for consistency with the Act’s requirements.”).

The CAA Amendments of 1990 made a number of technical changes to CAA § 110,⁵ generally reorganizing certain of its provisions; enlarging some of the timeframes for state and EPA action; adding a new subsection (k) that, among other things, directs the Agency to develop criteria for assessing the “completeness” of state submittals;⁶ and otherwise making various conforming changes to reflect these additions and the section’s reorganization.⁷

At the same time, following the 1990 Amendments, the requirements set forth in CAA § 110(a)(2) continue to govern the scope of EPA’s discretion to approve or disapprove SIPs and SIP revisions. If a SIP or SIP revision meets the requirements of CAA § 110(a)(2), EPA is required to approve it. Specifically, as amended in 1990, the

⁵ Congress has not significantly amended the relevant provisions of the CAA since enactment of the 1990 Amendments.

⁶ New subsection (k) directs EPA to develop “minimum criteria” that any SIP (or SIP revision) must meet in order to be deemed “complete,” while further specifying that EPA must determine, within 60 days after EPA receives a state’s SIP or SIP revision, whether such submittal meets these minimum “completeness” criteria. See CAA § 110(k)(1)(B). Where EPA fails to make, within six months, an affirmative determination that a state’s submittal is not “complete,” the SIP submittal is “deemed by operation of law to meet” the completeness criteria. *Id.* Conversely, where EPA finds that a state submittal “does not meet the minimum [completeness] criteria,” the state “shall be treated as not having made the submission.” CAA § 110(k)(1)(C).

⁷ See, e.g., *Virginia v. EPA*, 108 F.3d 1397, 1406 (D.C. Cir. 1997) (“Enacted more than a quarter of a century ago, section 110 has gone through many changes, but its basic structure has survived.”); see also *Natural Res. Def. Council v. Browner*, 57 F.3d 1122, 1123 (D.C. Cir. 1995) (“In 1990, Congress amended the Act to revise the timing and content of the SIP requirements. . .”).

CAA provides that EPA “shall approve” a “plan or plan revision” that a “State has submitted” if it “meets all the applicable requirements” of the Act. *See* CAA § 110(k)(3). EPA must take final action to approve or disapprove the state’s submittal within 12 months of either the Agency’s determining that the submittal is “complete” or the submittal’s being “deemed” complete “by operation of law.” *Id.* § 110(k)(2).

The 1990 CAA Amendments also revised CAA § 110(c)(1) so as to afford EPA more time – *i.e.*, two years, instead of the six months previously specified by the 1970 version of the CAA – in which to act where EPA finds that a state failed to make a required submittal altogether or that a state submittal does not satisfy the “completeness” criteria of subsection (k) or where EPA had disapproved a state submittal. Specifically, as CAA § 110(c)(1) currently reads, EPA is authorized to “promulgate a Federal implementation plan at any time within 2 years” after the EPA Administrator

(A) finds that a State has failed to make a required submission or finds that the plan or plan revision submitted by the State does not satisfy the minimum criteria established under section [110(k)(1)(A)], or

(B) disapproves a State implementation plan submission in whole or in part,

unless the State corrects the deficiency, and the Administrator approves the plan or plan revision, before the Administrator promulgates such Federal implementation plan.

See CAA § 110(c)(1)(A), (B).⁸ Whether EPA was authorized by this provision of the Act to promulgate a BART FIP for San Juan in the Final Rule, even though New Mexico had submitted a complete and approvable SIP, is one of the principal questions in the present cases.

B. CAA § 169A: Visibility Protection and Regional Haze

Congress established the CAA's visibility protection program when it amended the Act in 1977. As relevant here, CAA § 169A establishes as a national goal the "prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal which impairment results from manmade air pollution." CAA § 169A(a)(1).⁹ The statute further directs EPA to issue regulations that will "assure . . . reasonable progress toward meeting the national goal," and requires each state to submit a SIP containing "such emission limits, schedules of compliance and

⁸ As revised in 1990, CAA § 110(c)(1)'s use of the term "Federal implementation plan" was the first time that term had actually appeared in the Act. The 1990 CAA Amendments defined "Federal implementation plan" in relevant part to mean "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" CAA § 302(y).

⁹ The term "mandatory class Federal areas" is defined as "Federal areas which may not be designated as other than class I." CAA § 169A(g)(5). "Class I" areas include all international parks, national wilderness areas that exceed 5,000 acres in size, national memorial parks that exceed 5,000 acres in size, and national parks that exceed 6,000 acres in size and that were in existence on August 7, 1977. CAA § 162(a).

other measures as may be necessary to make reasonable progress toward meeting the national goal.” CAA § 169A(a)(4).

EPA first promulgated regulations in 1999 to address the regional haze component of the CAA visibility program. *See generally American Corn Growers Ass’n v. EPA*, 291 F.3d 1 (D.C. Cir. 2002). As EPA defines it, “regional haze” is “visibility impairment caused by geographically-dispersed sources emitting fine particles and their precursors into the air.” *See id.* at 3. The emission and movement of sulfur dioxide (“SO₂”), NO_x, and fine particulate matter (“PM_{2.5}”) from sources such as power plants contribute to regional haze. *Id.*

EPA’s 1999 regional haze rules were challenged on various grounds, vacated in part by the D.C. Circuit in *American Corn Growers*, and thereafter, in 2005, revised by the Agency on remand in response to the D.C. Circuit’s decision. *See* 70 Fed. Reg. 39,104 (July 6, 2005) (JA ___). EPA’s regional haze rules are today codified at 40 C.F.R. § 51.301 (definitions) and §§ 51.308-51.309.¹⁰

One aspect of the regional haze program’s approach to achieving reasonable progress toward the national goal that is particularly pertinent here is the requirement that states determine and impose “best available retrofit technology,” or BART, for “BART-eligible” sources that are “subject to BART.” BART-eligible sources are,

¹⁰ Under those rules, Regional Haze SIPs were due to be submitted by December 17, 2007. *See* 74 Fed. Reg. 2392 (Jan. 15, 2009).

generally, individual sources of sizeable amounts of the aforementioned visibility-impairing pollutants that are within certain statutorily specified source categories (including fossil fuel-fired steam electric plants, or EGUs, of a certain size) and that were in existence on August 7, 1977, but had not been in operation for more than 15 years as of that date. *See* CAA § 169A(b)(2)(A); 40 C.F.R. § 51.301 (defining “existing stationary facility”). A BART-eligible source is “subject to BART” if, based on an analysis of visibility impacts, it “may reasonably be anticipated to cause or contribute to any impairment of visibility in any mandatory Class I Federal area.” 40 C.F.R. § 51.308(e)(1)(ii).

Determining BART for a specific source requires consideration of five factors:

the costs of compliance, the energy and nonair quality environmental impacts of compliance, any existing pollution control technology in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

CAA § 169A(g)(2); *see also* 40 C.F.R. § 51.301 (definition of BART). For certain categories of EGUs, EPA in its 2005 regional haze rules established, through notice-and-comment rulemaking, presumptive BART emission limits applicable to emissions of NO_x and SO₂. Significantly, EPA established presumptive BART limits for NO_x for most categories of coal-fired EGUs based on combustion controls only – and not post-combustion controls such as SCR. *See* 70 Fed. Reg. 39,172; 40 C.F.R. Part 51, App. Y (“Guidelines for BART Determinations Under the Regional Haze Rule” or

the “BART Guidelines”)(JA ___); *id.* at § IV.E.5 Table 1 (presumptive BART limits)(JA ___).

In *American Corn Growers*, the D.C. Circuit emphasized that the “states . . . play the lead role in designing and implementing regional haze programs” generally, and that, in particular, the CAA “giv[es] the states broad authority over BART determinations.” *American Corn Growers*, 291 F.3d at 2, 8 (citing CAA §§ 169A(b)(2)(A); 169A(g)(2)). Indeed, the basis for the court’s determination that key elements of EPA’s 1999 Regional Haze rule pertaining to BART determinations were invalid was that the rule, as it then existed, “impermissibly constrain[s] state authority” to make decisions regarding BART limits for individual sources, *i.e.*, that EPA had imposed limits on state BART-determining authority “in contravention of the Act.” *Id.* at 8; *see id.* at 8-9 (the 1999 “Haze Rule’s BART provisions are contrary to the text, structure and history of § 169A of the Act because the rule isolates § 169A(g)(2)’s [visibility] benefit calculation” and “constrains authority Congress conferred on the states”).

C. CAA § 110(a)(2)(D)(i)(II): Interstate Transport Requirements

When Congress added the visibility protection provisions of CAA § 169A to the CAA in 1977, at the same time it made revisions to CAA § 110(a)(2) – *i.e.*, the portion of the Act that, as noted previously, specifies the elements that states are required to include in their SIPs in order for those plans to be “approvable” by EPA. Relevant here are the interstate transport provisions of CAA § 110(a)(2)(D), which, as

they read today, provide in pertinent part that “[e]ach implementation plan submitted by a State . . . shall”

(D) contain adequate provisions—

(i) prohibiting . . . any source of other types of emissions activity within the State from emitting any air pollutant in amounts which will—

....

(II) interfere with *measures required to be included* in applicable implementation plan *for any other State* under Part C . . . to *protect visibility*.

CAA § 110(a)(2)(D)(i)(II) (emphases added).¹¹

In 1997, EPA promulgated new NAAQS for ozone and PM_{2.5}, triggering a requirement under CAA § 110(a)(1) that each state revise its SIP to address “implementation, maintenance, and enforcement” of the new NAAQS “within such State.” *Id.* In a guidance document issued on August 15, 2006, EPA directed states to address the requirements of CAA § 110(a)(2)(D)(i) when revising their SIPs to account for the revised ozone and PM_{2.5} NAAQS. *See* “Guidance for State Implementation Plan (SIP) Submissions to Meet Current and Outstanding

¹¹ Before Congress enacted the CAA’s first visibility protection requirements in 1977, CAA § 110(a)(2) contained a “transport” requirement that was directed solely at “emissions of air pollutants from sources located in any air quality control region” that would “interfere with the attainment or maintenance” of NAAQS. *See* 42 U.S.C. § 1857c-5(a)(2)(E) (1976). The 1977 CAA Amendments retained the transport requirement pertaining to NAAQS – *i.e.*, the current CAA § 110(a)(2)(D)(i)(I) – while adding a comparable provision directed (in part) at visibility protection (*i.e.*, subclause (II)).

Obligations under Section 110(a)(2)(D)(i) for the 8-Hour Ozone and PM_{2.5} National Ambient Air Quality Standards (the “2006 Interstate Transport Guidance”)(JA ___).

In particular, the 2006 Interstate Transport Guidance gave direction to the states as to how to implement CAA § 110(a)(2)(D)(i)(II). EPA said that, while states were then “under an obligation to submit SIPs that contain measures to address regional haze,” insofar as these regional haze SIP submittals were not due until December 17, 2007 (*i.e.*, not for, at that time, another 16 months), it was “premature to determine whether or not State SIPs for 8-hour ozone or PM_{2.5} contain adequate provisions to prohibit emissions that interfere with measures in other States’ SIPs designed to address regional haze.” 2006 Interstate Transport Guidance at 9 (JA ___). EPA’s logic was that it is impossible to determine whether emissions from sources in one state “*will . . . interfere with measures required to be included*” in the SIP “for any other State . . . to protect visibility” where such “required” measures are yet to be adopted by such “other State” and determined by EPA to be approvable as applicable SIP provisions. *See* CAA § 110(a)(2)(D)(i)(II) (emphasis added).

For that reason, the 2006 Interstate Transport Guidance placed the submission by states and approval by EPA of regional haze SIPs addressing BART and other visibility requirements temporally ahead of any interstate transport SIP revisions that addressed any substantive emission limits. In the interim, EPA said, states could properly “make a SIP submission confirming that it is not possible at this time to assess whether there is any interference with measures in the applicable SIP” of any

other state “designed to ‘protect visibility’ for the 8-hour ozone and PM_{2.5} NAAQS until regional haze SIPs are submitted and approved” by EPA under § 110 of the CAA. 2006 Interstate Transport Guidance at 9-10 (JA ___-___).

II. Factual Background

The State of New Mexico has long been at the forefront in addressing regional haze. New Mexico was an active participant in the Grand Canyon Visibility Transport Commission (“GCVTC”)¹² and the Western Regional Air Partnership (“WRAP”),¹³ which helped develop the programs and policies now codified in EPA’s Regional Haze rules.

¹² The GCVTC was established pursuant to § 169B(c) and (f) of the CAA, which was enacted as part of the 1990 CAA Amendments. The GCVTC was created to advise EPA on strategies for protecting visual air quality at national parks and wilderness areas on the Colorado Plateau. The GCVTC region included nine states and 211 tribal lands. The states are: Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Utah, and Wyoming. Acting pursuant to Congressional mandate, the Commission developed a regional emissions inventory, a technical basis to assess visibility impacts, and a number of emission management scenarios. After extensive public outreach, the Commission issued its final report in June of 1996. New Mexico was a full participant in the GCVTC.

¹³ WRAP is a voluntary organization of western states, tribes, and federal agencies tasked with performing regional planning activities needed by states and tribes to implement EPA’s Regional Haze rules. The original charge of the WRAP was to do the follow-up work needed to implement the 70-plus recommendations of the GCVTC. New Mexico, through an appointee of the Governor, participated fully on the WRAP’s governing Board, and also contributed staff support to various technical and policy committees that developed detailed recommendations for Board approval.

A description of New Mexico's efforts both to (i) determine BART for San Juan under CAA § 169A and EPA's Regional Haze rules and (ii) develop an Interstate Transport SIP addressing visibility that meets the requirements of CAA § 110(a)(2)(D)(i)(II) is provided below. The actions EPA took during this same time period, culminating in the Final Rule, are then described.

A. Establishing BART for San Juan Under CAA § 169A

As part of its ongoing efforts to remedy and prevent regional haze, from 2006 through 2011, NMED conducted extensive information-gathering and analyses to determine BART for San Juan.¹⁴ New Mexico's BART determination for San Juan began on November 9, 2006, when NMED notified PNM that San Juan was a BART-eligible facility and that a BART analysis was required. PNM submitted an initial BART demonstration on June 6, 2007. Responding to NMED's requests for additional analyses, PNM provided further air quality modeling and cost data in November 2007, March 2008, May 2008, August 2008, March 2009, and February 2011. During this period, PNM also provided responses to numerous, more narrowly focused requests for information.

¹⁴ As was the case with most of the other states, New Mexico did not meet the December 17, 2007 deadline for submitting its Regional Haze SIP. *See* 74 Fed. Reg. 2393 (Jan. 15, 2009) (finding "that '37 states, the District of Columbia, and the U.S. Virgin Islands have failed to make all or part of the required SIP submissions to address regional haze," and that this "finding starts the two year clock for the promulgation by EPA of a FIP").

After thorough consideration of these analyses in accordance with EPA's BART Guidelines, NMED proposed on February 28, 2011 a Regional Haze SIP which, among other things, contained the State's BART determination for San Juan. Specifically, that SIP sets the NO_x limit for each of the EGUs at SJGS at 0.23 lb/mmBtu, using SNCR.¹⁵ That emission limit meets the presumptive NO_x BART limit previously established by EPA rulemaking for the type of units, and the type of coal burned, at San Juan. *See* 70 Fed. Reg. at 39,172.

On June 3, 2011, the New Mexico Environmental Improvement Board approved the proposed SIP. On June 29, 2011, Governor Martinez submitted New Mexico's Regional Haze SIP to EPA, which received it on July 5, 2011. (JA ___ - ___).

B. The New Mexico Interstate Transport SIP

Separate and apart from its work to establish BART for San Juan in conjunction with its Regional Haze SIP, New Mexico had earlier developed and submitted to EPA, in September 2007, a SIP revision that, among other things, addressed the requirement of CAA § 110(a)(2)(D)(i)(II) that a SIP "contain adequate provisions . . . prohibiting" emissions from within the state that "will . . . interfere

¹⁵ At one point during this process, under a prior gubernatorial administration in New Mexico, NMED had prepared a draft SIP, dated June 23, 2010, which contained a proposed BART determination that would have required the installation of SCR at SJGS to meet a NO_x emission rate between 0.03 and 0.07 lb/mmBtu. That draft SIP was withdrawn in December 2010 shortly before the beginning of the term of Petitioner Governor Martinez. The draft was never subject to a hearing, never adopted as a state rule, and never submitted to EPA for approval.

with measures required to be included in the applicable implementation for any other State . . . to protect visibility” (the “Interstate Transport SIP”) (JA ___-___). New Mexico’s SIP submittal complied with EPA’s 2006 Interstate Transport Guidance (*see* pp. 16-17, *supra*) as the Agency itself acknowledged. *See* 76 Fed. Reg. 494 (Jan. 5, 2011)(JA ___- ___).¹⁶

EPA received New Mexico’s Interstate Transport SIP on September 17, 2007. EPA was required by CAA § 110(k)(1) to take final action on that submittal – *i.e.*, either approve it or disapprove it – no more than 18 months, or by March 17, 2009.¹⁷ EPA missed that statutory deadline. Only with its promulgation of the Final Rule challenged here, some four years later, did EPA take final action on that SIP.

In the meantime, EPA’s failure to meet its obligation to take timely action on the Interstate Transport SIP submitted by New Mexico (and Interstate Transport SIPs submitted by several other states) had not gone unnoticed. In June 2009, WildEarth Guardians sued EPA in the District Court for the Northern District of

¹⁶ Thereafter, in June 2011, at the same time it submitted to EPA its Regional Haze SIP with its SNCR-based BART limit of 0.23/lb mmBtu for San Juan, New Mexico submitted to EPA its 2011 Supplemental Interstate Transport SIP incorporating that same limit (JA ___-___).

¹⁷ As noted above, CAA § 110(k)(1)(B) requires that EPA take action on a SIP revision within 12 months of its determining that the submittal is “complete,” while further specifying that a SIP revision “shall . . . be deemed by operation of law” to be complete within six months of submittal *unless* EPA makes an express finding of incompleteness within that time. *Id.* Therefore, absent such an express finding, the Agency must act on a SIP within 18 months of receiving it.

California under section 304(a)(2) of the CAA, alleging that EPA had failed to perform a nondiscretionary duty under CAA § 110(k) either to approve a SIP or to promulgate a FIP for New Mexico (and for each of six other states) addressing interstate transport with respect to required visibility measures under CAA § 110(a)(2)(D)(i)(II). *WildEarth Guardians v. Jackson*, No. 09-cv-02453.

The *WildEarth Guardians* suit culminated in the entry of a consent decree in which EPA agreed to take action, by specified deadlines, on the pending interstate transport SIPs, including New Mexico's Interstate Transport SIP. In particular, the consent decree, as amended, established August 5, 2011, as the date by which EPA was required either to approve New Mexico's 2007 interstate submittal or to disapprove it and promulgate a FIP in its place. *WildEarth Guardians v. Jackson*, Notice of Stipulated Extensions to Consent Decree Deadlines at 2 (Apr. 28, 2011). Nothing in the *WildEarth Guardians* consent decree addressed any obligation on the part of New Mexico to submit a Regional Haze SIP, much less required EPA to take any action to promulgate a separate NO_x BART FIP for San Juan that would only be part of such a Regional Haze SIP.

C. EPA's Proposed and Final Rules

While NMED was developing its Regional Haze SIP, including a BART determination for San Juan, on January 5, 2011, EPA published a proposed rule partially disapproving the pending Interstate Transport SIP that New Mexico had submitted to EPA in September 2007. 76 Fed. Reg. 491 (Jan. 5, 2011)(JA __- __).

EPA predicated its proposed disapproval on that SIP's alleged failure to comply with the requirement of CAA § 110(a)(2)(D)(i)(II) that "emissions from New Mexico sources . . . not interfere with measures required in the SIP of any other state . . . to protect visibility." *Id.*

EPA proposed this disapproval notwithstanding the representations it made in its 2006 Interstate Transport Guidance that, in the absence of neighboring states' adoption and submittal, and EPA's approval, of Regional Haze SIPs, it was, by definition, "premature to determine whether or not State SIPs . . . contain adequate provisions to prohibit emissions that interfere with measures in other States' SIPs designed to address regional." *See* pp. 16, *supra*. Consistent with that EPA guidance, New Mexico in its 2007 submittal had adopted EPA's approach by "mak[ing] a simple SIP submission confirming that it is not possible at this time to assess whether there is any interference with measures in the applicable SIP for another State . . . until regional haze SIPs are submitted and approved" by EPA. *See id.* Nothing had changed in regard to neighboring state SIPs since EPA had issued this guidance.

Nevertheless, and notwithstanding the absence of visibility-protection "measures" determined to be statutorily "required to be included" in other states' SIPs that could be "interfere[d] with" by San Juan's emissions, EPA now determined that air quality modeling analysis undertaken by WRAP, *see* note 13 *supra*, provided an "appropriate means for designing a FIP" that would "ensure that emissions from sources in New Mexico" did not "interfer[e] with the visibility programs of other

states, as contemplated in section 110(a)(2)(D)(i)(II).” 76 Fed. Reg. at 496 (JA ___). With respect to San Juan specifically, EPA stated that WRAP had assumed in its prior air modeling that “SJGS would achieve NOx emission rates of 0.27 lbs/mmBtu for units 1 and 3, and 0.28 lbs/mmBtu for units 2 and 4.” *Id.* at 498 (JA ___). Based on this WRAP modeling assumption, EPA asserted, “additional control” would be “necessary” at San Juan to ensure that emissions from the plant did not “interfere” with other states’ efforts to “protect visibility,” insofar as SJGS was currently subject to a federally enforceable “NOx emission limit of 0.30 lb/mmBtu for all [four] units,” a limit that was “less restrictive” than the rates EPA said WRAP had incorporated in its modeling. *Id.* at 497, 498 (JA __, __).

In addition to proposing to disapprove New Mexico’s 2007 Interstate Transport SIP revision, EPA also proposed to promulgate a FIP, ostensibly to prevent emissions from New Mexico sources from interfering with other states’ CAA-required measures to protect visibility. EPA proposed in this FIP to impose a 0.05 lb/mmBtu limit on NOx emissions from each unit at San Juan, based on installation and use of SCR, while proposing to address the CAA regional haze program’s BART requirement by establishing that same NOx emission limit for each of the San Juan units. EPA admitted that it “drew heavily upon the NOx BART portion” of the withdrawn draft regional haze SIP that NMED had prepared in June 2010 but that was neither adopted as a state rule nor submitted to EPA. *See* 76 Fed Reg. at 498 (JA ___).

Comments on EPA's proposed disapproval of the Interstate Transport SIP revision and its proposed BART FIP for San Juan were due in April 2011. By that time, NMED had already issued *its* proposed Regional Haze SIP and BART determination for San Juan, which establishes NO_x emission limits of 0.23 lb/mmBtu, based on the installation and use of SNCR. For that reason, New Mexico, PNM, and other commenters urged EPA to await formal submittal of that SIP (which was expected within a few months), so that the Agency could consider it pursuant to CAA § 110(k)(2) (JA __, JA __).

Subsequently, during the state hearings on the proposed Regional Haze SIP, EPA submitted comments on the plan for San Juan that New Mexico was considering. (JA __-__). EPA noted in its comments that SCR achieves greater NO_x reductions than does SNCR (albeit at significantly higher cost), and that greater emission reductions would, EPA projected, produce greater visibility improvements at some Class I areas. (JA __) But EPA in its comments did not argue that the SNCR-based SIP was legally deficient. Nor did EPA suggest in its comments that EPA could decline to review and act on the SIP before taking final rulemaking action on the FIP it had proposed in January 2011.

EPA took final action on the proposed FIP when it promulgated the Final Rule on August 4, 2011, notice of which appeared in the *Federal Register* on August 22, 2011. By that time, EPA had before it the New Mexico Regional Haze SIP – reflecting the State's SNCR-based BART determination for San Juan – that Governor

Martinez had submitted in June 2011.¹⁸ In its Federal Register notice announcing the Final Rule, EPA acknowledged that it “did receive a New Mexico [Regional Haze] SIP . . . on July 5, 2011,” but stated that the plan “came several years after the statutory deadline, and after the close of the comment period on today’s action.” 76 Fed. Reg. at 52,390 (JA ___).

Thus, EPA, which had missed the statutory deadlines for its own actions with respect to New Mexico visibility and transport implementation plan requirements under the CAA, decided it would not consider the New Mexico Regional Haze SIP because that SIP was submitted after expiration of a statutory deadline. EPA instead proceeded with promulgation of its BART FIP for San Juan. As justification for its refusal even to consider the State’s submittal and either to approve or disapprove it under CAA § 110(k), EPA for the first time invoked the consent decree in the *WildEarth Guardians* litigation, arguing that the Agency’s obligation to take action by August 5, 2011, on New Mexico’s long-pending 2007 Interstate Transport SIP authorized EPA to ignore the pending Regional Haze SIP submittal and impose a BART FIP for San Juan at the same time it disapproved the 2007 Interstate Transport SIP and imposed an Interstate Transport FIP. “It would not have been possible,”

¹⁸ EPA also had before it New Mexico’s 2011 Supplemental Interstate Transport SIP, with its NO_x limit of 0.23 lb/mmBtu for all four of the SJGS units, *see* note 16, *supra*, a limit that was *more* stringent than the 0.27 lb/mmBtu limit (for Units 1 and 3) and the 0.28 lb/mmBtu limit (for Units 2 and 4) that EPA said had been assumed in the WRAP modeling.

EPA stated, “to review the July 5, 2011 [Regional Haze] SIP submission, propose a rulemaking, and promulgate a final action by the dates required by the consent decree” for EPA action on an Interstate Transport implementation plan. 76 Fed. Reg. at 52,390 (JA ___).

EPA further asserted, in explaining its decision not to address the New Mexico Regional Haze SIP, that EPA had “the specific authority to promulgate a FIP imposing a NO_x BART emission limitation upon the SJGS,” notwithstanding New Mexico’s submission of a Regional Haze SIP with a different BART emission limit for SJGS, because EPA had “previously found that New Mexico had failed to submit a complete [Regional Haze] SIP by December 17, 2007.” 76 Fed. Reg. at 52,419 (citing 74 Fed. Reg. 2392) (JA ___). This finding, EPA continued, “started a two year clock for the promulgation of a [Regional Haze] FIP by EPA or the approval of a complete [Regional Haze] SIP from New Mexico.” *Id.* (citing CAA § 110(c)(1)). “To prevent a possible conflict between a NO_x visibility transport emission limitation FIP for the SJGS and the “NO_x . . . BART emission limitation FIP” for SJGS, EPA was choosing “to promulgate now, rather than later, the NO_x . . . BART determination for the SJGS,” so as to “provide greater certainty” to PNM “as to the appropriate NO_x controls needed to meet those two separate but related requirements,” *i.e.*, BART and Interstate Transport. *Id.*

SUMMARY OF ARGUMENT

EPA's promulgation of the BART FIP for San Juan was unlawful and arbitrary and capricious. Under the plain language of CAA § 110(c)(1), EPA is authorized to promulgate a FIP where (1) a state has failed to submit a SIP (or has submitted a SIP that the Agency determines to be incomplete); or (2) a state has submitted a SIP but EPA determines that the plan does not meet the requirements of the CAA. At the time EPA promulgated the BART FIP, pending before it was a Regional Haze SIP (containing the State's different BART determination for San Juan) that New Mexico had formally adopted and submitted to EPA for approval. Under the language and structure of CAA § 110 as interpreted by the Supreme Court in *Train*, EPA was required to consider that State submittal before promulgating a FIP. Because the State's BART determination for San Juan clearly complies with the CAA and EPA's own regulations, EPA was required to approve it.

EPA's disapproval of the visibility component of New Mexico's 2007 Interstate Transport SIP, and EPA's concurrent promulgation of a FIP imposing an SCR-based NOx emission limit of 0.05 lb/mmBtu on San Juan, were also unlawful. The 2007 Interstate Transport SIP submitted by New Mexico satisfied EPA's own guidance regarding the requirements that such SIPs must meet, and EPA had no basis under CAA § 110(a)(2)(D)(i)(II) to disapprove it on the grounds that emissions from San Juan would "interfere" with visibility-protection "measures required to be included" in other states' plans, because there were, at the time EPA took its action, no such

“measures” included in the plans of those states that might conceivably be affected by San Juan’s emissions. Because the only justification in the record that EPA provided for its Interstate Transport FIP’s 0.05 lb/mmBtu NO_x emission limit is that it is the same as the limit EPA unlawfully determined to constitute BART for the plant, EPA’s promulgation of its Interstate Transport FIP and its disapproval of the 2007 Interstate Transport SIP are unlawful as well.

STANDARD OF REVIEW

Under CAA § 307(d), this Court sets aside final EPA action under the Act that is subject to that subsection and that the Court finds is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law”; “in excess of statutory jurisdiction, authority, or limitations, or short of statutory right”; or “without observance of procedure required by law.” CAA § 307(d)(9)(A), (C), (D). The Final Rule is subject to CAA § 307(d) because it promulgates FIPs. CAA § 307(d)(1)(B); 76 Fed. Reg. at 52,439 (JA ___).

ARGUMENT

I. EPA’s Promulgation of the BART FIP Is Unlawful.

Statutory deadlines under the Clean Air Act have been treated by EPA as, in effect, aspirational (and often unrealistic) expressions of congressional intent that EPA fulfill its rulemaking obligations within a prescribed timeframe. When these deadlines are missed – and the history of CAA implementation is replete with examples that, in the aggregate, show that deadlines for EPA action under the Act are

rarely met – courts may be asked to establish new schedules for EPA to adopt lawful rules. In the absence of a court-imposed deadline, EPA must determine its pace of action consistent with the statutory standards governing the lawful formulation of the rule in question. Deadlines (and EPA’s missing those deadlines) have never been thought to permit EPA to short-circuit the substantive and procedural requirements that govern the promulgation of a particular rule. *See, e.g., Natural Res. Def. Council v. EPA*, 22 F.3d 1125, 1135-37 (D.C. Cir. 1994).

In this case, EPA missed every statutory deadline related to the visibility protection requirements in the New Mexico SIP. EPA missed the statutory deadline for promulgation of rules defining the requirements that New Mexico and other states must include in their regional haze visibility SIPs.¹⁹ EPA missed the deadline either to approve or to disapprove the SIP revision submitted by New Mexico in September

¹⁹ Section 169B(e) of the CAA required EPA to promulgate regional haze rules “within eighteen months of receipt of the report” of the GCVTC that was required pursuant to CAA § 169B(d) and (f). The GCVTC issued its report with its “recommendations to EPA” in June 1996. 62 Fed. Reg. 41,138, 41,141 (July 31, 1997) (proposing regional haze rules). That made EPA’s final regional haze rules due no later than December 1997. EPA, however, did not promulgate those rules until July 1999, 18 months after EPA’s statutorily mandated deadline. 62 Fed. Reg. 35,714 (July 1, 1999). Thereafter, in *American Corn Growers*, the D.C. Circuit found critical aspects of the 1999 final rules unlawful – in large part because, as discussed above, those rules trampled on the rights and prerogatives of states as established in the statute – and remanded them to EPA for further rulemaking. EPA did not complete that rulemaking and promulgate final, lawful rules until July 2005, 70 Fed. Reg. 39,104 (July 6, 2005), seven-and-a-half years after the congressional deadline.

2007 to address interstate visibility impacts.²⁰ EPA missed the January 2011 deadline for promulgating a regional haze SIP that would include BART limitations (a deadline that, because EPA chose to make the finding of failure to submit a SIP in January 2009, was entirely self-imposed). In fact, the deadline governing New Mexico's visibility SIP requirements that existed at the time EPA promulgated the Final Rule was a court-imposed deadline (previously extended to allow EPA to meet its rulemaking obligations) of August 5, 2011, directing EPA either to approve the September 2007 Interstate Transport SIP or to promulgate a interstate transport FIP for New Mexico.

As noted above, in this case, EPA's statutory authority to adopt a BART FIP for New Mexico, containing a BART determination for San Juan, arose from its finding, published on January 15, 2009, that New Mexico had failed to submit a regional haze SIP under CAA § 169A. Although EPA could have proposed a BART FIP for San Juan at any point after it made that finding, EPA chose to delay proposal of a BART FIP while New Mexico was working to develop a regional haze SIP that contained an SCR-based BART determination that was to EPA's liking.

Thereafter, the November 2010 gubernatorial election placed Petitioner Governor Martinez in line to take office on January 1, 2011. The looming change in

²⁰ That deadline was March 2009, 18 months after EPA received the SIP. *See* CAA § 110(k)(1), (2). EPA did not take final action on that SIP until August 2011, almost two-and-a-half years after the statutory deadline for that action.

administrations, with a Governor of a different political party than her predecessor, brought with it the natural expectation that the policy priorities of New Mexico might well also change. *Cf. Chevron v. Natural Res. Def. Council*, 467 U.S. 837, 865 (an agency exercising “delegated policymaking responsibilities may, within the limits of that delegation, properly rely upon the incumbent administration’s views of wise policy to inform its judgments”). On Friday, December 17, 2010, the outgoing New Mexico administration withdrew the draft regional haze SIP that it had prepared. EPA immediately went into action. Three days later,²¹ the EPA’s acting Regional Administrator signed a proposed BART FIP rule for San Juan based on SCR.

During the time EPA was conducting rulemaking on its proposed BART FIP, New Mexico proceeded to develop a Regional Haze SIP that included a BART determination for San Juan that was based on SNCR. This SIP, unlike EPA’s proposed BART FIP, conformed to the presumptive emission limits that EPA’s BART Guidelines established for controlling NO_x emissions from facilities like San Juan. EPA in public comments on New Mexico’s Regional Haze SIP never raised any legal objections to the selection of SNCR as BART, but instead expressed a policy preference for more stringent and more costly SCR.

²¹ *See* 76 Fed. Reg. at 506 (JA ___) (showing that the proposed BART FIP rule was signed by the EPA Acting Regional Administrator on December 20, 2010).

The New Mexico Regional Haze SIP was formally submitted to EPA for approval on June 29, 2011, and received by EPA on July 5, 2011. On August 4, 2011, EPA promulgated a BART FIP that satisfied EPA's own policy preference for SCR, ignoring the fact that, in submitting its Regional Haze SIP, New Mexico had under CAA § 110(c)(1)(B) "correct[ed] the deficiency" that had triggered EPA's authority to propose its FIP in the first place. As discussed below, EPA misapprehended the scope of its authority under CAA § 110(c)(1), and the role Congress intended EPA to play, in these circumstances. In doing so, EPA failed to respect the primacy of the role that the CAA assigns to New Mexico to determine the content of its Regional Haze SIP that includes BART for San Juan, a determination that, so long as it meets the requirements of the Act and the relevant implementing regulations, may reflect the State's *current* policy preferences and *override* EPA's policy preferences. The missing of a deadline (either by New Mexico or by EPA) did not excuse EPA from its fundamental obligation under CAA § 110 to consider, and to take action on, New Mexico's submittal before taking final action to promulgate a FIP.

- A. New Mexico's Submittal of Its Regional Haze SIP Precluded EPA from Proceeding To Promulgate a BART FIP for San Juan.**
 - 1. EPA Has No Authority Under CAA § 110(c)(1) To Promulgate a BART FIP for San Juan Unless and Until EPA Considers the BART SIP Submitted by New Mexico and Determines that the SIP Does Not Meet the CAA's Applicable Requirements.**

By its plain terms, the CAA authorizes EPA to promulgate a FIP in either of two – and only two – circumstances: *i.e.*, (1) where a state “failed to make a required submission” of a SIP or SIP revision (and EPA makes a finding to that effect);²² or (2) where a state *has* submitted a SIP or SIP revision, *and* EPA “disapproves [the] submission in whole or in part.” *See* CAA § 110(c)(1)(A), (B). Neither of these circumstances existed at the time EPA promulgated the BART FIP for San Juan. As a consequence, EPA’s action here was unlawful.

When EPA proposed its BART FIP in January 2011, New Mexico had not yet submitted a Regional Haze SIP containing a BART determination for San Juan. EPA did, however, receive the State’s Regional Haze SIP before EPA issued the Final Rule. Upon receipt of New Mexico’s SIP, EPA was no longer authorized to promulgate a BART FIP. The language and structure of CAA § 110 dictate that EPA “may devise *and promulgate* a specific plan of its own *only if* a State *fails to submit* an implementation

²² Section 110(c)(1) also authorizes EPA to promulgate a FIP where the Agency “finds that the plan or plan revision” submitted by a state “does not satisfy the minimum [completeness] criteria” established under CAA § 110(k)(1)(A). Where EPA has made an affirmative finding that a SIP or SIP revision does “not satisfy the minimum [completeness] criteria,” the state is “treated as not having made the submission.” *Id.* at § 110(k)(1)(C). No such findings were made with respect to the New Mexico SIPs at issue in this appeal. Because both of those SIPs were received by EPA on July 5, 2011, both of those SIPs were deemed by operation of law on January 5, 2012 (*i.e.*, six months after receipt by EPA) to meet the EPA-established criteria for completeness. *See* CAA § 110(k)(1)(B).

plan which satisfies” the requirements of CAA § 110(a)(2). *See Train*, 421 U.S. at 79 (emphases added).

Accordingly, once EPA received New Mexico’s Regional Haze SIP, the Agency’s obligation under CAA § 110(c)(1) to promulgate a BART FIP for San Juan was discharged and its authority to do so was extinguished. EPA was required instead to proceed to determine whether the State’s Regional Haze SIP was “complete” and, if so, whether the SIP “meets all of the applicable requirements” of the Act. CAA § 110(k)(1), (3). If the SIP meets those requirements, EPA must approve it. *Id.* This determination by EPA is but a “ministerial function.”²³ Only if, and only after, EPA makes a determination that New Mexico’s Regional Haze SIP was not complete or did not meet (in whole or in part) those requirements would EPA be authorized to disapprove the SIP, an action that would then revive EPA’s authority and obligation to adopt a BART FIP under CAA § 110(c)(1)(B).

EPA appears to read CAA § 110(c)(1) in a way that allows, or perhaps even requires, EPA to ignore the submitted Regional Haze SIP. *See, e.g.*, 76 Fed. Reg. 52,419 (JA __) (“We have the specific authority to promulgate a FIP imposing a NO_x BART emission limitation upon the SJGS because we previously found that New Mexico had failed to submit a complete [Regional Haze] SIP by December 17, 2007,” and “[t]his finding started a two year clock for the promulgation of a [Regional Haze]

²³ *See Luminant Generation Co.*, 2012 WL 999435 at *1.

FIP by EPA or the approval of a complete [Regional Haze] SIP from New Mexico.”); *id.* at 52,420 (JA ___) (“Because . . . New Mexico did not *timely formulate and submit* its BART determinations, we have the authority and responsibility to make a NOx BART determination for SJGS.”) (emphasis added). But EPA ignored that, although Congress intended that EPA take action, within a specified period of time, after a finding that a state had failed to make a required submittal, this requirement as to *when* EPA should act does not change *how* EPA must act when a state has submitted a SIP for the Agency’s consideration, when such submittal occurs before FIP promulgation.

EPA’s action here, in which it refused to address New Mexico’s submittal, fundamentally conflicts with how the respective responsibilities of EPA and the states under CAA § 110 have been understood for 40 years. As the Supreme Court explained in *Train*, the CAA gives EPA “*no authority* to question the wisdom of a State’s choices of emission limitations” if those choices are “part of a plan which satisfies the standards of § 110(a)(2).” 421 U.S. at 79 (emphasis added). This, in turn, necessarily requires that EPA determine whether a state’s plan “satisfies the standards” of CAA § 110(a)(2), no matter when such plan has been submitted to EPA for approval, before the Agency can assume the authority to promulgate a plan for the state under CAA § 110(c)(1).²⁴

²⁴ The 1990 CAA Amendments expanded the six month period for FIP promulgation to two years but did not otherwise make substantive changes to this

(Continued . . .)

Indeed, because the CAA confines “EPA to the ministerial function of reviewing SIPs for consistency with the Act’s requirements,”²⁵ a determination by EPA that a state’s submittal is not “consistent[] with” the CAA’s requirements must always precede promulgation of a FIP. EPA has no authority under the CAA to promulgate a FIP intended to meet the requirements of CAA § 110(a)(2) where a state has adopted, and submitted to EPA for approval, its own different SIP that also satisfies the requirements of CAA § 110(a)(2).

Thus, once EPA was in receipt of New Mexico’s Regional Haze SIP, EPA was required to consider it, in order to ascertain whether that SIP would “meet the requirements” of the Act and thereby divest EPA of its authority to promulgate a FIP. To be sure, EPA made a finding in January 2009 that New Mexico had “failed to make a required submission,” and New Mexico submitted its Regional Haze SIP more than two years after that finding. Nevertheless, EPA cannot, consistent with its responsibilities under CAA § 110, and given the limits of its own statutory authority as interpreted by the Supreme Court in *Train*, cling to that initial finding, which has been overtaken by events, and ignore the reality that the situation has now changed. To do

aspect of CAA § 110(c)(1). *See Virginia v. EPA*, 108 F.3d at 1409, 1410 (the “changes to section 110, at least as they concern EPA’s approval of State Plans, were predominantly of syntax, not substance,” and those amendments “did not alter the division of responsibilities between EPA and the states in the section 110 process,” as discussed in *Train*).

²⁵ *See Luminant Generation Co.*, 2012 WL 999435 at *1.

so not only runs afoul of the language and structure of CAA § 110, but violates basic principles of administrative law. *Cf., e.g., Bechtel v. FCC*, 957 F. 2d 873, 881 (D.C. Cir. 1992) (quoting *WWHT, Inc. v. FCC*, 656 F.2d 807, 819 (D.C. Cir. 1981) (“In the rulemaking context . . . it is settled law that an agency may be forced to reexamine its approach ‘if a significant factual predicate of a prior decision . . . has been removed.”); accord *Maier v. EPA*, 114 F. 3d 1032, 1040 (10th Cir. 1997).

Finally, the very terms by which the CAA defines “Federal implementation plan” – *i.e.*, a plan “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 SIP, CAA § 302(y) – underscore that only *after* EPA has determined pursuant to CAA § 110(k) that a state plan does not “meet . . . the applicable requirements” of the Act is EPA authorized to promulgate a FIP. That determination is the prerequisite for EPA’s knowing whether there is a “gap” in the SIP for EPA to “fill” or an “inadequacy” for it to “correct.” Here, EPA never made that determination before it promulgated its FIP.

2. The BART Determination Submitted by New Mexico Meets the Act’s Requirements, and EPA Was and Is Required to Approve It.

As a general proposition, the CAA assigns “primary responsibility” for regulating sources of air pollution to the states. *See* CAA §§ 101(a)(3), 107(a). This general allocation of responsibility to the states was emphatically reinforced by Congress when it enacted in 1977 the visibility provisions at issue here. Section 169A of the Act requires implementation of emission limits reflecting BART, as determined

by the state, on certain sources that, as determined by the state, cause or contribute to visibility impairment at a “mandatory class I federal area.” CAA § 169A(b)(2). In determining BART, each state is to consider all of the statutory factors, but its decision as to how to do so *and the weight to give each factor in a particular case* cannot be constrained or second-guessed by EPA. *See American Corn Growers*, 291 F.3d at 8 (CAA § 169A “giv[es] the states broad authority over BART determinations”); *cf. New York v. Reilly*, 969 F.2d 1147, 1150 (D.C. Cir. 1992); *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1045-47 (D.C. Cir. 1978).

When EPA promulgated its BART FIP for San Juan on August 4, 2011, the Agency was aware and acknowledged that the State had submitted a Regional Haze SIP, and that SIP contained a BART determination for the plant that fully satisfied EPA’s own BART Guidelines. *See* pp. 18-19, *supra*. Given the broad authority afforded to New Mexico by the CAA in weighing the statutory factors and reaching a BART determination, EPA understood too that it would be legally obligated to approve that BART SIP once it considered it on the merits. Moreover, CAA § 110(k) imposes on EPA an inescapable statutory obligation to consider the SIP and to approve it if it meets the applicable requirements of the Act.

SCR (*i.e.*, the technology determined to be BART for San Juan by EPA in its FIP) and SNCR (*i.e.*, the technology determined to be BART by New Mexico in its SIP) are distinct controls, technologically and economically. SCR is post-combustion equipment (*i.e.*, equipment that is placed at a point in the process that is after the

combustion chamber) that must be constructed and added to a site to chemically process gases emitted from the source. SNCR, in contrast, involves injection of chemicals into the existing combustion chamber to reduce NO_x in the gas as it leaves the combustion chamber.

While both SCR and SNCR are available technologies that can be considered in BART determinations, from a cost standpoint, the two are mutually exclusive. Moreover, the 0.05 lb/mmBtu NO_x limit that the BART FIP imposes on the San Juan units is far more stringent than the “presumptive” BART limit (0.23 lb/mmBtu) that is established by EPA’s own BART Guidelines for the category of combustion equipment and coal that is used at San Juan. Indeed, that limit is based on a control technology (*i.e.*, “combustion controls”) that is less expensive than SNCR, and much less expensive than SCR. In any event, EPA was well aware that its imposition of SCR as BART for San Juan would foreclose, from a cost standpoint, the plant’s changing to SNCR at some later time (*e.g.*, after EPA had considered and approved the New Mexico BART SIP).

New Mexico completed the full, five-factor analysis in evaluating BART for San Juan in accordance with EPA’s own BART Guidelines. *See* pp.18-19, *supra*. The SIP satisfies the “presumptive” BART limit for NO_x emissions established by EPA’s

own BART guidelines (*i.e.*, 0.23 lb/mmBtu, for the boiler and coal type at San Juan).²⁶ EPA, however, was dismissive of the New Mexico SIP, characterizing the State's determination as a mere "recommendation for BART determinations." 76 Fed. Reg. at 52,393 (JA ___). Although EPA notes that it intends at some point to "review the State [BART] SIP submittal," it suggests that only "if there is significant new information" that might change EPA's determination of BART in the FIP, would EPA "make revisions to today's [EPA BART] decision." *Id.* at 52,394. (JA ___)

This puts the matter almost perfectly backwards. EPA's BART determination is not entitled to a presumption of correctness. To the contrary, EPA is obligated under the CAA to review New Mexico's determination and analysis in light of the broad discretion the Act gives to states to determine BART. After that review, EPA is *required* to approve the New Mexico BART determination if it meets the requirements of the CAA. Given that the State's determination was made in compliance with EPA's own BART Guidelines, that EPA in its comments in New Mexico's proceedings did not (and could not) assert that that determination was contrary to the CAA or EPA's BART Guidelines, and that in fact the NO_x emission

²⁶ While less stringent than the 0.05 lb/mmBtu limit EPA imposes through its FIP, this 0.23 lb/mmBtu is *more stringent* than the 0.27 lb/mmBtu limit (for Units 1 and 3) and the 0.28 lb/mmBtu limit (for Units 2 and 4) that EPA stated would be adequate for purposes of interstate transport under CAA § 110(a)(2)(D)(i)(II). *See* part II, *infra*.

limits the SIP establishes for San Juan satisfy the presumptive limits in EPA's Guidelines, that approval is required.

B. EPA's Rationale for Why It Promulgated the BART FIP When It Did, Without Review of and Action on the BART SIP, Is Without Merit.

It is not entirely clear, based on statements in the preamble to the Final Rule, whether EPA construes the provisions of CAA § 110(c)(1) as requiring it to ignore New Mexico's pending Regional Haze SIP and to promulgate a BART FIP, or whether the Agency believes that it simply had discretion to do so. What is clear is that the justification EPA offers for why it promulgated the BART FIP when it did is without merit.

The justification EPA advanced for why it acted when it did is based on an assertion made for the first time in the Final Rule – *i.e.*, that its promulgation of a BART FIP for San Juan was effectively compelled by the deadline imposed by the consent decree in the *WildEarth Guardians* case.²⁷ Under the consent decree, EPA was required, by August 5, 2011, either to take long overdue action to approve New Mexico's 2007 Interstate Transport SIP or to disapprove it and promulgate an interstate FIP (*not* a regional haze BART FIP) in its place. The consent decree obligated EPA to act only on the Interstate Transport SIP submittal. The consent

²⁷ EPA's January 2011 proposed rule had made no mention whatsoever of the consent decree or the *WildEarth Guardians* litigation or otherwise indicated that EPA believed the consent decree had any bearing on a BART determination for San Juan.

decree imposed no deadline on EPA by which it had to take action to promulgate a BART FIP for San Juan. The consent decree does not even *mention* the Regional Haze provisions of CAA § 169A generally or BART specifically.

How then could the *WildEarth Guardians* consent decree possibly dictate the timing of a BART FIP for San Juan? EPA asserted that, because it was taking final action to disapprove New Mexico's Interstate Transport SIP submittal, with the consequence that *some* additional controls would thereafter have to be installed at San Juan to reduce the plant's NO_x emissions below the then-existing limit of 0.30 lb/mmBtu, it was appropriate for EPA to determine NO_x BART at the same time. This, EPA suggested, would

provide greater certainty to the SJGS that controls needed to prevent interference with other states' visibility programs, as well as the controls needed to meet the [Regional Haze Rule's] BART requirements, do not conflict with each other and end up imposing unnecessary greater costs upon the SJGS.

76 Fed. Reg. at 52,419 (JA ___).

This explanation is fatally flawed because it rests on two erroneous premises. First, EPA erroneously presumed it was obligated to disapprove New Mexico's 2007 Interstate Transport SIP. This is not true, as discussed in Part II below. Instead, by August 5, 2011, EPA could have – and should have – simply approved New Mexico's 2007 Interstate Transport SIP, which provided, consistent with applicable EPA guidance, that New Mexico's Interstate Transport obligations would be addressed by submission of New Mexico's Regional Haze SIP.

EPA could have done this because it knew that the NO_x limitation in New Mexico's BART SIP that EPA had in hand – SNCR with an emission rate of 0.23 lb/mmBtu for all four SJGS units – plainly would have satisfied the applicable visibility transport target that EPA itself had asserted – *i.e.*, 0.27 lb/mmBtu for Units 1 and 3 and 0.28 lb/mmBtu for Units 2 and 4.²⁸ This course of action, which NMED had urged on EPA during the rulemaking (JA ___), would have fully satisfied EPA's visibility transport obligations with respect to New Mexico under CAA § 110(a)(2)(D)(i)(II) and the *WildEarth Guardians* consent decree.²⁹ Correspondingly, this would have allowed separate EPA action on the merits of New Mexico's Regional Haze SIP and the State's BART determination for San Juan. Any uncertainty or inconsistency in emission limitation obligations for San Juan would have thereby been avoided. EPA's deliberate rejection of this available, statutorily-compliant option in order to impose its preferred emission limit on the State and San Juan was unlawful.

²⁸ *See, e.g.*, 76 Fed. Reg. 52,424 (JA ___) (while the "WRAP photochemical modeling included anticipated reductions in emissions at the SJGS," with the "anticipated future year projected emissions from SJGS" being 0.27 lb/mmBtu and 0.28 lb/mmBtu, and while "[o]ther WRAP states are relying on the[se] levels modeled for the SJGS units," New Mexico "did not adopt limits to insure that the levels assumed for SJGS in the WRAP modeling would be achieved").

²⁹ EPA also knew that it had in hand New Mexico's 2011 Interstate Transport SIP Revision, adopted by the State concurrently with the BART SIP, which provided the same NO_x emission limits for San Juan (0.23 lbs/mmBtu) as the BART SIP. Once EPA reviews (and approves, as it must) New Mexico's BART SIP, the "certainty" predicate for the BART/Interstate Transport FIP will disappear, and New Mexico's Interstate Transport SIP will fulfill the requirements of CAA 110(a)(2)(D).

The second fatal flaw in EPA's reasoning is that EPA's purported concern with avoiding a conflict between BART and interstate transport requirements does not make sense, because EPA knew that *either* New Mexico's BART determination (0.23 lbs NO_x/mmBTU) *or* EPA's BART determination (0.05 lbs NO_x/mmBTU) would have satisfied EPA's asserted visibility transport requirements (0.27 –0.28 lbs NO_x/mmBTU). Since either BART determination would satisfy interstate transport requirements, EPA's decision to impose a BART FIP on San Juan by August 5, 2011 cannot be justified on the basis of avoiding a conflict between BART requirements and interstate transport requirements. The only requirements in conflict were New Mexico's and EPA's radically different BART limitations. EPA's decision to promulgate its BART FIP, rather than approving New Mexico's 2007 interstate transport SIP and then subsequently evaluating New Mexico's BART SIP, represents nothing more than a conclusion by EPA that EPA's own policy preference for BART should prevail.

In sum, EPA's elliptical logic is arbitrary and capricious at best, since there was a different and legitimate course of action available that EPA could have— and should have— followed to meet its obligations under the *WildEarth Guardians* consent decree *without* violating the CAA by promulgating a BART FIP before it had evaluated a pending BART SIP. The Agency's self-serving justification for why it promulgated the BART FIP when it did should be rejected. Moreover, the pendency of the Regional Haze SIP – and EPA's failure to act on it— meant that EPA had defeated its

own asserted objective of providing “certainty” to San Juan. EPA’s FIP imposed a BART and Interstate Transport limit of 0.05 lb/mmBtu, but EPA had an obligation to act on – and had no reason to disapprove – New Mexico’s BART (and 2011 Interstate Transport) SIP limit of 0.23 lb/mmBtu. Absent EPA action on the SIP, San Juan could have (and has) no certainty as to the emission limit to which it ultimately will be subject.

Nor is there merit to EPA’s protest that it received New Mexico’s Regional Haze SIP “too late” to consider it before the Agency purportedly was “required” (*i.e.*, again, by the *WildEarth Guardians* consent decree) to take action by August 5, 2011.³⁰ EPA’s own description of the actions it took to develop its FIP proposal demonstrates that EPA could have considered New Mexico’s SNCR-based BART SIP had it chosen to do so.

EPA makes clear that it developed its proposed FIP based on the draft New Mexico SIP to which EPA first had access for a maximum of little more than five months. That draft SIP with a BART determination for San Juan (based on SCR) was proposed by NMED in June 2010. *See* note 15, *supra*. As EPA notes in its January 5,

³⁰ *See* 76 Fed. Reg. at 52,412 (JA __) (“New Mexico’s recently submitted [Regional] Haze SIP . . . was received too late to be taken into consideration in this rule making”); *id.* at 52,415 (JA __) (“Because of the lateness of the July 5, 2011 submission, it is not possible to review and potentially fully approve” that “SIP submission by proposing a rulemaking and promulgating a final action by August 5, 2011, as required by the consent decree”).

2011 proposed rule, the Agency found the unsubmitted draft BART determination to be “thorough and comprehensive.” 76 Fed. Reg. at 498. (JA ___). EPA further stated that, “[i]n making our NO_x BART determination for the SJGS, we drew heavily upon the NO_x BART portion of that [2010 draft] document, and used it to help inform our NO_x BART determination” for San Juan in the FIP. *Id.*

Although the record does not indicate precisely when EPA commenced its review of NMED’s June 2010 draft SIP, it is apparent that in a period of less than six months (at most) EPA was not only able to review thoroughly NMED’s BART determination, but concluded it could “dr[a]w heavily” on that determination to develop, within this limited time, its own proposed BART determination and have it ready for the acting Regional Administrator’s signature three days (*i.e.*, one working day) after Petitioner Governor Martinez’s predecessor had withdrawn the June 2010 draft. EPA had access to a draft of NMED’s 2011 Regional Haze SIP (with its SNCR-based BART determination) for a period comparable to the time it had access to the June 2010 draft SIP. Over five months elapsed between NMED’s proposal of the draft BART SIP on February 28, 2011, and August 4, 2011, the date EPA chose to promulgate its BART FIP. In view of the fact that EPA had access to the revised proposed SIP for approximately the same length of time EPA took to both review the State’s initial, unsubmitted draft SIP *and* to develop the Agency’s own FIP rulemaking proposal expressly based on that draft SIP, EPA claims that it lacked adequate time to consider the 2011 SIP cannot be credited.

In any event, EPA *did* review the revised SIP and provided comments to NMED on May 13, 2011. In those comments, EPA raised no legal objections to the State's determination that BART for San Juan is SNCR and an emission rate of 0.23 lb/mmBtu, although EPA did offer policy reasons for why EPA *preferred* a more stringent limit.³¹ It is evident that EPA had sufficient time to consider New Mexico's submittal. That EPA chose instead to promulgate a more stringent limit by imposing a FIP simply reflects that EPA did not agree with New Mexico's BART determination based on the State's own weighing of the BART factors. That was arbitrary and unlawful Agency action because, as discussed above, the Act assigns BART-determining authority to the states; EPA lacks authority to override BART determinations that a state makes after weighing the BART factors merely because EPA would have reached a conclusion different from that of the state.

II. EPA's Promulgation of the Interstate Transport FIP Was Unlawful.

The second set of actions taken by EPA in the Final Rule – (i) the disapproval of the visibility component of New Mexico's Interstate Transport SIP; and (ii) the simultaneous promulgation of an Interstate Transport FIP that incorporates the 0.05 lb/mmBtu NO_x emission limit that EPA separately (and unlawfully) determined to

³¹ See JA ___-___, NMED Notice of Intent to Present Technical Testimony, Exh. 15, "Re: New Mexico's Proposed Regional Haze State Implementation Plan" (May 13, 2011), available at http://www.nmenv.state.nm.us/aqb/reghaz/documents/NMED_Ex15.pdf.

constitute BART for San Juan – was also unlawful. As discussed below, both elements of EPA’s action should be vacated.

A. EPA’s Disapproval of New Mexico’s Interstate Transport SIP Was Unwarranted and Arbitrary.

EPA had no reasonable grounds for disapproving the visibility component of New Mexico Interstate Transport SIP. That SIP, submitted by the State in 2007, fully complied with EPA’s own 2006 Interstate Transport Guidance, as EPA itself recognized. That guidance placed the adoption and EPA approval of regional haze SIPs addressing BART and other visibility requirements ahead of interstate transport SIP revision. *See pp. 16-17, supra.* Until such regional haze SIPs were in place and approved by EPA, a state could satisfy the visibility transport requirements of CAA § 110(a)(2)(D)(i)(II) by “confirming that it [was] not possible” for the state at that time to “assess *whether there is any interference with measures in the applicable SIP*” of any other state “designed to ‘protect visibility.’” 2006 Interstate Transport Guidance at 9-10 (JA ___-___) (emphasis added). That is what New Mexico did in the plan it submitted in 2007.

In the Final Rule, EPA took an entirely new position, a position never stated or even suggested in its proposed rule. For the first time, EPA asserted that New Mexico’s “submission was not factually consistent with the recommendations” of EPA’s 2006 Interstate Transport Guidance, while at the same time implying that timely submission to EPA of a regional haze SIP was somehow a *prerequisite* to relying

on the 2006 Guidance with respect to interstate transport. *See* 76 Fed. Reg. at 52,418 (JA ___). Had EPA provided notice of this position in its proposed rule, New Mexico and other commenters would have been on notice and would have had an opportunity to explain that the timing of a state's submittal of a regional haze SIP should have no bearing on any determination as to whether the state's Interstate Transport SIP submitted in September 2007 satisfies the 2006 Guidance.

Putting EPA's *de facto* revision (if not outright repudiation) of its own guidance aside, the fact remains that the plain language of CAA § 110(a)(2)(D)(i)(II) *itself* provides that a SIP must ensure that emissions from one state not "interfere" with the visibility-protection "measures required to included" in any other state's SIP. At the time EPA disapproved the visibility component of New Mexico Interstate Transport SIP, however, no such "required" measures had been determined or identified because EPA had not acted upon and approved regional haze SIPs of (or promulgated regional haze FIPs for) states outside New Mexico's borders that might possibly be affected by San Juan's emissions. Absent some identification of specific "measures" that are "required" in other states, a determination that emissions from San Juan "interfere" with any such "measures" was impossible. Disapproval of a SIP that conforms to EPA's guidance is "contrary to law" since that guidance merely reflected the statutory law governing such interstate SIPs.

As a result, EPA had no reasonable basis for concluding that any specific NO_x emission limit for San Juan, much less the 0.05 lb/mmBtu limit it imposed in the FIP,

would be necessary to satisfy New Mexico's interstate transport obligations for visibility protection. Accordingly, EPA's disapproval of the visibility provisions of the New Mexico Interstate Transport SIP was arbitrary and capricious and contrary to the CAA.

B. Because EPA Provided No Justification for the Interstate Transport FIP's Imposition of a 0.05 lb/mmBtu NO_x Emission Limit for San Juan Apart from Consistency with the Unlawful BART FIP Limit, and Because EPA's Record Statements Eliminate Any Independent Basis for That Action, EPA's Promulgation of the Interstate Transport FIP Must Be Vacated.

Nowhere in the course of proposing and promulgating its Interstate Transport FIP did EPA even attempt to provide any record justification, under CAA § 110(a)(2)(D)(i)(II), for imposing a 0.05 lb/mmBtu NO_x emission limit on the San Juan units to address interstate transport obligations. Moreover, any such attempt would have failed.

Given EPA's unrebutted characterization of the NO_x emission rates assumed in the WRAP modeling (*i.e.*, 0.27 lb/mmBtu for Units 1 and 2; 0.28 lb/mmBtu for Units 2 and 4), which EPA conceded would satisfy any interstate transport obligation, EPA knew that no justification of a far more stringent rate such as 0.05 lb/mmBtu was remotely possible. Thus, the only asserted rationale for the SCR-based 0.05 lb/mmBtu limit in the Interstate Transport FIP is EPA's determination that that limit constitutes BART for San Juan, together with EPA's putative desire to promote "certainty" by imposing a uniform rate for BART and Interstate Transport.

Accordingly, if the petitions for review of EPA's promulgation of the 0.05 lb/mmBtu BART FIP for San Juan are granted (as they should be, for the reasons stated above), the FIP's imposition of the same BART-based limit in the Interstate Transport FIP must be vacated. Absent some independent reason why such a stringent limit would be necessary for New Mexico to meet its visibility transport obligations under CAA § 110(a)(2)(D)(i)(II) – which EPA did not even attempt to provide – there is nothing to support the Agency's action. EPA's acknowledgement in this rulemaking that emission rates of 0.27 and 0.28 lb/mmBtu would satisfy Interstate Transport requirements is, in all events, fatal to its Final Rule's imposition of a 0.05 lb/mmBtu limit under § 110(a)(2)(D)(i)(II) that is wholly unsupported in light of the record.

CONCLUSION

For the foregoing reasons, the petition for review of the Petitioners should be granted.

STATEMENT AS TO ORAL ARGUMENT

Pursuant to Circuit Rule 28.2(C), Petitioners state that oral argument is requested because of the importance of the issues to the State of New Mexico and its citizens and the state-federal cooperative scheme established by the CAA. The Court's Order of March 23, 2012 tentatively schedules oral argument in these cases for a special session of the Court expected to be held the week of October 22, 2012.

Respectfully submitted,

s/ Jessica M. Hernandez
Jessica M. Hernandez
General Counsel
OFFICE OF GOVERNOR
SUSANA MARTINEZ
490 Old Santa Fe Trail #400
Santa Fe, New Mexico 87501
(505) 496-2200
Counsel for Petitioner
Governor Susana Martinez

s/ Ryan Flynn
Ryan Flynn, General Counsel
William G. Grantham, Assistant
General Counsel
NEW MEXICO ENVIRONMENT
DEPARTMENT
1190 S. St. Francis Drive
P.O. Box 5469
Santa Fe, New Mexico 87502
(505) 827-2855
Counsel for Petitioner New Mexico
Environment Department

Dated: April 30, 2012

CERTIFICATE OF SERVICE

I hereby certify that on April 30, 2012, I filed the foregoing Brief of Petitioners Governor Susana Martinez and New Mexico Environment Department through the Court's ECF System, which will send notice of such filing via email to all counsel of record.

s/ William G. Grantham
William G. Grantham
Assistant General Counsel

**CERTIFICATE OF DIGITAL SUBMISSION
AND PRIVACY REDACTIONS**

The undersigned certifies that:

- (1) All required privacy redactions have been made; and
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Dated: April 30, 2012

s/ William G. Grantham
William G. Grantham

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s/ William G. Grantham
William G. Grantham

Dated: April 30, 2012

Statutory and Regulatory Addendum

To Brief of Petitioners

Governor Susana Martinez and New Mexico Environment Department

No. 11-9567

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1. Clean Air Act § 101, 42 U.S.C. § 7401.

§ 7401 Congressional findings and declaration of purpose

(a) Findings

The Congress finds—

* * * *

(3) that air pollution prevention (that is, the reduction or elimination, through any measures, of the amount of pollutants produced or created at the source) and air pollution control at its source is the primary responsibility of States and local governments;

2. Clean Air Act § 107(a), 42 U.S.C.A. § 7407

§ 7407. Air quality control regions

(a) Responsibility of each State for air quality; submission of implementation plan. Each State shall have the primary responsibility for assuring air quality within the entire geographic area comprising such State by submitting an implementation plan for such State which will specify the manner in which national primary and secondary ambient air quality standards will be achieved and maintained within each air quality control region in such State.

3. Clean Air Act § 110, 42 U.S.C. § 7410

§7410. State implementation plans for national primary and secondary ambient air quality standards

(a) Adoption of plan by State; submission to Administrator; content of plan; revision; new sources; indirect source review program; supplemental or intermittent control systems

(1) Each State shall, after reasonable notice and public hearings, adopt and submit to the Administrator, within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national primary ambient air quality standard (or any revision thereof) under section 7409 of this title for any air pollutant, a plan which provides for implementation, maintenance, and enforcement of such primary standard in each air quality control region (or portion thereof) within such State. In

addition, such State shall adopt and submit to the Administrator (either as a part of a plan submitted under the preceding sentence or separately) within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national ambient air quality secondary standard (or revision thereof), a plan which provides for implementation, maintenance, and enforcement of such secondary standard in each air quality control region (or portion thereof) within such State. Unless a separate public hearing is provided, each State shall consider its plan implementing such secondary standard at the hearing required by the first sentence of this paragraph.

(2) Each implementation plan submitted by a State under this chapter shall be adopted by the State after reasonable notice and public hearing. Each such plan shall—

(A) include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this chapter;

(B) provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to—

(i) monitor, compile, and analyze data on ambient air quality, and

(ii) upon request, make such data available to the Administrator;

(C) include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D of this subchapter;

(D) contain adequate provisions—

(i) prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will—

(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or

(II) interfere with measures required to be included in the applicable implementation plan for any other State under part C of this subchapter to prevent significant deterioration of air quality or to protect visibility,

(ii) insuring compliance with the applicable requirements of sections 7426 and 7415 of this title (relating to interstate and international pollution abatement);

(E) provide (i) necessary assurances that the State (or, except where the Administrator deems inappropriate, the general purpose local government or

governments, or a regional agency designated by the State or general purpose local governments for such purpose) will have adequate personnel, funding, and authority under State (and, as appropriate, local) law to carry out such implementation plan (and is not prohibited by any provision of Federal or State law from carrying out such implementation plan or portion thereof), (ii) requirements that the State comply with the requirements respecting State boards under section 7428 of this title, and (iii) necessary assurances that, where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision;

(F) require, as may be prescribed by the Administrator—

(i) the installation, maintenance, and replacement of equipment, and the implementation of other necessary steps, by owners or operators of stationary sources to monitor emissions from such sources,

(ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and

(iii) correlation of such reports by the State agency with any emission limitations or standards established pursuant to this chapter, which reports shall be available at reasonable times for public inspection;

(G) provide for authority comparable to that in section 7603 of this title and adequate contingency plans to implement such authority;

(H) provide for revision of such plan—

(i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or more expeditious methods of attaining such standard, and

(ii) except as provided in paragraph (3)(C), whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements or to otherwise comply with any additional requirements established under this chapter;

(I) in the case of a plan or plan revision for an area designated as a nonattainment area, meet the applicable requirements of part D of this subchapter (relating to nonattainment areas);

(J) meet the applicable requirements of section 7421 of this title (relating to consultation), section 7427 of this title (relating to public notification), and part C of this subchapter (relating to prevention of significant deterioration of air quality and visibility protection);

(K) provide for—

(i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any

emissions of any air pollutant for which the Administrator has established a national ambient air quality standard, and

(ii) the submission, upon request, of data related to such air quality modeling to the Administrator;

(L) require the owner or operator of each major stationary source to pay to the permitting authority, as a condition of any permit required under this chapter, a fee sufficient to cover—

(i) the reasonable costs of reviewing and acting upon any application for such a permit, and

(ii) if the owner or operator receives a permit for such source, the reasonable costs of implementing and enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action),

until such fee requirement is superseded with respect to such sources by the Administrator's approval of a fee program under subchapter V of this chapter; and

(M) provide for consultation and participation by local political subdivisions affected by the plan.

(3)(A) Repealed. Pub. L. 101–549, title I, §101(d)(1), Nov. 15, 1990, 104 Stat. 2409.

(B) As soon as practicable, the Administrator shall, consistent with the purposes of this chapter and the Energy Supply and Environmental Coordination Act of 1974 [15 U.S.C. 791 et seq.], review each State's applicable implementation plans and report to the State on whether such plans can be revised in relation to fuel burning stationary sources (or persons supplying fuel to such sources) without interfering with the attainment and maintenance of any national ambient air quality standard within the period permitted in this section. If the Administrator determines that any such plan can be revised, he shall notify the State that a plan revision may be submitted by the State. Any plan revision which is submitted by the State shall, after public notice and opportunity for public hearing, be approved by the Administrator if the revision relates only to fuel burning stationary sources (or persons supplying fuel to such sources), and the plan as revised complies with paragraph (2) of this subsection. The Administrator shall approve or disapprove any revision no later than three months after its submission.

(C) Neither the State, in the case of a plan (or portion thereof) approved under this subsection, nor the Administrator, in the case of a plan (or portion thereof) promulgated under subsection (c) of this section, shall be required to revise an applicable implementation plan because one or more exemptions under section 7418 of this title (relating to Federal facilities), enforcement orders under section 7413(d) of this title, suspensions under subsection (f) or (g) of this section (relating to temporary energy or economic authority), orders under section 7419 of this title (relating to primary nonferrous smelters), or extensions of compliance in decrees

entered under section 7413(e) of this title (relating to iron- and steel-producing operations) have been granted, if such plan would have met the requirements of this section if no such exemptions, orders, or extensions had been granted.

(4) Repealed. Pub. L. 101-549, title I, §101(d)(2), Nov. 15, 1990, 104 Stat. 2409.

(5)(A)(i) Any State may include in a State implementation plan, but the Administrator may not require as a condition of approval of such plan under this section, any indirect source review program. The Administrator may approve and enforce, as part of an applicable implementation plan, an indirect source review program which the State chooses to adopt and submit as part of its plan.

(ii) Except as provided in subparagraph (B), no plan promulgated by the Administrator shall include any indirect source review program for any air quality control region, or portion thereof.

(iii) Any State may revise an applicable implementation plan approved under this subsection to suspend or revoke any such program included in such plan, provided that such plan meets the requirements of this section.

(B) The Administrator shall have the authority to promulgate, implement and enforce regulations under subsection (c) of this section respecting indirect source review programs which apply only to federally assisted highways, airports, and other major federally assisted indirect sources and federally owned or operated indirect sources.

(C) For purposes of this paragraph, the term "indirect source" means a facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution. Such term includes parking lots, parking garages, and other facilities subject to any measure for management of parking supply (within the meaning of subsection (c)(2)(D)(ii) of this section), including regulation of existing off-street parking but such term does not include new or existing on-street parking. Direct emissions sources or facilities at, within, or associated with, any indirect source shall not be deemed indirect sources for the purpose of this paragraph.

(D) For purposes of this paragraph the term "indirect source review program" means the facility-by-facility review of indirect sources of air pollution, including such measures as are necessary to assure, or assist in assuring, that a new or modified indirect source will not attract mobile sources of air pollution, the emissions from which would cause or contribute to air pollution concentrations—

- (i) exceeding any national primary ambient air quality standard for a mobile source-related air pollutant after the primary standard attainment date, or
- (ii) preventing maintenance of any such standard after such date.

(E) For purposes of this paragraph and paragraph (2)(B), the term “transportation control measure” does not include any measure which is an “indirect source review program”.

(6) No State plan shall be treated as meeting the requirements of this section unless such plan provides that in the case of any source which uses a supplemental, or intermittent control system for purposes of meeting the requirements of an order under section 7413(d) of this title or section 7419 of this title (relating to primary nonferrous smelter orders), the owner or operator of such source may not temporarily reduce the pay of any employee by reason of the use of such supplemental or intermittent or other dispersion dependent control system.

(b) Extension of period for submission of plans

The Administrator may, wherever he determines necessary, extend the period for submission of any plan or portion thereof which implements a national secondary ambient air quality standard for a period not to exceed 18 months from the date otherwise required for submission of such plan.

(c) Preparation and publication by Administrator of proposed regulations setting forth implementation plan; transportation regulations study and report; parking surcharge; suspension authority; plan implementation

(1) The Administrator shall promulgate a Federal implementation plan at any time within 2 years after the Administrator—

(A) finds that a State has failed to make a required submission or finds that the plan or plan revision submitted by the State does not satisfy the minimum criteria established under subsection (k)(1)(A) of this section, or

(B) disapproves a State implementation plan submission in whole or in part, unless the State corrects the deficiency, and the Administrator approves the plan or plan revision, before the Administrator promulgates such Federal implementation plan.

(2)(A) Repealed. Pub. L. 101-549, title I, §101(d)(3)(A), Nov. 15, 1990, 104 Stat. 2409.

(B) No parking surcharge regulation may be required by the Administrator under paragraph (1) of this subsection as a part of an applicable implementation plan. All parking surcharge regulations previously required by the Administrator shall be void upon June 22, 1974. This subparagraph shall not prevent the Administrator from approving parking surcharges if they are adopted and submitted by a State as part of

an applicable implementation plan. The Administrator may not condition approval of any implementation plan submitted by a State on such plan's including a parking surcharge regulation.

(C) Repealed. Pub. L. 101-549, title I, §101(d)(3)(B), Nov. 15, 1990, 104 Stat. 2409.

(D) For purposes of this paragraph—

(i) The term “parking surcharge regulation” means a regulation imposing or requiring the imposition of any tax, surcharge, fee, or other charge on parking spaces, or any other area used for the temporary storage of motor vehicles.

(ii) The term “management of parking supply” shall include any requirement providing that any new facility containing a given number of parking spaces shall receive a permit or other prior approval, issuance of which is to be conditioned on air quality considerations.

(iii) The term “preferential bus/carpool lane” shall include any requirement for the setting aside of one or more lanes of a street or highway on a permanent or temporary basis for the exclusive use of buses or carpools, or both.

(E) No standard, plan, or requirement, relating to management of parking supply or preferential bus/carpool lanes shall be promulgated after June 22, 1974, by the Administrator pursuant to this section, unless such promulgation has been subjected to at least one public hearing which has been held in the area affected and for which reasonable notice has been given in such area. If substantial changes are made following public hearings, one or more additional hearings shall be held in such area after such notice.

(3) Upon application of the chief executive officer of any general purpose unit of local government, if the Administrator determines that such unit has adequate authority under State or local law, the Administrator may delegate to such unit the authority to implement and enforce within the jurisdiction of such unit any part of a plan promulgated under this subsection. Nothing in this paragraph shall prevent the Administrator from implementing or enforcing any applicable provision of a plan promulgated under this subsection.

(4) Repealed. Pub. L. 101-549, title I, §101(d)(3)(C), Nov. 15, 1990, 104 Stat. 2409.

(5)(A) Any measure in an applicable implementation plan which requires a toll or other charge for the use of a bridge located entirely within one city shall be eliminated from such plan by the Administrator upon application by the Governor of the State, which application shall include a certification by the Governor that he will revise such plan in accordance with subparagraph (B).

(B) In the case of any applicable implementation plan with respect to which a measure has been eliminated under subparagraph (A), such plan shall, not later than one year after August 7, 1977, be revised to include comprehensive measures to:

(i) establish, expand, or improve public transportation measures to meet basic transportation needs, as expeditiously as is practicable; and

(ii) implement transportation control measures necessary to attain and maintain national ambient air quality standards,

and such revised plan shall, for the purpose of implementing such comprehensive public transportation measures, include requirements to use (insofar as is necessary) Federal grants, State or local funds, or any combination of such grants and funds as may be consistent with the terms of the legislation providing such grants and funds. Such measures shall, as a substitute for the tolls or charges eliminated under subparagraph (A), provide for emissions reductions equivalent to the reductions which may reasonably be expected to be achieved through the use of the tolls or charges eliminated.

(C) Any revision of an implementation plan for purposes of meeting the requirements of subparagraph (B) shall be submitted in coordination with any plan revision required under part D of this subchapter.

(d), (e) Repealed. Pub. L. 101-549, title I, §101(d)(4), (5), Nov. 15, 1990, 104 Stat. 2409

(f) National or regional energy emergencies; determination by President

(1) Upon application by the owner or operator of a fuel burning stationary source, and after notice and opportunity for public hearing, the Governor of the State in which such source is located may petition the President to determine that a national or regional energy emergency exists of such severity that—

(A) a temporary suspension of any part of the applicable implementation plan or of any requirement under section 7651j of this title (concerning excess emissions penalties or offsets) may be necessary, and

(B) other means of responding to the energy emergency may be inadequate.

Such determination shall not be delegable by the President to any other person. If the President determines that a national or regional energy emergency of such severity exists, a temporary emergency suspension of any part of an applicable implementation plan or of any requirement under section 7651j of this title (concerning excess emissions penalties or offsets) adopted by the State may be issued by the Governor of any State covered by the President's determination under the condition specified in paragraph (2) and may take effect immediately.

(2) A temporary emergency suspension under this subsection shall be issued to a source only if the Governor of such State finds that—

(A) there exists in the vicinity of such source a temporary energy emergency involving high levels of unemployment or loss of necessary energy supplies for residential dwellings; and

(B) such unemployment or loss can be totally or partially alleviated by such emergency suspension.

Not more than one such suspension may be issued for any source on the basis of the same set of circumstances or on the basis of the same emergency.

(3) A temporary emergency suspension issued by a Governor under this subsection shall remain in effect for a maximum of four months or such lesser period as may be specified in a disapproval order of the Administrator, if any. The Administrator may disapprove such suspension if he determines that it does not meet the requirements of paragraph (2).

(4) This subsection shall not apply in the case of a plan provision or requirement promulgated by the Administrator under subsection (c) of this section, but in any such case the President may grant a temporary emergency suspension for a four month period of any such provision or requirement if he makes the determinations and findings specified in paragraphs (1) and (2).

(5) The Governor may include in any temporary emergency suspension issued under this subsection a provision delaying for a period identical to the period of such suspension any compliance schedule (or increment of progress) to which such source is subject under section 1857c-10 of this title, as in effect before August 7, 1977, or section 7413(d) of this title, upon a finding that such source is unable to comply with such schedule (or increment) solely because of the conditions on the basis of which a suspension was issued under this subsection.

(g) Governor's authority to issue temporary emergency suspensions

(1) In the case of any State which has adopted and submitted to the Administrator a proposed plan revision which the State determines—

(A) meets the requirements of this section, and

(B) is necessary (i) to prevent the closing for one year or more of any source of air pollution, and (ii) to prevent substantial increases in unemployment which would result from such closing, and

which the Administrator has not approved or disapproved under this section within 12 months of submission of the proposed plan revision, the Governor may issue a temporary emergency suspension of the part of the applicable implementation plan

for such State which is proposed to be revised with respect to such source. The determination under subparagraph (B) may not be made with respect to a source which would close without regard to whether or not the proposed plan revision is approved.

(2) A temporary emergency suspension issued by a Governor under this subsection shall remain in effect for a maximum of four months or such lesser period as may be specified in a disapproval order of the Administrator. The Administrator may disapprove such suspension if he determines that it does not meet the requirements of this subsection.

(3) The Governor may include in any temporary emergency suspension issued under this subsection a provision delaying for a period identical to the period of such suspension any compliance schedule (or increment of progress) to which such source is subject under section 1857c-10 of this title as in effect before August 7, 1977, or under section 7413(d) of this title upon a finding that such source is unable to comply with such schedule (or increment) solely because of the conditions on the basis of which a suspension was issued under this subsection.

(h) Publication of comprehensive document for each State setting forth requirements of applicable implementation plan

(1) Not later than 5 years after November 15, 1990, and every 3 years thereafter, the Administrator shall assemble and publish a comprehensive document for each State setting forth all requirements of the applicable implementation plan for such State and shall publish notice in the Federal Register of the availability of such documents.

(2) The Administrator may promulgate such regulations as may be reasonably necessary to carry out the purpose of this subsection.

(i) Modification of requirements prohibited

Except for a primary nonferrous smelter order under section 7419 of this title, a suspension under subsection (f) or (g) of this section (relating to emergency suspensions), an exemption under section 7418 of this title (relating to certain Federal facilities), an order under section 7413(d) of this title (relating to compliance orders), a plan promulgation under subsection (c) of this section, or a plan revision under subsection (a)(3) of this section; no order, suspension, plan revision, or other action modifying any requirement of an applicable implementation plan may be taken with respect to any stationary source by the State or by the Administrator.

(j) Technological systems of continuous emission reduction on new or modified stationary sources; compliance with performance standards

As a condition for issuance of any permit required under this subchapter, the owner or operator of each new or modified stationary source which is required to obtain such a permit must show to the satisfaction of the permitting authority that the technological system of continuous emission reduction which is to be used at such source will enable it to comply with the standards of performance which are to apply to such source and that the construction or modification and operation of such source will be in compliance with all other requirements of this chapter.

(k) Environmental Protection Agency action on plan submissions

(1) Completeness of plan submissions

(A) Completeness criteria

Within 9 months after November 15, 1990, the Administrator shall promulgate minimum criteria that any plan submission must meet before the Administrator is required to act on such submission under this subsection. The criteria shall be limited to the information necessary to enable the Administrator to determine whether the plan submission complies with the provisions of this chapter.

(B) Completeness finding

Within 60 days of the Administrator's receipt of a plan or plan revision, but no later than 6 months after the date, if any, by which a State is required to submit the plan or revision, the Administrator shall determine whether the minimum criteria established pursuant to subparagraph (A) have been met. Any plan or plan revision that a State submits to the Administrator, and that has not been determined by the Administrator (by the date 6 months after receipt of the submission) to have failed to meet the minimum criteria established pursuant to subparagraph (A), shall on that date be deemed by operation of law to meet such minimum criteria.

(C) Effect of finding of incompleteness

Where the Administrator determines that a plan submission (or part thereof) does not meet the minimum criteria established pursuant to subparagraph (A), the State shall be treated as not having made the submission (or, in the Administrator's discretion, part thereof).

(2) Deadline for action

Within 12 months of a determination by the Administrator (or a determination deemed by operation of law) under paragraph (1) that a State has submitted a plan or plan revision (or, in the Administrator's discretion, part thereof) that meets the minimum criteria established pursuant to paragraph (1), if applicable (or, if those

criteria are not applicable, within 12 months of submission of the plan or revision), the Administrator shall act on the submission in accordance with paragraph (3).

(3) Full and partial approval and disapproval

In the case of any submittal on which the Administrator is required to act under paragraph (2), the Administrator shall approve such submittal as a whole if it meets all of the applicable requirements of this chapter. If a portion of the plan revision meets all the applicable requirements of this chapter, the Administrator may approve the plan revision in part and disapprove the plan revision in part. The plan revision shall not be treated as meeting the requirements of this chapter until the Administrator approves the entire plan revision as complying with the applicable requirements of this chapter.

(4) Conditional approval

The Administrator may approve a plan revision based on a commitment of the State to adopt specific enforceable measures by a date certain, but not later than 1 year after the date of approval of the plan revision. Any such conditional approval shall be treated as a disapproval if the State fails to comply with such commitment.

(5) Calls for plan revisions

Whenever the Administrator finds that the applicable implementation plan for any area is substantially inadequate to attain or maintain the relevant national ambient air quality standard, to mitigate adequately the interstate pollutant transport described in section 7506a of this title or section 7511c of this title, or to otherwise comply with any requirement of this chapter, the Administrator shall require the State to revise the plan as necessary to correct such inadequacies. The Administrator shall notify the State of the inadequacies, and may establish reasonable deadlines (not to exceed 18 months after the date of such notice) for the submission of such plan revisions. Such findings and notice shall be public. Any finding under this paragraph shall, to the extent the Administrator deems appropriate, subject the State to the requirements of this chapter to which the State was subject when it developed and submitted the plan for which such finding was made, except that the Administrator may adjust any dates applicable under such requirements as appropriate (except that the Administrator may not adjust any attainment date prescribed under part D of this subchapter, unless such date has elapsed).

(6) Corrections

Whenever the Administrator determines that the Administrator's action approving, disapproving, or promulgating any plan or plan revision (or part

thereof), area designation, redesignation, classification, or reclassification was in error, the Administrator may in the same manner as the approval, disapproval, or promulgation revise such action as appropriate without requiring any further submission from the State. Such determination and the basis thereof shall be provided to the State and public.

(l) Plan revisions

Each revision to an implementation plan submitted by a State under this chapter shall be adopted by such State after reasonable notice and public hearing. The Administrator shall not approve a revision of a plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress (as defined in section 7501 of this title), or any other applicable requirement of this chapter.

(m) Sanctions

The Administrator may apply any of the sanctions listed in section 7509(b) of this title at any time (or at any time after) the Administrator makes a finding, disapproval, or determination under paragraphs (1) through (4), respectively, of section 7509(a) of this title in relation to any plan or plan item (as that term is defined by the Administrator) required under this chapter, with respect to any portion of the State the Administrator determines reasonable and appropriate, for the purpose of ensuring that the requirements of this chapter relating to such plan or plan item are met. The Administrator shall, by rule, establish criteria for exercising his authority under the previous sentence with respect to any deficiency referred to in section 7509(a) of this title to ensure that, during the 24-month period following the finding, disapproval, or determination referred to in section 7509(a) of this title, such sanctions are not applied on a statewide basis where one or more political subdivisions covered by the applicable implementation plan are principally responsible for such deficiency.

(n) Savings clauses

(1) Existing plan provisions

Any provision of any applicable implementation plan that was approved or promulgated by the Administrator pursuant to this section as in effect before November 15, 1990, shall remain in effect as part of such applicable implementation plan, except to the extent that a revision to such provision is approved or promulgated by the Administrator pursuant to this chapter.

(2) Attainment dates

For any area not designated nonattainment, any plan or plan revision submitted or required to be submitted by a State—

(A) in response to the promulgation or revision of a national primary ambient air quality standard in effect on November 15, 1990, or

(B) in response to a finding of substantial inadequacy under subsection (a)(2) of this section (as in effect immediately before November 15, 1990), shall provide for attainment of the national primary ambient air quality standards within 3 years of November 15, 1990, or within 5 years of issuance of such finding of substantial inadequacy, whichever is later.

(3) Retention of construction moratorium in certain areas

In the case of an area to which, immediately before November 15, 1990, the prohibition on construction or modification of major stationary sources prescribed in subsection (a)(2)(I) of this section (as in effect immediately before November 15, 1990) applied by virtue of a finding of the Administrator that the State containing such area had not submitted an implementation plan meeting the requirements of section 7502(b)(6) of this title (relating to establishment of a permit program) (as in effect immediately before November 15, 1990) or 7502(a)(1) of this title (to the extent such requirements relate to provision for attainment of the primary national ambient air quality standard for sulfur oxides by December 31, 1982) as in effect immediately before November 15, 1990, no major stationary source of the relevant air pollutant or pollutants shall be constructed or modified in such area until the Administrator finds that the plan for such area meets the applicable requirements of section 7502(c)(5) of this title (relating to permit programs) or subpart 5 of part D of this subchapter (relating to attainment of the primary national ambient air quality standard for sulfur dioxide), respectively.

(o) Indian tribes

If an Indian tribe submits an implementation plan to the Administrator pursuant to section 7601(d) of this title, the plan shall be reviewed in accordance with the provisions for review set forth in this section for State plans, except as otherwise provided by regulation promulgated pursuant to section 7601(d)(2) of this title. When such plan becomes effective in accordance with the regulations promulgated under section 7601(d) of this title, the plan shall become applicable to all areas (except as expressly provided otherwise in the plan) located within the exterior boundaries of the reservation, notwithstanding the issuance of any patent and including rights-of-way running through the reservation.

(p) Reports

Any State shall submit, according to such schedule as the Administrator may prescribe, such reports as the Administrator may require relating to emission reductions, vehicle miles traveled, congestion levels, and any other information the Administrator may deem necessary to assess the development effectiveness, need for revision, or implementation of any plan or plan revision required under this chapter.

4. Clean Air Act § 162, 42 U.S.C.A. § 7472

§ 7472. Initial classifications

(a) Areas designated as class I

Upon the enactment of this part, all--

- (1) international parks,
- (2) national wilderness areas which exceed 5,000 acres in size,
- (3) national memorial parks which exceed 5,000 acres in size, and
- (4) national parks which exceed six thousand acres in size,

and which are in existence on August 7, 1977, shall be class I areas and may not be redesignated. All areas which were redesignated as class I under regulations promulgated before August 7, 1977, shall be class I areas which may be redesignated as provided in this part. The extent of the areas designated as Class I under this section shall conform to any changes in the boundaries of such areas which have occurred subsequent to August 7, 1977, or which may occur subsequent to November 15, 1990.

(b) Areas designated as class II

All areas in such State designated pursuant to section 7407(d) of this title as attainment or unclassifiable which are not established as class I under subsection (a) of this section shall be class II areas unless redesignated under section 7474 of this title.

5. Clean Air Act § 169A, 42 U.S.C. § 7491

§7491. Visibility protection for Federal class I areas

(a) Impairment of visibility; list of areas; study and report

(1) Congress hereby declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution.

(2) Not later than six months after August 7, 1977, the Secretary of the Interior in consultation with other Federal land managers shall review all mandatory class I Federal areas and identify those where visibility is an important value of the area. From time to time the Secretary of the Interior may revise such identifications. Not later than one year after August 7, 1977, the Administrator shall, after consultation with the Secretary of the Interior, promulgate a list of mandatory class I Federal areas in which he determines visibility is an important value.

(3) Not later than eighteen months after August 7, 1977, the Administrator shall complete a study and report to Congress on available methods for implementing the national goal set forth in paragraph (1). Such report shall include recommendations for—

- (A) methods for identifying, characterizing, determining, quantifying, and measuring visibility impairment in Federal areas referred to in paragraph (1), and
- (B) modeling techniques (or other methods) for determining the extent to which manmade air pollution may reasonably be anticipated to cause or contribute to such impairment, and
- (C) methods for preventing and remedying such manmade air pollution and resulting visibility impairment.

Such report shall also identify the classes or categories of sources and the types of air pollutants which, alone or in conjunction with other sources or pollutants, may reasonably be anticipated to cause or contribute significantly to impairment of visibility.

(4) Not later than twenty-four months after August 7, 1977, and after notice and public hearing, the Administrator shall promulgate regulations to assure (A) reasonable progress toward meeting the national goal specified in paragraph (1), and (B) compliance with the requirements of this section.

(b) Regulations

Regulations under subsection (a)(4) of this section shall—

(1) provide guidelines to the States, taking into account the recommendations under subsection (a)(3) of this section on appropriate techniques and methods for implementing this section (as provided in subparagraphs (A) through (C) of such subsection (a)(3)), and

(2) require each applicable implementation plan for a State in which any area listed by the Administrator under subsection (a)(2) of this section is located (or for a State the emissions from which may reasonably be anticipated to cause or contribute to any

impairment of visibility in any such area) to contain such emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national goal specified in subsection (a) of this section, including—

(A) except as otherwise provided pursuant to subsection (c) of this section, a requirement that each major stationary source which is in existence on August 7, 1977, but which has not been in operation for more than fifteen years as of such date, and which, as determined by the State (or the Administrator in the case of a plan promulgated under section 7410(c) of this title) emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area, shall procure, install, and operate, as expeditiously as practicable (and maintain thereafter) the best available retrofit technology, as determined by the State (or the Administrator in the case of a plan promulgated under section 7410(c) of this title) for controlling emissions from such source for the purpose of eliminating or reducing any such impairment, and

(B) a long-term (ten to fifteen years) strategy for making reasonable progress toward meeting the national goal specified in subsection (a) of this section.

In the case of a fossil-fuel fired generating powerplant having a total generating capacity in excess of 750 megawatts, the emission limitations required under this paragraph shall be determined pursuant to guidelines, promulgated by the Administrator under paragraph (1).

(c) Exemptions

(1) The Administrator may, by rule, after notice and opportunity for public hearing, exempt any major stationary source from the requirement of subsection (b)(2)(A) of this section, upon his determination that such source does not or will not, by itself or in combination with other sources, emit any air pollutant which may reasonably be anticipated to cause or contribute to a significant impairment of visibility in any mandatory class I Federal area.

(2) Paragraph (1) of this subsection shall not be applicable to any fossil-fuel fired powerplant with total design capacity of 750 megawatts or more, unless the owner or operator of any such plant demonstrates to the satisfaction of the Administrator that such powerplant is located at such distance from all areas listed by the Administrator under subsection (a)(2) of this section that such powerplant does not or will not, by itself or in combination with other sources, emit any air pollutant which may reasonably be anticipated to cause or contribute to significant impairment of visibility in any such area.

(3) An exemption under this subsection shall be effective only upon concurrence by the appropriate Federal land manager or managers with the Administrator's determination under this subsection.

(d) Consultations with appropriate Federal land managers

Before holding the public hearing on the proposed revision of an applicable implementation plan to meet the requirements of this section, the State (or the Administrator, in the case of a plan promulgated under section 7410(c) of this title) shall consult in person with the appropriate Federal land manager or managers and shall include a summary of the conclusions and recommendations of the Federal land managers in the notice to the public.

(e) Buffer zones

In promulgating regulations under this section, the Administrator shall not require the use of any automatic or uniform buffer zone or zones.

(f) Nondiscretionary duty

For purposes of section 7604(a)(2) of this title, the meeting of the national goal specified in subsection (a)(1) of this section by any specific date or dates shall not be considered a "nondiscretionary duty" of the Administrator.

(g) Definitions

For the purpose of this section—

(1) in determining reasonable progress there shall be taken into consideration the costs of compliance, the time necessary for compliance, and the energy and nonair quality environmental impacts of compliance, and the remaining useful life of any existing source subject to such requirements;

(2) in determining best available retrofit technology the State (or the Administrator in determining emission limitations which reflect such technology) shall take into consideration the costs of compliance, the energy and nonair quality environmental impacts of compliance, any existing pollution control technology in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology;

(3) the term “manmade air pollution” means air pollution which results directly or indirectly from human activities;

(4) the term “as expeditiously as practicable” means as expeditiously as practicable but in no event later than five years after the date of approval of a plan revision under this section (or the date of promulgation of such a plan revision in the case of action by the Administrator under section 7410(c) of this title for purposes of this section);

(5) the term “mandatory class I Federal areas” means Federal areas which may not be designated as other than class I under this part;

(6) the terms “visibility impairment” and “impairment of visibility” shall include reduction in visual range and atmospheric discoloration; and

(7) the term “major stationary source” means the following types of stationary sources with the potential to emit 250 tons or more of any pollutant: fossil-fuel fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (thermal dryers), kraft pulp mills, Portland Cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, 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 facilities, chemical process plants, fossil-fuel boilers of more than 250 million British thermal units per hour heat input, petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels, taconite ore processing facilities, glass fiber processing plants, charcoal production facilities.

6. Clean Air Act § 169B, 42 U.S.C. § 7492

§7492. Visibility

(a) Studies

(1) The Administrator, in conjunction with the National Park Service and other appropriate Federal agencies, shall conduct research to identify and evaluate sources and source regions of both visibility impairment and regions that provide predominantly clean air in class I areas. A total of \$8,000,000 per year for 5 years is authorized to be appropriated for the Environmental Protection Agency and the other Federal agencies to conduct this research. The research shall include—

(A) expansion of current visibility related monitoring in class I areas;

- (B) assessment of current sources of visibility impairing pollution and clean air corridors;
- (C) adaptation of regional air quality models for the assessment of visibility;
- (D) studies of atmospheric chemistry and physics of visibility.

(2) Based on the findings available from the research required in subsection (a)(1) of this section as well as other available scientific and technical data, studies, and other available information pertaining to visibility source-receptor relationships, the Administrator shall conduct an assessment and evaluation that identifies, to the extent possible, sources and source regions of visibility impairment including natural sources as well as source regions of clear air for class I areas. The Administrator shall produce interim findings from this study within 3 years after November 15, 1990.

(b) Impacts of other provisions

Within 24 months after November 15, 1990, the Administrator shall conduct an assessment of the progress and improvements in visibility in class I areas that are likely to result from the implementation of the provisions of the Clean Air Act Amendments of 1990 other than the provisions of this section. Every 5 years thereafter the Administrator shall conduct an assessment of actual progress and improvement in visibility in class I areas. The Administrator shall prepare a written report on each assessment and transmit copies of these reports to the appropriate committees of Congress.

(c) Establishment of visibility transport regions and commissions

(1) Authority to establish visibility transport regions

Whenever, upon the Administrator's motion or by petition from the Governors of at least two affected States, the Administrator has reason to believe that the current or projected interstate transport of air pollutants from one or more States contributes significantly to visibility impairment in class I areas located in the affected States, the Administrator may establish a transport region for such pollutants that includes such States. The Administrator, upon the Administrator's own motion or upon petition from the Governor of any affected State, or upon the recommendations of a transport commission established under subsection (b) of this section may—

- (A) add any State or portion of a State to a visibility transport region when the Administrator determines that the interstate transport of air pollutants from such State significantly contributes to visibility impairment in a class I area located within the transport region, or
- (B) remove any State or portion of a State from the region whenever the Administrator has reason to believe that the control of emissions in that State or

portion of the State pursuant to this section will not significantly contribute to the protection or enhancement of visibility in any class I area in the region.

(2) Visibility transport commissions

Whenever the Administrator establishes a transport region under subsection (c)(1) of this section, the Administrator shall establish a transport commission comprised of (as a minimum) each of the following members:

- (A) the Governor of each State in the Visibility Transport Region, or the Governor's designee;
- (B) The Administrator or the Administrator's designee; and
- (C) A representative of each Federal agency charged with the direct management of each class I area or areas within the Visibility Transport Region.

(3) Ex officio members

All representatives of the Federal Government shall be ex officio members.

(4) Federal Advisory Committee Act

The visibility transport commissions shall be exempt from the requirements of the Federal Advisory Committee Act [5 U.S.C. App.].

(d) Duties of visibility transport commissions

A Visibility Transport Commission—

(1) shall assess the scientific and technical data, studies, and other currently available information, including studies conducted pursuant to subsection (a)(1) of this section, pertaining to adverse impacts on visibility from potential or projected growth in emissions from sources located in the Visibility Transport Region; and

(2) shall, within 4 years of establishment, issue a report to the Administrator recommending what measures, if any, should be taken under this chapter to remedy such adverse impacts. The report required by this subsection shall address at least the following measures:

- (A) the establishment of clean air corridors, in which additional restrictions on increases in emissions may be appropriate to protect visibility in affected class I areas;
- (B) the imposition of the requirements of part D of this subchapter affecting the construction of new major stationary sources or major modifications to existing sources in such clean air corridors specifically including the alternative siting analysis provisions of section 7503(a)(5) of this title; and

(C) the promulgation of regulations under section 7491 of this title to address long range strategies for addressing regional haze which impairs visibility in affected class I areas.

(e) Duties of Administrator

(1) The Administrator shall, taking into account the studies pursuant to subsection (a)(1) of this section and the reports pursuant to subsection (d)(2) of this section and any other relevant information, within eighteen months of receipt of the report referred to in subsection (d)(2) of this section, carry out the Administrator's regulatory responsibilities under section 7491 of this title, including criteria for measuring "reasonable progress" toward the national goal.

(2) Any regulations promulgated under section 7491 of this title pursuant to this subsection shall require affected States to revise within 12 months their implementation plans under section 7410 of this title to contain such emission limits, schedules of compliance, and other measures as may be necessary to carry out regulations promulgated pursuant to this subsection.

(f) Grand Canyon visibility transport commission

The Administrator pursuant to subsection (c)(1) of this section shall, within 12 months, establish a visibility transport commission for the region affecting the visibility of the Grand Canyon National Park.

7. Clean Air Act § 302(y), 42 U.S.C. § 7602(y)

§ 7602. Definitions

When used in this chapter—

(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.

8. Clean Air Act § 307(b)(1) and (d), 42 U.S.C. § 7607(b)(1) and (d)

§7607. Administrative proceedings and judicial review

* * * * *

(b) Judicial review

(1) A petition for review of action of the Administrator in promulgating any national primary or secondary ambient air quality standard, any emission standard or requirement under section 7412 of this title, any standard of performance or requirement under section 7411 of this title, any standard under section 7521 of this title (other than a standard required to be prescribed under section 7521(b)(1) of this title), any determination under section 7521(b)(5) of this title, any control or prohibition under section 7545 of this title, any standard under section 7571 of this title, any rule issued under section 7413, 7419, or under section 7420 of this title, or any other nationally applicable regulations promulgated, or final action taken, by the Administrator under this chapter may be filed only in the United States Court of Appeals for the District of Columbia. A petition for review of the Administrator's action in approving or promulgating any implementation plan under section 7410 of this title or section 7411(d) of this title, any order under section 7411(j) of this title, under section 7412 of this title, under section 7419 of this title, or under section 7420 of this title, or his action under section 1857c-10(c)(2)(A), (B), or (C) of this title (as in effect before August 7, 1977) or under regulations thereunder, or revising regulations for enhanced monitoring and compliance certification programs under section 7414(a)(3) of this title, or any other final action of the Administrator under this chapter (including any denial or disapproval by the Administrator under subchapter I of this chapter) which is locally or regionally applicable may be filed only in the United States Court of Appeals for the appropriate circuit. Notwithstanding the preceding sentence a petition for review of any action referred to in such sentence may be filed only in the United States Court of Appeals for the District of Columbia if such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination. Any petition for review under this subsection shall be filed within sixty days from the date notice of such promulgation, approval, or action appears in the Federal Register, except that if such petition is based solely on grounds arising after such sixtieth day, then any petition for review under this subsection shall be filed within sixty days after such grounds arise. The filing of a petition for reconsideration by the Administrator of any otherwise final rule or action shall not affect the finality of such rule or action for purposes of judicial review nor extend the

time within which a petition for judicial review of such rule or action under this section may be filed, and shall not postpone the effectiveness of such rule or action.

(d) Rulemaking

(1) This subsection applies to—

(A) the promulgation or revision of any national ambient air quality standard under section 7409 of this title,

(B) the promulgation or revision of an implementation plan by the Administrator under section 7410(c) of this title,

(C) the promulgation or revision of any standard of performance under section 7411 of this title, or emission standard or limitation under section 7412(d) of this title, any standard under section 7412(f) of this title, or any regulation under section 7412(g)(1)(D) and (F) of this title, or any regulation under section 7412(m) or (n) of this title,

(D) the promulgation of any requirement for solid waste combustion under section 7429 of this title,

(E) the promulgation or revision of any regulation pertaining to any fuel or fuel additive under section 7545 of this title,

(F) the promulgation or revision of any aircraft emission standard under section 7571 of this title,

(G) the promulgation or revision of any regulation under subchapter IV–A of this chapter (relating to control of acid deposition),

(H) promulgation or revision of regulations pertaining to primary nonferrous smelter orders under section 7419 of this title (but not including the granting or denying of any such order),

(I) promulgation or revision of regulations under subchapter VI of this chapter (relating to stratosphere and ozone protection),

(J) promulgation or revision of regulations under part C of subchapter I of this chapter (relating to prevention of significant deterioration of air quality and protection of visibility),

(K) promulgation or revision of regulations under section 7521 of this title and test procedures for new motor vehicles or engines under section 7525 of this title, and the revision of a standard under section 7521(a)(3) of this title,

(L) promulgation or revision of regulations for noncompliance penalties under section 7420 of this title,

(M) promulgation or revision of any regulations promulgated under section 7541 of this title (relating to warranties and compliance by vehicles in actual use),

(N) action of the Administrator under section 7426 of this title (relating to interstate pollution abatement),

(O) the promulgation or revision of any regulation pertaining to consumer and commercial products under section 7511b(e) of this title,

(P) the promulgation or revision of any regulation pertaining to field citations under section 7413(d)(3) of this title,

(Q) the promulgation or revision of any regulation pertaining to urban buses or the clean-fuel vehicle, clean-fuel fleet, and clean fuel programs under part C of subchapter II of this chapter,

(R) the promulgation or revision of any regulation pertaining to nonroad engines or nonroad vehicles under section 7547 of this title,

(S) the promulgation or revision of any regulation relating to motor vehicle compliance program fees under section 7552 of this title,

(T) the promulgation or revision of any regulation under subchapter IV–A of this chapter (relating to acid deposition),

(U) the promulgation or revision of any regulation under section 7511b(f) of this title pertaining to marine vessels, and

(V) such other actions as the Administrator may determine.

The provisions of section 553 through 557 and section 706 of title 5 shall not, except as expressly provided in this subsection, apply to actions to which this subsection applies. This subsection shall not apply in the case of any rule or circumstance referred to in subparagraphs (A) or (B) of subsection 553(b) of title 5.

9. 40 C.F.R. § 51.301

§ 51.301 Definitions.

For purposes of this subpart:

Adverse impact on visibility means, for purposes of section 307, visibility impairment which interferes with the management, protection, preservation, or enjoyment of the visitor's visual experience of the Federal Class I area. This determination must be made on a case-by-case basis taking into account the geographic extent, intensity, duration, frequency and time of visibility impairments, and how these factors correlate with (1) times of visitor use of the Federal Class I area, and (2) the frequency and timing of natural conditions that reduce visibility. This term does not include effects on integral vistas.

Agency means the U.S. Environmental Protection Agency.

BART-eligible source means an *existing stationary facility* as defined in this section.

Best Available Retrofit Technology (BART) means an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the

energy and nonair quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

Building, structure, or facility means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities must be considered as part of the same industrial grouping if they belong to the same *Major Group* (i.e., which have the same two-digit code) as described in the *Standard Industrial Classification Manual, 1972* as amended by the 1977 Supplement (U.S. Government Printing Office stock numbers 4101-0066 and 003-005-00176-0 respectively).

Deciview means a measurement of visibility impairment. A deciview is a haze index derived from calculated light extinction, such that uniform changes in haziness correspond to uniform incremental changes in perception across the entire range of conditions, from pristine to highly impaired. The deciview haze index is calculated based on the following equation (for the purposes of calculating deciview, the atmospheric light extinction coefficient must be calculated from aerosol measurements):

$$\text{Deciview haze index} = 10 \ln_e (b_{\text{ext}} / 10 \text{ Mm}^{-1}).$$

Where b_{ext} = the atmospheric light extinction coefficient, expressed in inverse megameters (Mm^{-1}).

Existing stationary facility means any of the following stationary sources of air pollutants, including any reconstructed source, which was not in operation prior to August 7, 1962, and was in existence on August 7, 1977, and has the potential to emit 250 tons per year or more of any air pollutant. In determining potential to emit, fugitive emissions, to the extent quantifiable, must be counted.

Fossil-fuel fired steam electric plants of more than 250 million British thermal units per hour heat input,

Coal cleaning plants (thermal dryers),

Kraft pulp mills,

Portland cement plants,

Primary zinc smelters,

Iron and steel mill plants,

Primary aluminum ore reduction plants,

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 facilities,
Chemical process plants,
Fossil-fuel boilers of more than 250 million British thermal units per hour heat input,
Petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels,
Taconite ore processing facilities,
Glass fiber processing plants, and
Charcoal production facilities.

Federal Class I area means any Federal land that is classified or reclassified *Class I*.

Federal Land Manager means the Secretary of the department with authority over the Federal Class I area (or the Secretary's designee) or, with respect to Roosevelt-Campobello International Park, the Chairman of the Roosevelt-Campobello International Park Commission.

Federally enforceable means all limitations and conditions which are enforceable by the Administrator under the Clean Air Act including those requirements developed pursuant to parts 60 and 61 of this title, requirements within any applicable State Implementation Plan, and any permit requirements established pursuant to § 52.21 of this chapter or under regulations approved pursuant to part 51, 52, or 60 of this title.

Fixed capital cost means the capital needed to provide all of the depreciable components.

Fugitive Emissions means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

Geographic enhancement for the purpose of § 51.308 means a method, procedure, or process to allow a broad regional strategy, such as an emissions trading program designed to achieve greater reasonable progress than BART for regional haze, to accommodate BART for reasonably attributable impairment.

Implementation plan means, for the purposes of this part, any State Implementation Plan, Federal Implementation Plan, or Tribal Implementation Plan.

Indian tribe or *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.

In existence means that the owner or operator has obtained all necessary preconstruction approvals or permits required by Federal, State, or local air pollution emissions and air quality laws or regulations and either has (1) begun, or caused to begin, a continuous program of physical on-site construction of the facility or (2) entered into binding agreements or contractual obligations, which cannot be cancelled or modified without substantial loss to the owner or operator, to undertake a program of construction of the facility to be completed in a reasonable time.

In operation means engaged in activity related to the primary design function of the source.

Installation means an identifiable piece of process equipment.

Integral vista means a view perceived from within the mandatory Class I Federal area of a specific landmark or panorama located outside the boundary of the mandatory Class I Federal area.

Least impaired days means the average visibility impairment (measured in deciviews) for the twenty percent of monitored days in a calendar year with the lowest amount of visibility impairment.

Major stationary source and major modification mean major stationary source and major modification, respectively, as defined in § 51.166.

Mandatory Class I Federal Area means any area identified in part 81, subpart D of this title.

Most impaired days means the average visibility impairment (measured in deciviews) for the twenty percent of monitored days in a calendar year with the highest amount of visibility impairment.

Natural conditions includes naturally occurring phenomena that reduce visibility as measured in terms of light extinction, visual range, contrast, or coloration.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.

Reasonably attributable means attributable by visual observation or any other technique the State deems appropriate.

Reasonably attributable visibility impairment means visibility impairment that is caused by the emission of air pollutants from one, or a small number of sources.

Reconstruction will be presumed to have taken place where the fixed capital cost of the new component exceeds 50 percent of the fixed capital cost of a comparable entirely new source. Any final decision as to whether reconstruction has occurred must be made in accordance with the provisions of § 60.15 (f) (1) through (3) of this title.

Regional haze means visibility impairment that is caused by the emission of air pollutants from numerous sources located over a wide geographic area. Such sources include, but are not limited to, major and minor stationary sources, mobile sources, and area sources.

Secondary emissions means emissions which occur as a result of the construction or operation of an existing stationary facility but do not come from the existing stationary facility. Secondary emissions may include, but are not limited to, emissions from ships or

trains coming to or from the existing stationary facility.

Significant impairment means, for purposes of § 51.303, visibility impairment which, in the judgment of the Administrator, interferes with the management, protection, preservation, or enjoyment of the visitor's visual experience of the mandatory Class I Federal area. This determination must be made on a case-by-case basis taking into account the geographic extent, intensity, duration, frequency and time of the visibility impairment, and how these factors correlate with (1) times of visitor use of the mandatory Class I Federal area, and (2) the frequency and timing of natural conditions that reduce visibility.

State means "State" as defined in section 302(d) of the CAA.

Stationary Source means any building, structure, facility, or installation which emits or may emit any air pollutant.

Visibility impairment means any humanly perceptible change in visibility (light extinction, visual range, contrast, coloration) from that which would have existed under natural conditions.

Visibility in any mandatory Class I Federal area includes any integral vista associated with that area.

10. 40 C.F.R. § 51.308 (e)(1)(ii)(A)-(B)

§ 51.308 Regional haze program requirements.

* * * *

(e) *Best Available Retrofit Technology (BART) requirements for regional haze visibility impairment.* The State must submit an implementation plan containing emission limitations representing BART and schedules for compliance with BART for each BART-eligible source that may reasonably be anticipated to cause or contribute to any impairment of visibility in any mandatory Class I Federal area, unless the State demonstrates that an emissions trading program or other alternative will achieve greater reasonable progress toward natural visibility conditions.

(1) To address the requirements for BART, the State must submit an implementation plan containing the following plan elements and include documentation for all required analyses:

* * * * *

(ii) A determination of BART for each BART-eligible source in the State that emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility in any mandatory Class I Federal area. All such sources are subject to BART.

(A) The determination of BART must be based on an analysis of the best system of continuous emission control technology available and associated emission reductions achievable for each BART-eligible source that is subject to BART within the State. In this analysis, the State must take into consideration the technology available, the costs of compliance, the energy and nonair quality environmental impacts of compliance, any pollution control equipment in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

(B) The determination of BART for fossil-fuel fired power plants having a total generating capacity greater than 750 megawatts must be made pursuant to the guidelines in appendix Y of this part (Guidelines for BART Determinations Under the Regional Haze Rule).

11. 40 C.F.R. pt. 51 app. Y

APPENDIX Y TO PART 51—GUIDELINES FOR BART
DETERMINATIONS
UNDER THE REGIONAL HAZE RULE

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 3. In selecting a "best" alternative, should I consider the affordability of controls?

- 4. SO₂ limits for utility boilers
- 5. NO_x limits for utility boilers
- V. Enforceable Limits/Compliance Date

I. INTRODUCTION AND OVERVIEW

A. What is the purpose of the guidelines?

The Clean Air Act (CAA), in sections 169A and 169B, contains requirements for the protection of visibility in 156 scenic areas across the United States. To meet the CAA's requirements, we published regulations to protect against a particular type of visibility impairment known as "regional haze." The regional haze rule is found in this part at 40 CFR 51.300 through 51.309. These regulations require, in 40 CFR 51.308(e), that certain types of existing stationary sources of air pollutants install best available retrofit technology (BART). The guidelines are designed to help States and others (1) identify those sources that must comply with the BART requirement, and (2) determine the level of control technology that represents BART for each source.

B. What does the CAA require generally for improving visibility?

Section 169A of the CAA, added to the CAA by the 1977 amendments, requires States to protect and improve visibility in certain scenic areas of national importance. The scenic areas protected by section 169A are "the mandatory Class I Federal Areas * * * where visibility is an important value." In these guidelines, we refer to these as "Class I areas." There are 156 Class I areas, including 47 national parks (under the jurisdiction of the Department of Interior—National Park Service), 108 wilderness areas (under the jurisdiction of the Department of the Interior—Fish and Wildlife Service or the Department of Agriculture—U.S. Forest Service), and one International Park (under the jurisdiction of the Roosevelt-Campobello International Commission). The Federal Agency with jurisdiction over a particular Class I area is referred to in the CAA as the Federal Land Manager. A complete list of the Class I areas is contained in 40 CFR 81.401 through 81.437, and you can find a map of the Class I areas at the following Internet site: <http://www.epa.gov/ttn/oarpg/t1/fr/notes/classimp.gif>.

The CAA establishes a national goal of eliminating man-made visibility impairment from all Class I areas. As part of the plan for achieving this goal, the visibility protection provisions in the CAA mandate that EPA issue regulations requiring that States adopt measures in their State implementation plans (SIPs), including long-term strategies, to provide for reasonable progress towards this national goal. The CAA

also requires States to coordinate with the Federal Land Managers as they develop their strategies for addressing visibility.

C. What is the BART requirement in the CAA?

1. Under section 169A(b)(2)(A) of the CAA, States must require certain existing stationary sources to install BART. The BART provision applies to “major stationary sources” from 26 identified source categories which have the potential to emit 250 tons per year or more of any air pollutant. The CAA requires only sources which were put in place during a specific 15-year time interval to be subject to BART. The BART provision applies to sources that existed as of the date of the 1977 CAA amendments (that is, August 7, 1977) but which had not been in operation for more than 15 years (that is, not in operation as of August 7, 1962).

2. The CAA requires BART review when any source meeting the above description “emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility” in any Class I area. In identifying a level of control as BART, States are required by section 169A(g) of the CAA to consider:

- (a) The costs of compliance,
- (b) The energy and non-air quality environmental impacts of compliance,
- (c) Any existing pollution control technology in use at the source,
- (d) The remaining useful life of the source, and
- (e) The degree of visibility improvement which may reasonably be anticipated from the use of BART.

3. The CAA further requires States to make BART emission limitations part of their SIPs. As with any SIP revision, States must provide an opportunity for public comment

on the BART determinations, and EPA’s action on any SIP revision will be subject to judicial review.

D. What types of visibility problems does EPA address in its regulations?

1. We addressed the problem of visibility in two phases. In 1980, we published regulations addressing what we termed “reasonably attributable” visibility impairment. Reasonably attributable visibility impairment is the result of emissions from one or a few sources that are generally located in close proximity to a specific Class I area. The regulations addressing reasonably attributable visibility impairment are published in 40 CFR 51.300 through 51.307.

2. On July 1, 1999, we amended these regulations to address the second, more common, type of visibility impairment known as “regional haze.” Regional haze is the result of the collective contribution of many sources over a broad region. The regional

haze rule slightly modified 40 CFR 51.300 through 51.307, including the addition of a few definitions in § 51.301, and added new §§ 51.308 and 51.309.

E. What are the BART requirements in EPA's regional haze regulations?

1. In the July 1, 1999 rulemaking, we added a BART requirement for regional haze. We amended the BART requirements in 2005. You will find the BART requirements in 40 CFR 51.308(e). Definitions of terms used in 40 CFR 51.308(e)(1) are found in 40 CFR 51.301.

2. As we discuss in detail in these guidelines, the regional haze rule codifies and clarifies the BART provisions in the CAA. The rule requires that States identify and list "BART-eligible sources," that is, that States identify and list those sources that fall within the 26 source categories, were put in place during the 15-year window of time from 1962 to 1977, and have potential emissions greater than 250 tons per year. Once the State has identified the BART-eligible sources, the next step is to identify those BART-eligible sources that may "emit any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility." Under the rule, a source which fits this description is "subject to BART." For each source subject to BART, 40 CFR 51.308(e)(1)(ii)(A) requires that States identify the level of control representing BART after considering the factors set out in CAA section 169A(g), as follows:

—States must identify the best system of continuous emission control technology for each source subject to BART taking into account the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use at the source, the remaining useful life of the source, and the degree of visibility improvement that may be expected from available control technology.

3. After a State has identified the level of control representing BART (if any), it must establish an emission limit representing BART and must ensure compliance with that requirement no later than 5 years after EPA approves the SIP. States may establish design, equipment, work practice or other operational standards when limitations on measurement technologies make emission standards infeasible.

F. What is included in the guidelines?

1. The guidelines provide a process for making BART determinations that States can use in implementing the regional haze BART requirements on a source-by-source basis, as provided in 40 CFR 51.308(e)(1).

States must follow the guidelines in making BART determinations on a source-by-source basis for 750 megawatt (MW) power plants but are not required to use the

process in the guidelines when making BART determinations for other types of sources.

2. The BART analysis process, and the contents of these guidelines, are as follows:

(a) *Identification of all BART-eligible sources.* Section II of these guidelines outlines a step-by-step process for identifying BART-eligible sources.

(b) *Identification of sources subject to BART.* As noted above, sources “subject to BART” are those BART-eligible sources which “emit a pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility in any Class I area.” We discuss considerations for identifying sources subject to BART in section III of the guidance.

(c) *The BART determination process.* For each source subject to BART, the next step is to conduct an analysis of emissions control alternatives. This step includes the identification of available, technically feasible retrofit technologies, and for each technology identified, an analysis of the cost of compliance, the energy and non-air quality environmental impacts, and the degree of visibility improvement in affected Class I areas resulting from the use of the control technology. As part of the BART analysis, the State should also take into account the remaining useful life of the source and any existing control technology present at the source. For each source, the State will determine a “best system of continuous emission reduction” based upon its evaluation of these factors. Procedures for the BART determination step are described in section IV of these guidelines.

(d) *Emissions limits.* States must establish emission limits, including a deadline for compliance, consistent with the BART determination process for each source subject to BART. Considerations related to these limits are discussed in section V of these guidelines.

G. Who is the target audience for the guidelines?

1. The guidelines are written primarily for the benefit of State, local and Tribal agencies, and describe a process for making the BART determinations and establishing the emission limitations that must be included in their SIPs or Tribal implementation plans (TIPs). Throughout the guidelines, which are written in a question and answer format, we ask questions “How do I * * *?” and answer with phrases “you should * * *, you must * * *” The “you” means a State, local or Tribal agency conducting the analysis. We have used this format to make the guidelines simpler to understand, but we recognize that States have the authority to require source owners to assume part of the analytical burden, and that there will be differences in how the supporting information is collected and documented. We also recognize that data collection, analysis, and rule development may be performed by Regional Planning Organizations, for adoption within each SIP or TIP.

2. The preamble to the 1999 regional haze rule discussed at length the issue of Tribal implementation of the requirements to submit a plan to address visibility. As explained there, requirements related to visibility are among the programs for which Tribes may be determined eligible and receive authorization to implement under the “Tribal Authority Rule” (“TAR”) (40 CFR 49.1 through 49.11). Tribes are not subject to the deadlines for submitting visibility implementation plans and may use a modular approach to CAA implementation. We believe there are very few BART-eligible sources located on Tribal lands. Where such sources exist, the affected Tribe may apply for delegation of implementation authority for this rule, following the process set forth in the TAR.

H. Do EPA regulations require the use of these guidelines?

Section 169A(b) requires us to issue guidelines for States to follow in establishing BART emission limitations for fossil-fuel fired power plants having a capacity in excess of 750 megawatts. This document fulfills that requirement, which is codified in 40 CFR 51.308(e)(1)(ii)(B). The guidelines establish an approach to implementing the requirements of the BART provisions of the regional haze rule; we believe that these procedures and the discussion of the requirements of the regional haze rule and the CAA should be useful to the States. For sources other than 750 MW power plants, however, States retain the discretion to adopt approaches that differ from the guidelines.

II. HOW TO IDENTIFY BART-ELIGIBLE SOURCES

This section provides guidelines on how to identify BART-eligible sources. A BART-eligible source is an existing stationary source in any of 26 listed categories which meets criteria for startup dates and potential emissions.

A. What are the steps in identifying BART-eligible sources?

Figure 1 shows the steps for identifying whether the source is a “BART-eligible source:”

- Step 1: Identify the emission units in the BART categories,
- Step 2: Identify the start-up dates of those emission units, and
- Step 3: Compare the potential emissions to the 250 ton/yr cutoff.

Figure 1. How to determine whether a source is BART-eligible:

- Step 1: Identify emission units in the BART categories
- Does the plant contain emissions units in one or more of the 26 source categories?

→ No → Stop

→ Yes → Proceed to Step 2

Step 2: Identify the start-up dates of these emission units
Do any of these emissions units meet the following two tests?
In existence on August 7, 1977

AND

Began operation after August 7, 1962

→ No → Stop

→ Yes → Proceed to Step 3

Step 3: Compare the potential emissions from these emission units to the 250 ton/yr cutoff

Identify the “stationary source” that includes the emission units you identified in Step 2.

Add the current potential emissions from all the emission units identified in Steps 1 and 2 that are included within the “stationary source” boundary.

Are the potential emissions from these units 250 tons per year or more for any visibility-impairing pollutant?

→ No → Stop

→ Yes → These emissions units comprise the “BART-eligible source.”

1. Step 1: Identify Emission Units in the BART Categories

1. The BART requirement only applies to sources in specific categories listed in the CAA. The BART requirement does not apply to sources in other source categories, regardless of their emissions. The listed categories are:

- (1) Fossil-fuel fired steam electric plants of more than 250 million British thermal units (BTU) per hour heat input,
- (2) Coal cleaning plants (thermal dryers),
- (3) Kraft pulp mills,
- (4) Portland cement plants,
- (5) Primary zinc smelters,
- (6) Iron and steel mill plants,
- (7) Primary aluminum ore reduction plants,
- (8) Primary copper smelters,
- (9) Municipal incinerators capable of charging more than 250 tons of refuse per day,
- (10) Hydrofluoric, sulfuric, and nitric acid plants,

- (11) Petroleum refineries,
- (12) Lime plants,
- (13) Phosphate rock processing plants,
- (14) Coke oven batteries,
- (15) Sulfur recovery plants,
- (16) Carbon black plants (furnace process),
- (17) Primary lead smelters,
- (18) Fuel conversion plants,
- (19) Sintering plants,
- (20) Secondary metal production facilities,
- (21) Chemical process plants,
- (22) Fossil-fuel boilers of more than 250 million BTUs per hour heat input,
- (23) Petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels,
- (24) Taconite ore processing facilities,
- (25) Glass fiber processing plants, and
- (26) Charcoal production facilities.

2. Some plants may have emission units from more than one category, and some emitting equipment may fit into more than one category. Examples of this situation are sulfur recovery plants at petroleum refineries, coke oven batteries and sintering plants at steel mills, and chemical process plants at refineries. For Step 1, you identify all of the emissions units at the plant that fit into one or more of the listed categories. You do not identify emission units in other categories.

Example: A mine is collocated with an electric steam generating plant and a coal cleaning plant. You would identify emission units associated with the electric steam generating plant and the coal cleaning plant, because they are listed categories, but not the mine, because coal mining is not a listed category.

3. The category titles are generally clear in describing the types of equipment to be listed. Most of the category titles are very broad descriptions that encompass all emission

units associated with a plant site (for example, “petroleum refining” and “kraft pulp mills”). This same list of categories appears in the PSD regulations. States and source owners need not revisit any interpretations of the list made previously for purposes of the PSD program. We provide the following clarifications for a few of the category titles:

(1) “*Steam electric plants of more than 250 million BTU/hr heat input.*” Because the category refers to “plants,” we interpret this category title to mean that boiler capacities should be aggregated to determine whether the 250 million BTU/hr threshold is reached. This definition includes only those plants that generate electricity for sale. Plants that cogenerate steam and electricity also fall within the definition of “steam electric plants”. Similarly, combined cycle turbines are also

considered “steam electric plants” because such facilities incorporate heat recovery steam generators. Simple cycle turbines, in contrast, are not “steam electric plants” because these turbines typically do not generate steam.

Example: A stationary source includes a steam electric plant with three 100 million BTU/hr boilers. Because the aggregate capacity exceeds 250 million BTU/hr for the “plant,” these boilers would be identified in Step 2.

(2) “*Fossil-fuel boilers of more than 250 million BTU/hr heat input.*” We interpret this category title to cover only those boilers that are individually greater than 250 million BTU/hr. However, an individual boiler smaller than 250 million BTU/hr should be subject to BART if it is an integral part of a process description at a plant that is in a different BART category—for example, a boiler at a Kraft pulp mill that, in addition to providing steam or mechanical power, uses the waste liquor from the process as a fuel. In general, if the process uses any by-product of the boiler and the boiler’s function is to serve the process, then the boiler is integral to the process and should be considered to be part of the process description.

Also, you should consider a multi-fuel boiler to be a “fossil-fuel boiler” if it burns any amount of fossil fuel. You may take federally and State enforceable operational limits into account in determining whether a multi-fuel boiler’s fossil fuel capacity exceeds 250 million Btu/hr.

(3) “*Petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels.*” The 300,000 barrel cutoff refers to total facility-wide tank capacity for tanks that were put in place within the 1962–1977 time period, and includes gasoline and other petroleum-derived liquids.

(4) “*Phosphate rock processing plants.*” This category descriptor is broad, and includes all types of phosphate rock processing facilities, including elemental phosphorous plants as well as fertilizer production plants.

(5) “*Charcoal production facilities.*” We interpret this category to include charcoal briquet manufacturing and activated carbon production.

(6) “*Chemical process plants.*” and pharmaceutical manufacturing. Consistent with past policy, we interpret the category “chemical process plants” to include those facilities within the 2-digit Standard Industrial Classification (SIC) code 28. Accordingly, we interpret the term “chemical process plants” to include pharmaceutical manufacturing facilities.

(7) “*Secondary metal production.*” We interpret this category to include nonferrous metal facilities included within SIC code 3341, and secondary ferrous metal facilities that we also consider to be included within the category “iron and steel mill plants.”

(8) “*Primary aluminum ore reduction.*” We interpret this category to include those facilities covered by 40 CFR 60.190, the new source performance standard (NSPS) for primary aluminum ore reduction plants. This definition is also consistent with the definition at 40 CFR 63.840.

2. Step 2: Identify the Start-Up Dates of the Emission Units

1. Emissions units listed under Step 1 are BART-eligible only if they were “in existence” on August 7, 1977 but were not “in operation” before August 7, 1962.

What does “in existence on August 7, 1977” mean?

2. The regional haze rule defines “in existence” to mean that:

“the owner or operator has obtained all necessary preconstruction approvals or permits required by Federal, State, or local air pollution emissions and air quality laws or regulations and either has (1) begun, or caused to begin, a continuous program of physical on-site construction of the facility or (2) entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of construction of the facility to be completed in a reasonable time.” 40 CFR 51.301.

As this definition is essentially identical to the definition of “commence construction” as that term is used in the PSD regulations, the two terms mean the same thing. See 40 CFR 51.165(a)(1)(xvi) and 40 CFR 52.21(b)(9). Under this definition, an emissions unit could be “in existence” even if it did not begin operating until several years after 1977.

Example: The owner of a source obtained all necessary permits in early 1977 and entered into binding construction agreements in June 1977. Actual on-site construction began in late 1978, and construction was completed in mid-1979. The source began operating in September 1979. The emissions unit was “in existence” as of August 7, 1977.

Major stationary sources which commenced construction AFTER August 7, 1977 (*i.e.*, major stationary sources which were not “in existence” on August 7, 1977) were subject to new source review (NSR) under the PSD program. Thus, the August 7, 1977 “in existence” test is essentially the same thing as the identification of emissions units that were grandfathered from the NSR review requirements of the 1977 CAA amendments.

3. Sources are not BART-eligible if the only change at the plant during the relevant time period was the addition of pollution controls. For example, if the only change at a copper smelter during the 1962 through 1977 time period was the addition of acid plants for the reduction of SO₂ emissions, these emission controls would not by themselves trigger a BART review.

What does “in operation before August 7, 1962” mean?

An emissions unit that meets the August 7, 1977 “in existence” test is not BART-eligible if it was in operation before August 7, 1962. “In operation” is defined as “engaged in activity related to the primary design function of the source.” This means that a source must have begun actual operations by August 7, 1962 to satisfy this test.

Example: The owner or operator entered into binding agreements in 1960. Actual on-site construction began in 1961, and construction was complete in mid-1962. The source began operating in September 1962. The emissions unit *was not* “in operation” before August 7, 1962 and is therefore subject to BART.

What is a “reconstructed source?”

1. Under a number of CAA programs, an existing source which is completely or substantially rebuilt is treated as a new source. Such “reconstructed” sources are treated as new sources as of the time of the reconstruction. Consistent with this overall approach to reconstructions, the definition of BART-eligible facility (reflected in detail in the definition of “existing stationary facility”) includes consideration of sources that were in operation before August 7, 1962, but were reconstructed during the August 7, 1962 to August 7, 1977 time period.

2. Under the regional haze regulations at 40 CFR 51.301, a reconstruction has taken place if “the fixed capital cost of the new component exceeds 50 percent of the fixed capital cost of a comparable entirely new source.”

The rule also states that “[a]ny final decision as to whether reconstruction has occurred must be made in accordance with the provisions of §§ 60.15 (f)(1) through (3) of this title.” “[T]he provisions of §§ 60.15(f)(1) through (3)” refers to the general provisions for New Source Performance Standards (NSPS). Thus, the same policies and procedures for identifying reconstructed “affected facilities” under the NSPS program must also be used to identify reconstructed “stationary sources” for purposes of the BART requirement.

3. You should identify reconstructions on an emissions unit basis, rather than on a plant-wide basis. That is, you need to identify only the reconstructed emission units meeting the 50 percent cost criterion. You should include reconstructed emission units in the list of emission units you identified in Step 1. You need consider as possible reconstructions only those emissions units with the potential to emit more than 250 tons per year of any visibility-impairing pollutant.

4. The “in operation” and “in existence” tests apply to reconstructed sources. If an emissions unit was reconstructed and began actual operation before August 7, 1962, it is not BART-eligible. Similarly, any emissions unit for which a reconstruction “commenced” after August 7, 1977, is not BART-eligible.

How are modifications treated under the BART provision?

1. The NSPS program and the major source NSR program both contain the concept of modifications. In general, the term “modification” refers to any physical change or change in the method of operation of an emissions unit that results in an increase in emissions.

2. The BART provision in the regional haze rule contains no explicit treatment of modifications or how modified emissions units, previously subject to the requirement to install best available control technology (BACT), lowest achievable emission rate (LAER) controls, and/or NSPS are treated under the rule. As the BART requirements in the CAA do not appear to provide any exemption for sources which have been modified since 1977, the best interpretation of the CAA visibility provisions is that a subsequent modification does not change a unit’s construction date for the purpose of BART applicability. Accordingly, if an emissions unit began operation before 1962, it is not BART-eligible if it was modified between 1962 and 1977, so long as the modification is not also a “reconstruction.” On the other hand, an emissions unit which began operation within the 1962–1977 time window, but was modified after August 7, 1977, is BART-eligible. We note, however, that if such a modification was a major modification that resulted in the installation of controls, the State will take this into account during the review process and may find that the level of controls already in place are consistent with BART.

3. Step 3: Compare the Potential Emissions to the 250 Ton/Yr Cutoff

The result of Steps 1 and 2 will be a list of emissions units at a given plant site, including reconstructed emissions units, that are within one or more of the BART categories and that were placed into operation within the 1962–1977 time window. The third step is to determine whether the total emissions represent a current potential to emit that is greater than 250 tons per year of any single visibility impairing pollutant. Fugitive emissions, to the extent quantifiable, must be counted. In most cases, you will add the potential emissions from all emission units on the list resulting from Steps 1 and 2. In a few cases, you may need to determine whether the plant contains more than one “stationary source” as the regional haze rule defines that term, and as we explain further below.

What pollutants should I address?

Visibility-impairing pollutants include the following:

- (1) Sulfur dioxide (SO₂),
- (2) Nitrogen oxides (NO_x), and
- (3) Particulate matter.

You may use PM₁₀ as an indicator for particulate matter in this initial step. [Note that we do not recommend use of total suspended particulates (TSP) as in indicator

for particulate matter.] As emissions of PM_{10} include the components of $PM_{2.5}$ as a subset, there is no need to have separate 250 ton thresholds for PM_{10} and $PM_{2.5}$; 250 tons of PM_{10} represents at most 250 tons of $PM_{2.5}$, and at most 250 tons of any individual particulate species such as elemental carbon, crustal material, etc.

However, if you determine that a source of particulate matter is BART-eligible, it will be important to distinguish between the fine and coarse particle components of direct particulate emissions in the remainder of the BART analysis, including for the purpose of modeling the source's impact on visibility.

This is because although both fine and coarse particulate matter contribute to visibility impairment, the long-range transport of fine particles is of particular concern in the formation of regional haze. Thus, for example, air quality modeling results used in the BART determination will provide a more accurate prediction of a source's impact on visibility if the inputs into the model account for the relative particle size of any directly emitted particulate matter (*i.e.* PM_{10} vs. $PM_{2.5}$).

You should exercise judgment in deciding whether the following pollutants impair visibility in an area:

- (4) Volatile organic compounds (VOC), and
- (5) Ammonia and ammonia compounds.

You should use your best judgment in deciding whether VOC or ammonia emissions from a source are likely to have an impact on visibility in an area. Certain types of VOC emissions, for example, are more likely to form secondary organic aerosols than others.¹ Similarly, controlling ammonia emissions in some areas may not have a significant impact on visibility. You need not provide a formal showing of an individual decision that a source of VOC or ammonia emissions is not subject to BART review. Because air quality modeling may not be feasible for individual sources of VOC or ammonia, you should also exercise your judgment in assessing the degree of visibility impacts due to emissions of VOC and emissions of ammonia or ammonia compounds. You should fully document the basis for judging that a VOC or ammonia source merits BART review, including your assessment of the source's contribution to visibility impairment.

What does the term "potential" emissions mean?

The regional haze rule defines potential to emit as follows:

"Potential to emit" means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant including air pollution

¹ *Fine particles: Overview of Atmospheric Chemistry, Sources of Emissions, and Ambient Monitoring Data*, Memorandum to Docket OAR 2002-006, April 1, 2005.

control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.

The definition of “potential to emit” means that a source which actually emits less than 250 tons per year of a visibility-impairing pollutant is BART-eligible if its emissions

would exceed 250 tons per year when operating at its maximum capacity given its physical and operational design (and considering all federally enforceable and State enforceable permit limits.)

Example: A source, while operating at one-fourth of its capacity, emits 75 tons per year of SO₂. If it were operating at 100 percent of its maximum capacity, the source would emit 300 tons per year. Because under the above definition such a source would have “potential” emissions that exceed 250 tons per year, the source (if in a listed category and built during the 1962–1977 time window) would be BART-eligible.

How do I identify whether a plant has more than one “stationary source?”

1. The regional haze rule, in 40 CFR 51.301, defines a stationary source as a “building, structure, facility or installation which emits or may emit any air pollutant.”

² The rule further defines “building, structure or facility” as:

all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities must be considered as part of the same industrial grouping if they belong to the same Major Group (*i.e.*, which have the same two-digit code) as described in the Standard Industrial Classification Manual, 1972 as amended by the 1977 Supplement (U.S. Government Printing Office stock numbers 4101–0066 and 003–005–00176–0, respectively).

2. In applying this definition, it is necessary to determine which facilities are located on “contiguous or adjacent properties.” Within this contiguous and adjacent area, it is also necessary to group those emission units that are under “common control.” We note that these plant boundary issues and “common control” issues are very similar to those already addressed in implementation of the title V operating permits program and in NSR.

² NOTE: Most of these terms and definitions are the same for regional haze and the 1980 visibility regulations. For the regional haze rule we use the term “BART-eligible source” rather than “existing stationary facility” to clarify that only a limited subset of existing stationary sources are subject to BART.

3. For emission units within the “contiguous or adjacent” boundary and under common control, you must group emission units that are within the same industrial grouping (that is, associated with the same 2-digit SIC code) in order to define the stationary source.³ For most plants on the BART source category list, there will only be one 2-digit SIC that applies to the entire plant. For example, all emission units associated with kraft pulp mills are within SIC code 26, and chemical process plants will generally include emission units that are all within SIC code 28. The “2-digit SIC test” applies in the same way as the test is applied in the major source NSR programs.

4. For purposes of the regional haze rule, you must group emissions from all emission units put in place within the 1962–1977 time period that are within the 2-digit SIC code, even if those emission units are in different categories on the BART category list.

Examples: A chemical plant which started operations within the 1962 to 1977 time period manufactures hydrochloric acid (within the category title “Hydrochloric, sulfuric, and nitric acid plants”) and various organic chemicals (within the category title “chemical process plants”). All of the emission units are within SIC code 28 and, therefore, all the emission units are considered in determining BART eligibility of the plant. You sum the emissions over all of these emission units to see whether there are more than 250 tons per year of potential emissions.

A steel mill which started operations within the 1962 to 1977 time period includes a sintering plant, a coke oven battery, and various other emission units. All of the emission units are within SIC code 33. You sum the emissions over all of these emission units to see whether there are more than 250 tons per year of potential emissions.

4. Final Step: Identify the Emissions Units and Pollutants That Constitute the BART-Eligible Source

³ We recognize that we are in a transition period from the use of the SIC system to a new system called the North American Industry Classification System (NAICS). For purposes of identifying BART-eligible sources, you may use either 2-digit SICs or the equivalent in the NAICS system.

⁴ NOTE: The concept of support facility used for the NSR program applies here as well. Support facilities, that is facilities that convey, store or otherwise assist in the production of the principal product, must be grouped with primary facilities even when the facilities fall within separate SIC codes. For purposes of BART reviews, however, such support facilities (a) must be within one of the 26 listed source categories and (b) must have been in existence as of August 7, 1977, and (c) must not have been in operation as of August 7, 1962.

If the emissions from the list of emissions units at a stationary source exceed a potential to emit of 250 tons per year for any visibility-impairing pollutant, then that collection of emissions units is a BART-eligible source.

Example: A stationary source comprises the following two emissions units, with the following potential emissions:

Emissions unit A

200 tons/yr SO₂

150 tons/yr NO_x

25 tons/yr PM

Emissions unit B

100 tons/yr SO₂

75 tons/yr NO_x

10 tons/yr PM

For this example, potential emissions of SO₂ are 300 tons/yr, which exceeds the 250 tons/yr threshold. Accordingly, the entire “stationary source”, that is, emissions units A and B, may be subject to a BART review for SO₂, NO_x, and PM, even though the potential emissions of PM and NO_x at each emissions unit are less than 250 tons/yr each.

Example: The total potential emissions, obtained by adding the potential emissions of all emission units in a listed category at a plant site, are as follows:

200 tons/yr SO₂

150 tons/yr NO_x

25 tons/yr PM

Even though total emissions exceed 250 tons/yr, no individual regulated pollutant exceeds 250 tons/yr and this source is not BART-eligible.

Can States establish de minimis levels of emissions for pollutants at BART-eligible sources?

In order to simplify BART determinations, States may choose to identify de minimis levels of pollutants at BART-eligible sources (but are not required to do so). De minimis values should be identified with the purpose of excluding only those emissions so minimal that they are unlikely to contribute to regional haze. Any de minimis values that you adopt must not be higher than the PSD applicability levels: 40 tons/yr for SO₂ and NO_x and 15 tons/yr for PM₁₀. These de minimis levels may only be applied on a plant-wide basis.

III. HOW TO IDENTIFY SOURCES “SUBJECT TO BART”

Once you have compiled your list of BART-eligible sources, you need to determine whether (1) to make BART determinations for all of them or (2) to consider exempting some of them from BART because they may not reasonably be anticipated to cause or contribute to any visibility impairment in a Class I area. If you decide to make BART determinations for all the BART-eligible sources on your list, you should work with your regional planning organization (RPO) to show that, collectively, they cause or contribute to visibility impairment in at least one Class I area. You should then make individual BART determinations by applying the five statutory factors discussed in Section IV below.

On the other hand, you also may choose to perform an initial examination to determine whether a particular BART-eligible source or group of sources causes or contributes to visibility impairment in nearby Class I areas. If your analysis, or information submitted by the source, shows that an individual source or group of sources (or certain pollutants from those sources) is not reasonably anticipated to cause or contribute to any visibility impairment in a Class I area, then you do not need to make BART determinations for that source or group of sources (or for certain pollutants from those sources). In such a case, the source is not “subject to BART” and you do not need to apply the five statutory factors to make a BART determination. This section of the Guideline discusses several approaches that you can use to exempt sources from the BART determination process.

A. What Steps Do I Follow To Determine Whether a Source or Group of Sources Cause or Contribute to Visibility Impairment for Purposes of BART?

1. How Do I Establish a Threshold?

One of the first steps in determining whether sources cause or contribute to visibility impairment for purposes of BART is to establish a threshold (measured in deciviews) against which to measure the visibility impact of one or more sources. A single source that is responsible for a 1.0 deciview change or more should be considered to “cause” visibility impairment; a source that causes less than a 1.0 deciview change may still contribute to visibility impairment and thus be subject to BART.

Because of varying circumstances affecting different Class I areas, the appropriate threshold for determining whether a source “contributes to any visibility impairment” for the purposes of BART may reasonably differ across States. As a general matter, any threshold that you use for determining whether a source “contributes” to visibility impairment should not be higher than 0.5 deciviews.

In setting a threshold for “contribution,” you should consider the number of emissions sources affecting the Class I areas at issue and the magnitude of the

individual sources' impacts.⁵ In general, a larger number of sources causing impacts in a Class I area may warrant a lower contribution threshold. States remain free to use a threshold lower than 0.5 deciviews if they conclude that the location of a large number of BART-eligible sources within the State and in proximity to a Class I area justify this approach.⁶

2. What Pollutants Do I Need To Consider?

You must look at SO₂, NO_x, and direct particulate matter (PM) emissions in determining whether sources cause or contribute to visibility impairment, including both PM₁₀ and PM_{2.5}. Consistent with the approach for identifying your BART-eligible sources, you do not need to consider less than de minimis emissions of these pollutants from a source.

As explained in section II, you must use your best judgement to determine whether VOC or ammonia emissions are likely to have an impact on visibility in an area. In addition, although as explained in Section II, you may use PM₁₀ an indicator for particulate matter in determining whether a source is BART-eligible, in determining whether a source contributes to visibility impairment, you should distinguish between the fine and coarse particle components of direct particulate emissions. Although both fine and coarse particulate matter contribute to visibility impairment, the long-range transport of fine particles is of particular concern in the formation of regional haze. Air quality modeling results used in the BART determination will provide a more accurate prediction of a source's impact on visibility if the inputs into the model account for the relative particle size of any directly emitted particulate matter (*i.e.*, PM₁₀ vs. PM_{2.5}).

3. What Kind of Modeling Should I Use To Determine Which Sources and Pollutants Need Not Be Subject to BART?

This section presents several options for determining that certain sources need not be subject to BART. These options rely on different modeling and/or emissions analysis approaches. They are provided for your guidance.

⁵ We expect that regional planning organizations will have modeling information that identifies sources affecting visibility in individual class I areas.

⁶ Note that the contribution threshold should be used to determine whether an individual source is reasonably anticipated to contribute to visibility impairment. You should not aggregate the visibility effects of multiple sources and compare their collective effects against your contribution threshold because this would inappropriately create a "contribute to contribution" test.

You may also use other reasonable approaches for analyzing the visibility impacts of an individual source or group of sources.

Option 1: Individual Source Attribution Approach (Dispersion Modeling)

You can use dispersion modeling to determine that an individual source cannot reasonably be anticipated to cause or contribute to visibility impairment in a Class I area and thus is not subject to BART. Under this option, you can analyze an individual source's impact on visibility as a result of its emissions of SO₂, NO_x and direct PM emissions.

Dispersion modeling cannot currently be used to estimate the predicted impacts on visibility from an individual source's emissions of VOC or ammonia. You may use a more qualitative assessment to determine on a case-by-case basis which sources of VOC or ammonia emissions may be likely to impair visibility and should therefore be subject to BART review, as explained in section II.A.3. above.

You can use CALPUFF⁷ or other appropriate model to predict the visibility impacts from a single source at a Class I area. CALPUFF is the best regulatory modeling application currently available for predicting a single source's contribution to visibility impairment and is currently the only EPA-approved model for use in estimating single source pollutant concentrations resulting from the long range transport of primary pollutants.⁸ It can also be used for some other purposes, such as the visibility assessments addressed in today's rule, to account for the chemical transformation of SO₂ and NO_x.

There are several steps for making an individual source attribution using a dispersion model:

1. *Develop a modeling protocol.* Some critical items to include in the protocol are the meteorological and terrain data that will be used, as well as the source-specific information (stack height, temperature, exit velocity, elevation, and emission rates of applicable pollutants) and receptor data from appropriate Class I areas. We recommend following EPA's *Interagency Workgroup on Air Quality Modeling (IWAQM)*

⁷ The model code and its documentation are available at no cost for download from <http://www.epa.gov/scram001/tt22.htm#calpuff>.

⁸ The Guideline on Air Quality Models, 40 CFR part 51, appendix W, addresses the regulatory application of air quality models for assessing criteria pollutants under the CAA, and describes further the procedures for using the CALPUFF model, as well as for obtaining approval for the use of other, non-guideline models.

*Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts*⁹ for parameter settings and meteorological data inputs. You may use other settings from those in IWAQM, but you should identify these settings and explain your selection of these settings.

One important element of the protocol is in establishing the receptors that will be used in the model. The receptors that you use should be located in the nearest Class I area with sufficient density to identify the likely visibility effects of the source. For other Class I areas in relatively close proximity to a BART-eligible source, you may model a few strategic receptors to determine whether effects at those areas may be greater than at the nearest Class I area. For example, you might choose to locate receptors at these areas at the closest point to the source, at the highest and lowest elevation in the Class I area, at the IMPROVE monitor, and at the approximate expected plume release height. If the highest modeled effects are observed at the nearest Class I area, you may choose not to analyze the other Class I areas any further as additional analyses might be unwarranted.

You should bear in mind that some receptors within the relevant Class I area may be less than 50 km from the source while other receptors within that same Class I area may be greater than 50 km from the same source.

As indicated by the Guideline on Air Quality Models, 40 CFR part 51, appendix W, this situation may call for the use of two different modeling approaches for the same Class I area and source, depending upon the State's chosen method for modeling sources less than 50 km. In situations where you are assessing visibility impacts for source-receptor distances less than 50 km, you should use expert modeling judgment in determining visibility impacts, giving consideration to both CALPUFF and other appropriate methods.

In developing your modeling protocol, you may want to consult with EPA and your regional planning organization (RPO). Up-front consultation will ensure that key technical issues are addressed before you conduct your modeling.

2. *With the accepted protocol and compare the predicted visibility impacts with your threshold for "contribution."* You should calculate daily visibility values for each receptor as the change in deciviews compared against natural visibility conditions. You can use EPA's "Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule," EPA-454/B-03-005 (September 2003) in making this calculation. To determine whether a source may reasonably be anticipated to cause or contribute to visibility impairment at Class I area, you then compare the impacts predicted by the model against the threshold that you have selected.

⁹ *Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts*, U.S. Environmental Protection Agency, EPA-454/R-98-019, December 1998.

The emissions estimates used in the models are intended to reflect steady-state operating conditions during periods of high capacity utilization. We do not generally recommend that emissions reflecting periods of start-up, shutdown, and malfunction be used, as such emission rates could produce higher than normal effects than would be typical of most facilities. We recommend that States use the 24 hour average actual emission rate from the highest emitting day of the meteorological period modeled, unless this rate reflects periods start-up, shutdown, or malfunction. In addition, the monthly average relative humidity is used, rather than the daily average humidity—an approach that effectively lowers the peak values in daily model averages.

For these reasons, if you use the modeling approach we recommend, you should compare your “contribution” threshold against the 98th percentile of values. If the 98th percentile value from your modeling is less than your contribution threshold, then you may conclude that the source does not contribute to visibility impairment and is not subject to BART.

Option 2: Use of Model Plants To Exempt Individual Sources With Common Characteristics

Under this option, analyses of model plants could be used to exempt certain BART-eligible sources that share specific characteristics. It may be most useful to use this type of analysis to identify the types of small sources that do not cause or contribute to visibility impairment for purposes of BART, and thus should not be subject to a BART review. Different Class I areas may have different characteristics, however, so you should use care to ensure that the criteria you develop are appropriate for the applicable cases.

In carrying out this approach, you could use modeling analyses of representative plants to reflect groupings of specific sources with important common characteristics. Based on these analyses, you may find that certain types of sources are clearly anticipated to cause or contribute to visibility impairment. You could then choose to categorically require those types of sources to undergo a BART determination. Conversely, you may find based on representative plant analyses that certain types of sources are not reasonably anticipated to cause or contribute to visibility impairment. To do this, you may conduct your own modeling to establish emission levels and distances from Class I areas on which you can rely to exempt sources with those characteristics. For example, based on your modeling you might choose to exempt all NO_x-only sources that emit less than a certain amount per year and are located a certain distance from a Class I area. You could then choose to categorically exempt such sources from the BART determination process.

Our analyses of visibility impacts from model plants provide a useful example of the type of analyses that can be used to exempt categories of sources from BART.¹⁰ In our analyses, we developed model plants (EGUs and non-EGUs), with representative plume and stack characteristics, for use in considering the visibility impact from emission sources of different sizes and compositions at distances of 50, 100 and 200 kilometers from two hypothetical Class I areas (one in the East and one in the West). As the plume and stack characteristics of these model plants were developed considering the broad range of sources within the EGU and non-EGU categories, they do not necessarily represent any specific plant. However, the results of these analyses are instructive in the development of an exemption process for any Class I area.

In preparing our analyses, we have made a number of assumptions and exercised certain modeling choices; some of these have a tendency to lend conservatism to the results, overstating the likely effects, while others may understate the likely effects. On balance, when all of these factors are considered, we believe that our examples reflect realistic treatments of the situations being modeled. Based on our analyses, we believe that a State that has established 0.5 deciviews as a contribution threshold could reasonably exempt from the BART review process sources that emit less than 500 tons per year of NO_x or SO₂ (or combined NO_x and SO₂), as long as these sources are located more than 50 kilometers from any Class I area; and sources that emit less than 1000 tons per year of NO_x or SO₂ (or combined NO_x and SO₂) that are located more than 100 kilometers from any Class I area. You do, however, have the option of showing other thresholds might also be appropriate given your specific circumstances.

*Option 3: Cumulative Modeling To Show That
No Sources in a State Are Subject to BART*

You may also submit to EPA a demonstration based on an analysis of overall visibility impacts that emissions from BART-eligible sources in your State, considered together, are not reasonably anticipated to cause or contribute to any visibility impairment in a Class I area, and thus no source should be subject to BART. You may do this on a pollutant by pollutant basis or for all visibility-impairing pollutants to determine if emissions from these sources contribute to visibility impairment.

For example, emissions of SO₂ from your BART-eligible sources may clearly cause or contribute to visibility impairment while direct emissions of PM_{2.5} from these sources may not contribute to impairment. If you can make such a demonstration,

¹⁰ CALPUFF Analysis in Support of the June 2005 Changes to the Regional Haze Rule, U.S. Environmental Protection Agency, June 15, 2005, Docket No. OAR-2002-0076.

then you may reasonably conclude that none of your BART-eligible sources are subject to BART for a particular pollutant or pollutants. As noted above, your demonstration should take into account the interactions among pollutants and their resulting impacts on visibility before making any pollutant-specific determinations.

Analyses may be conducted using several alternative modeling approaches. First, you may use the CALPUFF or other appropriate model as described in Option 1 to evaluate the impacts of individual sources on downwind Class I areas, aggregating those impacts to determine the collective contribution of all BART-eligible sources to visibility impairment. You may also use a photochemical grid model. As a general matter, the larger the number of sources being modeled, the more appropriate it may be to use a photochemical grid model. However, because such models are significantly less sensitive than dispersion models to the contributions of one or a few sources, as well as to the interactions among sources that are widely distributed geographically, if you wish to use a grid model, you should consult with the appropriate EPA Regional Office to develop an appropriate modeling protocol.

IV. THE BART DETERMINATION: ANALYSIS OF BART OPTIONS

This section describes the process for the analysis of control options for sources subject to BART.

A. What factors must I address in the BART review?

The visibility regulations define BART as follows:

Best Available Retrofit Technology (BART) means an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by . . . [a BART-eligible source]. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

The BART analysis identifies the best system of continuous emission reduction taking into account:

- (1) The available retrofit control options,
- (2) Any pollution control equipment in use at the source (which affects the availability of options and their impacts),
- (3) The costs of compliance with control options,
- (4) The remaining useful life of the facility,

- (5) The energy and non-air quality environmental impacts of control options
- (6) The visibility impacts analysis.

B. What is the scope of the BART review?

Once you determine that a source is subject to BART for a particular pollutant, then for each affected emission unit, you must establish BART for that pollutant. The BART determination must address air pollution control measures for each emissions unit or pollutant emitting activity subject to review.

Example: Plant-wide emissions from emission units within the listed categories that began operation within the “time window” for BART ¹¹ are 300 tons/yr of NO_x, 200 tons/yr of SO₂, and 150 tons/yr of primary particulate. Emission unit A emits 200 tons/yr of NO_x, 100 tons/yr of SO₂, and 100 tons/yr of primary particulate. Other emission units, units B through H, which began operating in 1966, contribute lesser amounts of each pollutant. For this example, a BART review is required for NO_x, SO₂, and primary particulate, and control options must be analyzed for units B through H as well as unit A.

C. How does a BART review relate to Maximum Achievable Control Technology (MACT) Standards under CAA section 112, or to other emission limitations required under the CAA?

For VOC and PM sources subject to MACT standards, States may streamline the analysis by including a discussion of the MACT controls and whether any major new technologies have been developed subsequent to the MACT standards. We believe that there are many VOC and PM sources that are well controlled because they are regulated by the MACT standards, which EPA developed under CAA section 112. For a few MACT standards, this may also be true for SO₂. Any source subject to MACT standards must meet a level that is as stringent as the best-controlled 12 percent of sources in the industry. Examples of these hazardous air pollutant sources which effectively control VOC and PM emissions include (among others) secondary lead facilities, organic chemical plants subject to the hazardous organic NESHAP (HON), pharmaceutical production facilities, and equipment leaks and wastewater operations at petroleum refineries. We believe that, in many cases, it will be unlikely that States will identify emission controls more stringent than the MACT standards without identifying control options that would cost many thousands of dollars per ton. Unless there are new technologies subsequent to the MACT standards which

¹¹ That is, emission units that were in existence on August 7, 1977 and which began actual operation on or after August 7, 1962.

would lead to cost-effective increases in the level of control, you may rely on the MACT standards for purposes of BART.

We believe that the same rationale also holds true for emissions standards developed for municipal waste incinerators under CAA section 111(d), and for many NSR/PSD determinations and NSR/PSD settlement agreements. However, we do not believe that technology determinations from the 1970s or early 1980s, including new source performance standards (NSPS), should be considered to represent best control for existing sources, as best control levels for recent plant retrofits are more stringent than these older levels.

Where you are relying on these standards to represent a BART level of control, you should provide the public with a discussion of whether any new technologies have subsequently become available.

D. What Are the Five Basic Steps of a Case-by-Case BART Analysis?

The five steps are:

- STEP 1—Identify All ¹² Available Retrofit Control Technologies,
- STEP 2—Eliminate Technically Infeasible Options,
- STEP 3—Evaluate Control Effectiveness of Remaining Control Technologies,
- STEP 4—Evaluate Impacts and Document the Results, and
- STEP 5—Evaluate Visibility Impacts.

1. STEP 1: How do I identify all available retrofit emission control techniques?

1. Available retrofit control options are those air pollution control technologies with a practical potential for application to the emissions unit and the regulated pollutant under evaluation. Air pollution control technologies can include a wide variety of available methods, systems, and techniques for control of the affected pollutant. Technologies required as BACT or LAER are available for BART purposes and must be included as control alternatives. The control alternatives can include not only existing controls for the source category in question but also take into account technology transfer of controls that have been applied to similar source categories and

¹² In identifying “all” options, you must identify the most stringent option and a reasonable set of options for analysis that reflects a comprehensive list of available technologies. It is not necessary to list all permutations of available control levels that exist for a given technology—the list is complete if it includes the maximum level of control each technology is capable of achieving.

gas streams. Technologies which have not yet been applied to (or permitted for) full scale operations need not be considered as available; we do not expect the source owner to purchase or construct a process or control device that has not already been demonstrated in practice.

2. Where a NSPS exists for a source category (which is the case for most of the categories affected by BART), you should include a level of control equivalent to the NSPS as one of the control options.¹³ The NSPS standards are codified in 40 CFR part 60. We note that there are situations where NSPS standards do not require the most stringent level of available control for all sources within a category. For example, post-combustion NO_x controls (the most stringent controls for stationary gas turbines) are not required under subpart GG of the NSPS for Stationary Gas Turbines. However, such controls must still be considered available technologies for the BART selection process.

3. Potentially applicable retrofit control alternatives can be categorized in three ways.

- Pollution prevention: use of inherently lower-emitting processes/practices, including the use of control techniques (e.g., low-NO_x burners) and work practices that prevent emissions and result in lower “production-specific” emissions (note that it is not our intent to direct States to switch fuel forms, e.g., from coal to gas),

- Use of (and where already in place, improvement in the performance of) add-on controls, such as scrubbers, fabric filters, thermal oxidizers and other devices that control and reduce emissions after they are produced, and

- Combinations of inherently lower-emitting processes and add-on controls.

4. In the course of the BART review, one or more of the available control options may be eliminated from consideration because they are demonstrated to be technically infeasible or to have unacceptable energy, cost, or non-air quality environmental impacts on a case-by-case (or site-specific) basis. However, at the outset, you should initially identify all control options with potential application to the emissions unit under review.

¹³ In EPA’s 1980 BART guidelines for reasonably attributable visibility impairment, we concluded that NSPS standards generally, at that time, represented the best level sources could install as BART. In the 20 year period since this guidance was developed, there have been advances in SO₂ control technologies as well as technologies for the control of other pollutants, confirmed by a number of recent retrofits at Western power plants. Accordingly, EPA no longer concludes that the NSPS level of controls automatically represents “the best these sources can install.” Analysis of the BART factors could result in the selection of a NSPS level of control, but you should reach this conclusion only after considering the full range of control options.

5. We do not consider BART as a requirement to redesign the source when considering available control alternatives. For example, where the source subject to BART is a coal-fired electric generator, we do not require the BART analysis to consider building a natural gas-fired electric turbine although the turbine may be inherently less polluting on a per unit basis.

6. For emission units subject to a BART review, there will often be control measures or devices already in place. For such emission units, it is important to include control options that involve improvements to existing controls and not to limit the control options

only to those measures that involve a complete replacement of control devices.

Example: For a power plant with an existing wet scrubber, the current control efficiency is 66 percent. Part of the reason for the relatively low control efficiency is that 22 percent of the gas stream bypasses the scrubber. A BART review identifies options for improving the performance of the wet scrubber by redesigning the internal components of the scrubber and by eliminating or reducing the percentage of the gas stream that bypasses the scrubber. Four control options are identified: (1) 78 percent control based upon improved scrubber performance while maintaining the 22 percent bypass, (2) 83 percent control based upon improved scrubber performance while reducing the bypass to 15 percent, (3) 93 percent control based upon improving the scrubber performance while eliminating the bypass entirely, (this option results in a “wet stack” operation in which the gas leaving the stack is saturated with water) and (4) 93 percent as in option 3, with the addition of an indirect reheat system to reheat the stack gas above the saturation temperature. You must consider each of these four options in a BART analysis for this source.

7. You are expected to identify potentially applicable retrofit control technologies that

represent the full range of demonstrated alternatives. Examples of general information

sources to consider include:

- The EPA’s Clean Air Technology Center, which includes the RACT/BACT/LAER Clearinghouse (RBLC);

- State and Local Best Available Control Technology Guidelines—many agencies have online information—for example South Coast Air Quality Management District, Bay Area Air Quality Management District, and Texas Natural Resources Conservation Commission;

- Control technology vendors;

- Federal/State/Local NSR permits and associated inspection/performance test reports;

- Environmental consultants;

- Technical journals, reports and newsletters, air pollution control seminars; and

- The EPA’s NSR bulletin board—<http://www.epa.gov/ttn/nsr>;

- Department of Energy's Clean Coal Program— technical reports;
- The NO_x Control Technology "Cost Tool"—Clean Air Markets Division Web page—<http://www.epa.gov/airmarkets/arp/nox/controltech.html>;
- Performance of selective catalytic reduction on coal-fired steam generating units—final report. OAR/ARD, June 1997 (also available at <http://www.epa.gov/airmarkets/arp/nox/controltech.html>);
- Cost estimates for selected applications of NO_x control technologies on stationary combustion boilers. OAR/ARD June 1997. (Docket for NO_x SIP Call, A-96-56, item II-A-03);
- Investigation of performance and cost of NO_x controls as applied to group 2 boilers. OAR/ARD, August 1996. (Docket for Phase II NO_x rule, A-95-28, item IV-A-4);
- Controlling SO₂ Emissions: A Review of Technologies. EPA-600/R-00-093, USEPA/ORD/NRMRL, October 2000; and
- The OAQPS Control Cost Manual.

You are expected to compile appropriate information from these information sources.

8. There may be situations where a specific set of units within a fenceline constitutes the logical set to which controls would apply and that set of units may or may not all be BART-eligible. (For example, some units in that set may not have been constructed between 1962 and 1977.)

9. If you find that a BART source has controls already in place which are the most stringent controls available (note that this means that all possible improvements to any control devices have been made), then it is not necessary to comprehensively complete each following step of the BART analysis in this section. As long as these most stringent controls available are made federally enforceable for the purpose of implementing BART for that source, you may skip the remaining analyses in this section, including the visibility analysis in step 5. Likewise, if a source commits to a BART determination that consists of the most stringent controls available, then there is no need to complete the remaining analyses in this section.

2. STEP 2: How do I determine whether the options identified in Step 1 are technically feasible?

In Step 2, you evaluate the technical feasibility of the control options you identified in

Step 1. You should document a demonstration of technical infeasibility and should explain, based on physical, chemical, or engineering principles, why technical difficulties

would preclude the successful use of the control option on the emissions unit under review. You may then eliminate such technically infeasible control options from further consideration in the BART analysis.

In general, what do we mean by technical feasibility?

Control technologies are technically feasible if either (1) they have been installed and operated successfully for the type of source under review under similar conditions, or (2) the technology could be applied to the source under review. Two key concepts are important in determining whether a technology could be applied: "availability" and "applicability." As explained in more detail below, a technology is considered "available" if the source owner may obtain it through commercial channels, or it is otherwise available within the common sense meaning of the term. An available technology is "applicable" if it can reasonably be installed and operated on the source type under consideration. A technology that is available and applicable is technically feasible.

What do we mean by "available" technology?

1. The typical stages for bringing a control technology concept to reality as a commercial product are:

- Concept stage;
- Research and patenting;
- Bench scale or laboratory testing;
- Pilot scale testing;
- Licensing and commercial demonstration; and
- Commercial sales.

2. A control technique is considered available, within the context presented above, if it has reached the stage of licensing and commercial availability. Similarly, we do not expect a source owner to conduct extended trials to learn how to apply a technology on a totally new and dissimilar source type. Consequently, you would not consider technologies in the pilot scale testing stages of development as "available" for purposes of BART review.

3. Commercial availability by itself, however, is not necessarily a sufficient basis for concluding a technology to be applicable and therefore technically feasible. Technical feasibility, as determined in Step 2, also means a control option may reasonably be deployed on or "applicable" to the source type under consideration.

Because a new technology may become available at various points in time during the BART analysis process, we believe that guidelines are needed on when a

technology must be considered. For example, a technology may become available during the public comment period on the State's rule development process. Likewise, it is possible that new technologies may become available after the close of the State's public comment period and before submittal of the SIP to EPA, or during EPA's review process on the SIP submittal. In order to provide certainty in the process, all technologies should be considered if available before the close of the State's public comment period. You need not consider technologies that become available after this date. As part of your analysis, you should consider any technologies brought to your attention in public comments. If you disagree with public comments asserting that the technology is available, you should provide an explanation for the public record as to the basis for your conclusion.

What do we mean by "applicable"
technology?

You need to exercise technical judgment in determining whether a control alternative is applicable to the source type under consideration. In general, a commercially available control option will be presumed applicable if it has been used on the same or a similar source type. Absent a showing of this type, you evaluate technical feasibility by examining the physical and chemical characteristics of the pollutant-bearing gas stream, and comparing them to the gas stream characteristics of the source types to which the technology had been applied previously. Deployment of the control technology on a new or existing source with similar gas stream characteristics is generally a sufficient basis for concluding the technology is technically feasible barring a demonstration to the contrary as described below.

What type of demonstration is required if I conclude that an option is not technically feasible?

1. Where you conclude that a control option identified in Step 1 is technically infeasible, you should demonstrate that the option is either commercially unavailable, or that specific circumstances preclude its application to a particular emission unit. Generally, such a demonstration involves an evaluation of the characteristics of the pollutant-bearing gas stream and the capabilities of the technology. Alternatively, a demonstration of technical infeasibility may involve a showing that there are unresolvable technical difficulties with applying the control to the source (e.g., size of the unit, location of the proposed site, operating problems related to specific circumstances of the source, space constraints, reliability, and adverse side effects on the rest of the facility). Where the resolution of technical difficulties is merely a matter of increased cost, you should consider the technology to be technically feasible. The cost of a control alternative is considered later in the process.

2. The determination of technical feasibility is sometimes influenced by recent air quality permits. In some cases, an air quality permit may require a certain level of control, but the level of control in a permit is not expected to be achieved in practice (e.g., a source has received a permit but the project was canceled, or every operating source at that permitted level has been physically unable to achieve compliance with the limit). Where this is the case, you should provide supporting documentation showing why such limits are not technically feasible, and, therefore, why the level of control (but not necessarily the technology) may be eliminated from further consideration. However, if there is a permit requiring the application of a certain technology or emission limit to be achieved for such technology, this usually is sufficient justification for you to assume the technical feasibility of that technology or emission limit.

3. Physical modifications needed to resolve technical obstacles do not, in and of themselves, provide a justification for eliminating the control technique on the basis of technical infeasibility. However, you may consider the cost of such modifications in estimating costs. This, in turn, may form the basis for eliminating a control technology (see later discussion).

4. Vendor guarantees may provide an indication of commercial availability and the technical feasibility of a control technique and could contribute to a determination of technical feasibility or technical infeasibility, depending on circumstances. However, we do not consider a vendor guarantee alone to be sufficient justification that a control option will work. Conversely, lack of a vendor guarantee by itself does not present sufficient justification that a control option or an emissions limit is technically infeasible. Generally, you should make decisions about technical feasibility based on chemical, and engineering analyses (as discussed above), in conjunction with information about vendor guarantees.

5. A possible outcome of the BART procedures discussed in these guidelines is the evaluation of multiple control technology alternatives which result in essentially equivalent emissions. It is not our intent to encourage evaluation of unnecessarily large numbers of control alternatives for every emissions unit. Consequently, you should use judgment in deciding on those alternatives for which you will conduct the detailed impacts analysis (Step 4 below). For example, if two or more control techniques result in control levels that are essentially identical, considering the uncertainties of emissions factors and other parameters pertinent to estimating performance, you may evaluate only the less costly of these options. You should narrow the scope of the BART analysis in this way only if there is a negligible difference in emissions and energy and non-air quality environmental impacts between control alternatives.

3. STEP 3: How do I evaluate technically feasible alternatives?

Step 3 involves evaluating the control effectiveness of all the technically feasible control alternatives identified in Step 2 for the pollutant and emissions unit under review.

Two key issues in this process include:

(1) Making sure that you express the degree of control using a metric that ensures an “apples to apples” comparison of emissions performance levels among options, and

(2) Giving appropriate treatment and consideration of control techniques that can operate over a wide range of emission performance levels.

What are the appropriate metrics for comparison?

This issue is especially important when you compare inherently lower-polluting processes to one another or to add-on controls. In such cases, it is generally most effective to express emissions performance as an average steady state emissions level per unit of product produced or processed.

Examples of common metrics:

- Pounds of SO₂ emissions per million Btu heat input, and
- Pounds of NO_x emissions per ton of cement produced.

How do I evaluate control techniques with a wide range of emission performance levels?

1. Many control techniques, including both add-on controls and inherently lower polluting processes, can perform at a wide range of levels. Scrubbers and high and low efficiency electrostatic precipitators (ESPs) are two of the many examples of such control techniques that can perform at a wide range of levels. It is not our intent to require analysis of each possible level of efficiency for a control technique as such an analysis would result in a large number of options. It is important, however, that in analyzing the technology you take into account the most stringent emission control level that the technology is capable of achieving. You should consider recent regulatory decisions and performance data (e.g., manufacturer’s data, engineering estimates and the experience of other sources) when identifying an emissions performance level or levels to evaluate.

2. In assessing the capability of the control alternative, latitude exists to consider special circumstances pertinent to the specific source under review, or regarding the prior application of the control alternative. However, you should explain the basis for choosing the alternate level (or range) of control in the BART analysis. Without a showing of differences between the source and other sources that have achieved more

stringent emissions limits, you should conclude that the level being achieved by those other sources is representative of the achievable level for the source being analyzed.

3. You may encounter cases where you may wish to evaluate other levels of control in addition to the most stringent level for a given device. While you must consider the most stringent level as one of the control options, you may consider less stringent levels of control as additional options. This would be useful, particularly in cases where the selection of additional options would have widely varying costs and other impacts.

4. Finally, we note that for retrofitting existing sources in addressing BART, you should consider ways to improve the performance of existing control devices, particularly when a control device is not achieving the level of control that other similar sources are achieving in practice with the same device. For example, you should consider requiring those sources with electrostatic precipitators (ESPs) performing below currently achievable levels to improve their performance.

4. STEP 4: For a BART review, what impacts am I expected to calculate and report? What methods does EPA recommend for the impacts analysis?

After you identify the available and technically feasible control technology options, you are expected to conduct the following analyses when you make a BART determination:

Impact analysis part 1: Costs of compliance,

Impact analysis part 2: Energy impacts, and

Impact analysis part 3: Non-air quality environmental impacts.

Impact analysis part 4: Remaining useful life.

In this section, we describe how to conduct each of these three analyses. You are responsible for presenting an evaluation of each impact along with appropriate supporting information. You should discuss and, where possible, quantify both beneficial and adverse impacts. In general, the analysis should focus on the direct impact of the control alternative.

- a. Impact analysis part 1: how do I estimate the costs of control?

1. To conduct a cost analysis, you:

(1) Identify the emissions units being controlled,

(2) Identify design parameters for emission controls, and

(3) Develop cost estimates based upon those design parameters.

2. It is important to identify clearly the emission units being controlled, that is, to specify a well-defined area or process segment within the plant. In some cases, multiple emission units can be controlled jointly. However, in other cases, it may be

appropriate in the cost analysis to consider whether multiple units will be required to install separate and/or different control devices. The analysis should provide a clear summary list of equipment and the associated control costs. Inadequate documentation of the equipment whose emissions are being controlled is a potential cause for confusion in comparison of costs of the same controls applied to similar sources.

3. You then specify the control system design parameters. Potential sources of these design parameters include equipment vendors, background information documents used to support NSPS development, control technique guidelines documents, cost manuals developed by EPA, control data in trade publications, and engineering and performance test data. The following are a few examples of design parameters for two example control measures:

Control device	Examples of design parameters
Wet Scrubbers	Type of sorbent used (lime, limestone, etc.). Gas pressure drop. Liquid/gas ratio.
Selective Catalytic Reduction.	Ammonia to NO _x molar ratio. Pressure drop. Catalyst life.

4. The value selected for the design parameter should ensure that the control option will achieve the level of emission control being evaluated. You should include in your analysis documentation of your assumptions regarding design parameters. Examples of supporting references would include the EPA OAQPS *Control Cost Manual* (see below) and background information documents used for NSPS and hazardous pollutant emission standards. If the design parameters you specified differ from typical designs, you should document the difference by supplying performance test data for the control technology in question applied to the same source or a similar source.

5. Once the control technology alternatives and achievable emissions performance levels have been identified, you then develop estimates of capital and annual costs. The basis for equipment cost estimates also should be documented, either with data supplied by an equipment vendor (*i.e.*, budget estimates or bids) or by a referenced source (such as the *OAQPS Control Cost Manual*, Fifth Edition, February 1996, EPA 453/B-96-001).¹⁴ In order to maintain and improve consistency, cost estimates

¹⁴ The *OAQPS Control Cost Manual* is updated periodically. While this citation refers to the latest version at the time this guidance was written, you should use the

should be based on the *OAQPS Control Cost Manual*, where possible.¹⁵ The *Control Cost Manual* addresses most control technologies in sufficient detail for a BART analysis. The cost analysis should also take into account any site-specific design or other conditions identified above that affect the cost of a particular BART technology option.

b. What do we mean by cost effectiveness?

Cost effectiveness, in general, is a criterion used to assess the potential for achieving an objective in the most economical way. For purposes of air pollutant analysis, “effectiveness” is measured in terms of tons of pollutant emissions removed, and “cost” is measured in terms of annualized control costs. We recommend two types of cost-effectiveness calculations—average cost effectiveness, and incremental cost effectiveness.

c. How do I calculate average cost effectiveness?

Average cost effectiveness means the total annualized costs of control divided by annual emissions reductions (the difference between baseline annual emissions and the estimate of emissions after controls), using the following formula:

$$\text{Average cost effectiveness (dollars per ton removed)} = \frac{\text{Control option annualized cost}}{\text{Baseline annual emissions—Annual emissions with Control option}}^{16}$$

Baseline annual emissions—Annual emissions
with Control option

version that is current as of when you conduct your impact analysis. This document is available at the following Web site: <http://www.epa.gov/ttn/catc/dir1/cs1ch2.pdf>.

¹⁵ You should include documentation for any additional information you used for the cost calculations, including any information supplied by vendors that affects your assumptions regarding purchased equipment costs, equipment life, replacement of major components, and any other element of the calculation that differs from the *Control Cost Manual*.

¹⁶ Whenever you calculate or report annual costs, you should indicate the year for which the costs are estimated. For example, if you use the year 2000 as the basis for cost comparisons, you would report that an annualized cost of \$20 million would be: \$20 million (year 2000 dollars).

Because you calculate costs in (annualized) dollars per year (\$/yr) and because you calculate emissions rates in tons per year (tons/ yr), the result is an average cost-effectiveness number in (annualized) dollars per ton (\$/ton) of pollutant removed.

d. How do I calculate baseline emissions?

1. The baseline emissions rate should represent a realistic depiction of anticipated annual emissions for the source. In general, for the existing sources subject to BART, you will estimate the anticipated annual emissions based upon actual emissions from a baseline period.

2. When you project that future operating parameters (e.g., limited hours of operation or capacity utilization, type of fuel, raw materials or product mix or type) will differ from past practice, and if this projection has a deciding effect in the BART determination, then you must make these parameters or assumptions into enforceable limitations. In the absence of enforceable limitations, you calculate baseline emissions based upon continuation of past practice.

3. For example, the baseline emissions calculation for an emergency standby generator may consider the fact that the source owner would not operate more than past practice of 2 weeks a year. On the other hand, baseline emissions associated with a base-loaded turbine should be based on its past practice which would indicate a large number of hours of operation. This produces a significantly higher level of baseline emissions than in the case of the emergency/standby unit and results in more cost-effective controls. As a consequence of the dissimilar baseline emissions, BART for the two cases could be very different.

e. How do I calculate incremental cost effectiveness?

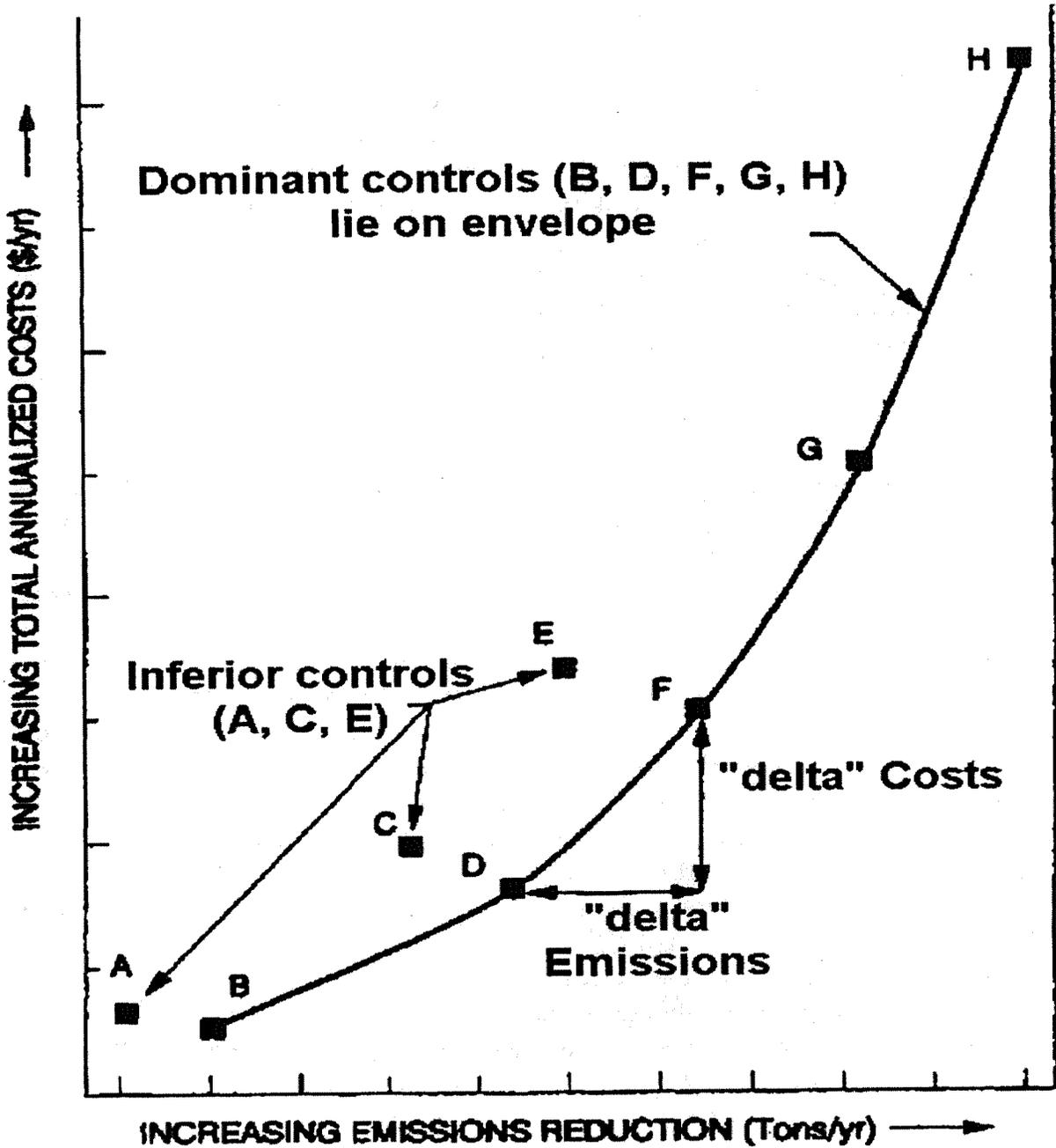
1. In addition to the average cost effectiveness of a control option, you should also calculate incremental cost effectiveness. You should consider the incremental cost effectiveness in combination with the average cost effectiveness when considering whether to eliminate a control option. The incremental cost effectiveness calculation compares the costs and performance level of a control option to those of the next most stringent option, as shown in the following formula (with respect to cost per emissions reduction):

Incremental Cost Effectiveness (dollars per incremental ton removed) = (Total annualized costs of control option) - (Total annualized costs of next control option) ÷ (Control option annual emissions) - (Next control option annual emissions)

Example 1: Assume that Option F on Figure 2 has total annualized costs of \$1 million to reduce 2000 tons of a pollutant, and that Option D on Figure 2 has total annualized costs of \$500,000 to reduce 1000 tons of the same pollutant. The incremental cost effectiveness of Option F relative to Option D is $(\$1 \text{ million} - \$500,000)$ divided by $(2000 \text{ tons} - 1000 \text{ tons})$, or $\$500,000$ divided by 1000 tons, which is $\$500/\text{ton}$.

Example 2: Assume that two control options exist: Option 1 and Option 2. Option 1 achieves a 1,000 ton/yr reduction at an annualized cost of \$1,900,000. This represents an average cost of $(\$1,900,000/1,000 \text{ tons}) = \$1,900/\text{ton}$. Option 2 achieves a 980 tons/yr reduction at an annualized cost of \$1,500,000. This represents an average cost of $(\$1,500,000/980 \text{ tons}) = \$1,531/\text{ton}$. The incremental cost effectiveness of Option 1 relative to Option 2 is $(\$1,900,000 - \$1,500,000)$ divided by $(1,000 \text{ tons} - 980 \text{ tons})$. The adoption of Option 1 instead of Option 2 results in an incremental emission reduction of 20 tons per year at an additional cost of \$400,000 per year. The incremental cost of Option 1, then, is \$20,000 per ton - 11 times the average cost of \$1,900 per ton. While \$1,900 per ton may still be deemed reasonable, it is useful to consider both the average and incremental cost in making an overall cost-effectiveness finding. Of course, there may be other differences between these options, such as, energy or water use, or non-air environmental effects, which also should be considered in selecting a BART technology.

2. You should exercise care in deriving incremental costs of candidate control options. Incremental cost-effectiveness comparisons should focus on annualized cost and emission reduction differences between “dominant” alternatives. To identify dominant alternatives, you generate a graphical plot of total annualized costs for total emissions reductions for all control alternatives identified in the BART analysis, and by identifying a “least-cost envelope” as shown in Figure 2. (A “least-cost envelope” represents the set of options that should be dominant in the choice of a specific option.)



Example: Eight technically feasible control options for analysis are listed. These are represented as A through H in Figure 2. The dominant set of control options, B, D, F, G, and H, represent the least-cost envelope, as we depict by the cost curve connecting them. Points A, C and E are inferior options, and you should not use them in calculating incremental cost effectiveness. Points A, C and E represent inferior controls because B will buy more emissions reductions for less money than A; and similarly, D and F will buy more reductions for less money than C and E, respectively.

3. In calculating incremental costs, you:

- (1) Array the control options in ascending order of annualized total costs,
- (2) Develop a graph of the most reasonable smooth curve of the control options, as shown in Figure 2. This is to show the “least-cost envelope” discussed above; and
- (3) Calculate the incremental cost effectiveness for each dominant option, which is the difference in total annual costs between that option and the next most stringent option, divided by the difference in emissions, after controls have been applied, between those two control options. For example, using Figure 2, you would calculate incremental cost effectiveness for the difference between options B and D, options D and F, options F and G, and options G and H.

4. A comparison of incremental costs can also be useful in evaluating the viability of a specific control option over a range of efficiencies. For example, depending on the capital and operational cost of a control device, total and incremental cost may vary significantly (either increasing or decreasing) over the operational range of a control device. Also, the greater the number of possible control options that exist, the more weight should be given to the incremental costs vs. average costs. It should be noted that average and incremental cost effectiveness are identical when only one candidate control option is known to exist.

5. You should exercise caution not to misuse these techniques. For example, you may be faced with a choice between two available control devices at a source, control A and control B, where control B achieves slightly greater emission reductions. The average cost (total annual cost/total annual emission reductions) for each may be deemed to be reasonable. However, the incremental cost ($\text{total annual cost}_A - \text{total annual cost}_B / \text{total annual emission reductions}_A - \text{total annual emission reductions}_B$) of the additional emission reductions to be achieved by control B may be very great. In such an instance, it may be inappropriate to choose control B, based on its high incremental costs, even though its average cost may be considered reasonable.

6. In addition, when you evaluate the average or incremental cost effectiveness of a control alternative, you should make reasonable and supportable assumptions regarding control efficiencies. An unrealistically low assessment of the emission reduction potential of a certain technology could result in inflated cost-effectiveness figures.

f. What other information should I provide in the cost impacts analysis?

You should provide documentation of any unusual circumstances that exist for the source that would lead to cost-effectiveness estimates that would exceed that for recent retrofits. This is especially important in cases where recent retrofits have cost-effectiveness values that are within what has been considered a reasonable range, but your analysis concludes that costs for the source being analyzed are not considered

reasonable. (A reasonable range would be a range that is consistent with the range of cost effectiveness values used in other similar permit decisions over a period of time.)

Example: In an arid region, large amounts of water are needed for a scrubbing system. Acquiring water from a distant location could greatly increase the cost per ton of emissions reduced of wet scrubbing as a control option.

g. What other things are important to consider in the cost impacts analysis?

In the cost analysis, you should take care not to focus on incomplete results or partial calculations. For example, large capital costs for a control option alone would not preclude selection of a control measure if large emissions reductions are projected. In such a case, low or reasonable cost effectiveness numbers may validate the option as an appropriate BART alternative irrespective of the large capital costs. Similarly, projects with relatively low capital costs may not be cost effective if there are few emissions reduced.

h. Impact analysis part 2: How should I analyze and report energy impacts?

1. You should examine the energy requirements of the control technology and determine whether the use of that technology results in energy penalties or benefits. A source owner may, for example, benefit from the combustion of a concentrated gas stream rich in volatile organic compounds; on the other hand, more often extra fuel or electricity is required to power a control device or incinerate a dilute gas stream. If such benefits or penalties exist, they should be quantified to the extent practicable. Because energy penalties or benefits can usually be quantified in terms of additional cost or income to the source, the energy impacts analysis can, in most cases, simply be factored into the cost impacts analysis. The fact of energy use in and of itself does not disqualify a technology.

2. Your energy impact analysis should consider only direct energy consumption and not indirect energy impacts. For example, you could estimate the direct energy impacts of the control alternative in units of energy consumption at the source (e.g., BTU, kWh, barrels of oil, tons of coal). The energy requirements of the control options should be shown in terms of total (and in certain cases, also incremental) energy costs per ton of pollutant removed. You can then convert these units into dollar costs and, where appropriate, factor these costs into the control cost analysis.

3. You generally do not consider indirect energy impacts (such as energy to produce raw materials for construction of control equipment). However, if you determine, either independently or based on a showing by the source owner, that the indirect

energy impact is unusual or significant and that the impact can be well quantified, you may consider the indirect impact.

4. The energy impact analysis may also address concerns over the use of locally scarce fuels. The designation of a scarce fuel may vary from region to region. However, in general, a scarce fuel is one which is in short supply locally and can be better used for alternative purposes, or one which may not be reasonably available to the source either at the present time or in the near future.

5. Finally, the energy impacts analysis may consider whether there are relative differences between alternatives regarding the use of locally or regionally available coal, and whether a given alternative would result in significant economic disruption or unemployment. For example, where two options are equally cost effective and achieve equivalent or similar emissions reductions, one option may be preferred if the other alternative results in significant disruption or unemployment.

i. Impact analysis part 3: How do I analyze
“non-air quality environmental impacts?”

1. In the non-air quality related environmental impacts portion of the BART analysis, you address environmental impacts other than air quality due to emissions of the pollutant in question. Such environmental impacts include solid or hazardous waste generation and discharges of polluted water from a control device.

2. You should identify any significant or unusual environmental impacts associated with a control alternative that have the potential to affect the selection or elimination of a control alternative. Some control technologies may have potentially significant secondary environmental impacts. Scrubber effluent, for example, may affect water quality and land use. Alternatively, water availability may affect the feasibility and costs of wet scrubbers. Other examples of secondary environmental impacts could include hazardous waste discharges, such as spent catalysts or contaminated carbon. Generally, these types of environmental concerns become important when sensitive site-specific receptors exist or when the incremental emissions reductions potential of the more stringent control is only marginally greater than the next most-effective option. However, the fact that a control device creates liquid and solid waste that must be disposed of does not necessarily argue against selection of that technology as BART, particularly if the control device has been applied to similar facilities elsewhere and the solid or liquid waste is similar to those other applications. On the other hand, where you or the source owner can show that unusual circumstances at the proposed facility create greater problems than experienced elsewhere, this may provide a basis for the elimination of that control alternative as BART.

3. The procedure for conducting an analysis of non-air quality environmental impacts should be made based on a consideration of site-specific circumstances. If you propose to adopt the most stringent alternative, then it is not necessary to

perform this analysis of environmental impacts for the entire list of technologies you ranked in Step 3. In general, the analysis need only address those control alternatives with any significant or unusual environmental impacts that have the potential to affect the selection of a control alternative, or elimination of a more stringent control alternative. Thus, any important relative environmental impacts (both positive and negative) of alternatives can be compared with each other.

4. In general, the analysis of impacts starts with the identification and quantification of the solid, liquid, and gaseous discharges from the control device or devices under review. Initially, you should perform a qualitative or semi-quantitative screening to narrow the analysis to discharges with potential for causing adverse environmental effects. Next, you should assess the mass and composition of any such discharges and quantify them to the extent possible, based on readily available information. You should also assemble pertinent information about the public or environmental consequences of releasing these materials.

j. Impact analysis part 4: What are examples of non-air quality environmental impacts?

The following are examples of how to conduct non-air quality environmental impacts:

(1) *Water Impact*

You should identify the relative quantities of water used and water pollutants produced and discharged as a result of the use of each alternative emission control system. Where possible, you should assess the effect on ground water and such local surface water quality parameters as ph, turbidity, dissolved oxygen, salinity, toxic chemical levels, temperature, and any other important considerations. The analysis could consider whether applicable water quality standards will be met and the availability and effectiveness of various techniques to reduce potential adverse effects.

(2) *Solid Waste Disposal Impact*

You could also compare the quality and quantity of solid waste (e.g., sludges, solids) that must be stored and disposed of or recycled as a result of the application of each alternative emission control system. You should consider the composition and various other characteristics of the solid waste (such as permeability, water retention, rewatering of dried material, compression strength, leachability of dissolved ions, bulk density, ability to support vegetation growth and hazardous characteristics) which are significant with regard to potential surface water pollution or transport into and contamination of subsurface waters or aquifers.

(3) *Irreversible or Irretrievable Commitment of Resources*

You may consider the extent to which the alternative emission control systems may involve a trade-off between short-term environmental gains at the expense of long-term environmental losses and the extent to which the alternative systems may result

in irreversible or irretrievable commitment of resources (for example, use of scarce water resources).

(4) *Other Adverse Environmental Impacts*

You may consider significant differences in noise levels, radiant heat, or dissipated static electrical energy of pollution control alternatives. Other examples of non-air quality environmental impacts would include hazardous waste discharges such as spent catalysts or contaminated carbon.

k. How do I take into account a project's "remaining useful life" in calculating control costs?

1. You may decide to treat the requirement to consider the source's "remaining useful life" of the source for BART determinations as one element of the overall cost analysis. The "remaining useful life" of a source, if it represents a relatively short time period, may affect the annualized costs of retrofit controls. For example, the methods for calculating annualized costs in EPA's *OAQPS Control Cost Manual* require the use of a specified time period for amortization that varies based upon the type of control. If the remaining useful life will clearly exceed this time period, the remaining useful life has essentially no effect on control costs and on the BART determination process. Where the remaining useful life is less than the time period for amortizing costs, you should use this shorter time period in your cost calculations.

2. For purposes of these guidelines, the remaining useful life is the difference between:

(1) The date that controls will be put in place (capital and other construction costs incurred before controls are put in place can be rolled into the first year, as suggested in EPA's *OAQPS Control Cost Manual*); you are conducting the BART analysis; and

(2) The date the facility permanently stops operations. Where this affects the BART determination, this date should be assured by a federally- or State-enforceable restriction preventing further operation.

3. We recognize that there may be situations where a source operator intends to shut down a source by a given date, but wishes to retain the flexibility to continue operating beyond that date in the event, for example, that market conditions change. Where this is the case, your BART analysis may account for this, but it must maintain consistency with the statutory requirement to install BART within 5 years. Where the source chooses not to accept a federally enforceable condition requiring the source to shut down by a given date, it is necessary to determine whether a reduced time period for the remaining useful life changes the level of controls that would have been required as BART.

If the reduced time period does change the level of BART controls, you may identify, and include as part of the BART emission limitation, the more stringent level

of control that would be required as BART if there were no assumption that reduced the remaining useful life. You may incorporate into the BART emission limit this more stringent level, which would serve as a contingency should the source continue operating more than 5 years after the date EPA approves the relevant SIP. The source would not be allowed to operate after the 5-year mark without such controls. If a source does operate after the 5-year mark without BART in place, the source is considered to be in violation of the BART emissions limit for each day of operation.

5. Step 5: How should I determine visibility impacts in the BART determination?

The following is an approach you may use to determine visibility impacts (the degree of visibility improvement for each source subject to BART) for the BART determination. Once you have determined that your source or sources are subject to BART, you must conduct a visibility improvement determination for the source(s) as part of the BART determination. When making this determination, we believe you have flexibility in setting absolute thresholds, target levels of improvement, or *de minimis* levels since the deciview improvement must be weighed among the five factors, and you are free to determine the weight and significance to be assigned to each factor. For example, a 0.3 deciview improvement may merit a stronger weighting in one case versus another, so one "bright line" may not be appropriate. [Note that if sources have elected to apply the most stringent controls available, consistent with the discussion in section E. step 1. below, you need not conduct, or require the source to conduct, an air quality modeling analysis for the purpose of determining its visibility impacts.]

Use CALPUFF,¹⁷ or other appropriate dispersion model to determine the visibility improvement expected at a Class I area from the potential BART control technology applied to the source. Modeling should be conducted for SO₂, NO_x, and direct PM emissions (PM_{2.5} and/or PM₁₀). If the source is making the visibility determination, you should review and approve or disapprove of the source's analysis before making the expected improvement determination. There are several steps for determining the visibility impacts from an individual source using a dispersion model:

- Develop a modeling protocol.

Some critical items to include in a modeling protocol are meteorological and terrain data, as well as source-specific information (stack height, temperature, exit velocity, elevation, and allowable and actual emission rates of applicable pollutants), and receptor data from appropriate Class I areas. We recommend following EPA's

¹⁷ The model code and its documentation are available at no cost for download from <http://www.epa.gov/scram001/tt22.htm#calpuff>.

*Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts*¹⁸ for parameter settings and meteorological data inputs; the use of other settings from those in IWAQM should be identified and explained in the protocol.

One important element of the protocol is in establishing the receptors that will be used in the model. The receptors that you use should be located in the nearest Class I area with sufficient density to identify the likely visibility effects of the source. For other Class I areas in relatively close proximity to a BART-eligible source, you may model a few strategic receptors to determine whether effects at those areas may be greater than at the nearest Class I area. For example, you might chose to locate receptors at these areas at the closest point to the source, at the highest and lowest elevation in the Class I area, at the IMPROVE monitor, and at the approximate expected plume release height. If the highest modeled effects are observed at the nearest Class I area, you may choose not to analyze the other Class I areas any further as additional analyses might be unwarranted.

You should bear in mind that some receptors within the relevant Class I area may be less than 50 km from the source while other receptors within that same Class I area may be greater than 50 km from the same source. As indicated by the *Guideline on Air Quality Models*, this situation may call for the use of two different modeling approaches for the same Class I area and source, depending upon the State's chosen method for modeling sources less than 50 km. In situations where you are assessing visibility impacts for source-receptor distances less than 50 km, you should use expert modeling judgment in determining visibility impacts, giving consideration to both CALPUFF and other EPA-approved methods.

In developing your modeling protocol, you may want to consult with EPA and your regional planning organization (RPO). Up-front consultation will ensure that key technical issues are addressed before you conduct your modeling.

- For each source, run the model, at pre-control and post-control emission rates according to the accepted methodology in the protocol.

Use the 24-hour average actual emission rate from the highest emitting day of the meteorological period modeled (for the pre-control scenario). Calculate the model results for each receptor as the change in deciviews compared against natural visibility conditions. Post-control emission rates are calculated as a percentage of pre-control emission rates. For example, if the 24-hr pre-control emission rate is 100 lb/hr of SO₂, then the post control rate is 5 lb/hr if the control efficiency being evaluated is 95 percent.

¹⁸ *Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts*, U.S. Environmental Protection Agency, EPA-454/R-98-019, December 1998.

- Make the net visibility improvement determination.

Assess the visibility improvement based on the modeled change in visibility impacts for the pre-control and post-control emission scenarios. You have flexibility to assess visibility improvements due to BART controls by one or more methods. You may consider the frequency, magnitude, and duration components of impairment. Suggestions for making the determination are:

- Use of a comparison threshold, as is done for determining if BART-eligible sources should be subject to a BART determination. Comparison thresholds can be used in a number of ways in evaluating visibility improvement (e.g., the number of days or hours that the threshold was exceeded, a single threshold for determining whether a change in impacts is significant, or a threshold representing an x percent change in improvement).

- Compare the 98th percent days for the pre- and post-control runs.

Note that each of the modeling options may be supplemented with source apportionment data or source apportionment modeling.

E. How do I select the "best" alternative, using the results of Steps 1 through 5?

1. Summary of the Impacts Analysis

From the alternatives you evaluated in Step 3, we recommend you develop a chart (or charts) displaying for each of the alternatives:

- (1) Expected emission rate (tons per year, pounds per hour);
- (2) Emissions performance level (e.g., percent pollutant removed, emissions per unit product, lb/MMBtu, ppm);
- (3) Expected emissions reductions (tons per year);
- (4) Costs of compliance—total annualized costs (\$), cost effectiveness (\$/ton), and incremental cost effectiveness (\$/ton), and/or any other cost-effectiveness measures (such as \$/deciview);
- (5) Energy impacts;
- (6) Non-air quality environmental impacts;
- and
- (7) Modeled visibility impacts.

2. Selecting a "best" alternative

1. You have discretion to determine the order in which you should evaluate control options for BART. Whatever the order in which you choose to evaluate options, you should always (1) display the options evaluated; (2) identify the average and incremental costs of each option; (3) consider the energy and non-air quality

environmental impacts of each option; (4) consider the remaining useful life; and (5) consider the modeled visibility impacts. You should provide a justification for adopting the technology that you select as the “best” level of control, including an explanation of the CAA factors that led you to choose that option over other control levels.

2. In the case where you are conducting a BART determination for two regulated pollutants on the same source, if the result is two different BART technologies that do not work well together, you could then substitute a different technology or combination of technologies.

3. In selecting a “best” alternative, should I consider the affordability of controls?

1. Even if the control technology is cost effective, there may be cases where the installation of controls would affect the viability of continued plant operations.

2. There may be unusual circumstances that justify taking into consideration the conditions of the plant and the economic effects of requiring the use of a given control technology. These effects would include effects on product prices, the market share, and profitability of the source. Where there are such unusual circumstances that are judged to affect plant operations, you may take into consideration the conditions of the plant and the economic effects of requiring the use of a control technology. Where these effects are judged to have a severe impact on plant operations you may consider them in the selection process, but you may wish to provide an economic analysis that demonstrates, in sufficient detail for public review, the specific economic effects, parameters, and reasoning. (We recognize that this review process must preserve the confidentiality of sensitive business information). Any analysis may also consider whether other competing plants in the same industry have been required to install BART controls if this information is available.

4. Sulfur dioxide limits for utility boilers

You must require 750 MW power plants to meet specific control levels for SO₂ of either 95 percent control or 0.15 lbs/MMBtu, for each EGU greater than 200 MW that is currently uncontrolled unless you determine that an alternative control level is justified based on a careful consideration of the statutory factors. Thus, for example, if the source demonstrates circumstances affecting its ability to cost-effectively reduce its emissions, you should take that into account in determining whether the presumptive levels of control are appropriate for that facility. For a currently uncontrolled EGU greater than 200 MW in size, but located at a power plant smaller than 750 MW in size, such controls are generally cost-effective and could be used in your BART determination considering the five factors specified in CAA section

169A(g)(2). While these levels may represent current control capabilities, we expect that scrubber technology will continue to improve and control costs continue to decline. You should be sure to consider the level of control that is currently best achievable at the time that you are conducting your BART analysis.

For coal-fired EGUs with existing post-combustion SO₂ controls achieving less than 50 percent removal efficiencies, we recommend that you evaluate constructing a new FGD system to meet the same emission limits as above (95 percent removal or 0.15 lb/mmBtu), in addition to the evaluation of scrubber upgrades discussed below. For oil-fired units, regardless of size, you should evaluate limiting the sulfur content of the fuel oil burned to 1 percent or less by weight.

For those BART-eligible EGUs with pre-existing post-combustion SO₂ controls achieving removal efficiencies of at least 50 percent, your BART determination should consider cost effective scrubber upgrades designed to improve the system's overall SO₂ removal efficiency. There are numerous scrubber enhancements available to upgrade the average removal efficiencies of all types of existing scrubber systems. We recommend that as you evaluate the definition of "upgrade," you evaluate options that not only improve the design removal efficiency of the scrubber vessel itself, but also consider upgrades that can improve the overall SO₂ removal efficiency of the scrubber system. Increasing a scrubber system's reliability, and conversely decreasing its downtime, by way of optimizing operation procedures, improving maintenance practices, adjusting scrubber chemistry, and increasing auxiliary equipment redundancy, are all ways to improve average SO₂ removal efficiencies.

We recommend that as you evaluate the performance of existing wet scrubber systems, you consider some of the following upgrades, in no particular order, as potential scrubber upgrades that have been proven in the industry as cost effective means to increase overall SO₂ removal of wet systems:

- (a) Elimination of Bypass Reheat;
- (b) Installation of Liquid Distribution Rings;
- (c) Installation of Perforated Trays;
- (d) Use of Organic Acid Additives;
- (e) Improve or Upgrade Scrubber Auxiliary System Equipment;
- (f) Redesign Spray Header or Nozzle Configuration.

We recommend that as you evaluate upgrade options for dry scrubber systems, you should consider the following cost effective upgrades, in no particular order:

- (a) Use of Performance Additives;
- (b) Use of more Reactive Sorbent;
- (c) Increase the Pulverization Level of Sorbent;
- (d) Engineering redesign of atomizer or slurry injection system.

You should evaluate scrubber upgrade options based on the 5 step BART analysis process.

5. Nitrogen oxide limits for utility boilers

You should establish specific numerical limits for NO_x control for each BART determination. For power plants with a generating capacity in excess of 750 MW currently using selective catalytic reduction (SCR) or selective non-catalytic reduction (SNCR) for part of the year, you should presume that use of those same controls year-round is BART. For other sources currently using SCR or SNCR to reduce NO_x emissions during part of the year, you should carefully consider requiring the use of these controls year-round as the additional costs of operating the equipment throughout the year would be relatively modest.

For coal-fired EGUs greater than 200 MW located at greater than 750 MW power plants and operating without post-combustion controls (*i.e.* SCR or SNCR), we have provided presumptive NO_x limits, differentiated by boiler design and type of coal burned. You may determine that an alternative control level is appropriate based on a careful consideration of the statutory factors. For coal-fired EGUs greater than 200 MW located at power plants 750 MW or less in size and operating without post-combustion controls, you should likewise presume that these same levels are cost-effective. You should require such utility boilers to meet the following NO_x emission limits, unless you determine that an alternative control level is justified based on consideration of the statutory factors. The following NO_x emission rates were determined based on a number of assumptions, including that the EGU boiler has enough volume to allow for installation and effective operation of separated overfire air ports. For boilers where these assumptions are incorrect, these emission limits may not be cost-effective.

TABLE 1—PRESUMPTIVE NO_x EMISSION LIMITS FOR BART-ELIGIBLE COAL-FIRED UNITS.¹⁹

Unit type	Coal type	NO _x presumptive limit (lb/mmbtu) ²⁰
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¹⁹ No Cell burners, dry-turbo-fired units, nor wet-bottom tangential-fired units burning lignite were identified as BART-eligible, thus no presumptive limit was determined. Similarly, no wet-bottom tangential-fired units burning sub-bituminous were identified as BART-eligible.

²⁰ These limits reflect the design and technological assumptions discussed in the technical support document for NO_x limits for these guidelines. See *Technical Support Document for BART NO_x Limits for Electric Generating Units and Technical Support*

Dry-bottom wall-fire.....	Bituminous.....	0.39
	Sub-bituminous.....	0.23
	Lignite.....	0.29
Tangential-fired.....	Bituminous.....	0.28
	Sub-bituminous.....	0.15
	Lignite.....	0.17
Cell Burners.....	Bituminous.....	0.40
	Sub-bituminous.....	0.45
	Bituminous.....	0.32
Dry-turbo-fired.....	Sub-bituminous.....	0.23
	Bituminous.....	0.62
Wet-bottom tangential-fired.....		

Most EGUs can meet these presumptive NO_x limits through the use of current combustion control technology, *i.e.* the careful control of combustion air and low-NO_x burners. For units that cannot meet these limits using such technologies, you should consider whether advanced combustion control technologies such as rotating opposed fire air should be used to meet these limits.

Because of the relatively high NO_x emission rates of cyclone units, SCR is more cost-effective than the use of current combustion control technology for these units. The use of SCRs at cyclone units burning bituminous coal, sub-bituminous coal, and lignite should enable the units to cost-effectively meet NO_x rates of 0.10 lbs/mmBtu. As a result, we are establishing a presumptive NO_x limit of 0.10 lbs/mmBtu based on the use of SCR for coal-fired cyclone units greater than 200 MW located at 750 MW power plants. As with the other presumptive limits established in this guideline, you may determine that an alternative level of control is appropriate based on your consideration of the relevant statutory factors. For other cyclone units, you should review the use of SCR and consider whether these post-combustion controls should be required as BART.

For oil-fired and gas-fired EGUs larger than 200MW, we believe that installation of current combustion control technology to control NO_x is generally highly cost-effective and should be considered in your determination of BART for these sources.

Document for BART NO_x Limits for Electric Generating Units Excel Spreadsheet, Memorandum to Docket OAR 2002-0076, April 15, 2005.

Many such units can make significant reductions in NO_x emissions which are highly cost-effective through the application of current combustion control technology.²¹

V. ENFORCEABLE LIMITS/COMPLIANCE DATE

To complete the BART process, you must establish enforceable emission limits that reflect the BART requirements and require compliance within a given period of time. In particular, you must establish an enforceable emission limit for each subject emission unit at the source and for each pollutant subject to review that is emitted from the source. In addition, you must require compliance with the BART emission limitations no later than 5 years after EPA approves your regional haze SIP. If technological or economic limitations in the application of a measurement methodology to a particular emission unit make a conventional emissions limit infeasible, you may instead prescribe a design, equipment, work practice, operation standard, or combination of these types of standards. You should consider allowing sources to “average” emissions across any set of BART-eligible emission units within a fenceline, so long as the emission reductions from each pollutant being controlled for BART would be equal to those reductions that would be obtained by simply controlling each of the BART-eligible units that constitute BART-eligible source.

You should ensure that any BART requirements are written in a way that clearly specifies the individual emission unit(s) subject to BART regulation. Because the BART requirements themselves are “applicable” requirements of the CAA, they must be included as title V permit conditions according to the procedures established in 40 CFR part 70 or 40 CFR part 71.

Section 302(k) of the CAA requires emissions limits such as BART to be met on a continuous basis. Although this provision does not necessarily require the use of continuous emissions monitoring (CEMs), it is important that sources employ techniques that ensure compliance on a continuous basis. Monitoring requirements generally applicable to sources, including those that are subject to BART, are governed by other regulations. See, e.g., 40 CFR part 64 (compliance assurance monitoring); 40 CFR 70.6(a)(3) (periodic monitoring); 40 CFR 70.6(c)(1) (sufficiency monitoring). Note also that while we do not believe that CEMs would necessarily be required for all BART sources, the vast majority of electric generating units potentially subject to BART already employ CEM technology for other programs, such as the acid rain program. In addition, emissions limits must be enforceable as a practical

²¹ See *Technical Support Document for BART NO_x Limits for Electric Generating Units* and *Technical Support Document for BART NO_x Limits for Electric Generating Units Excel Spreadsheet*, Memorandum to Docket OAR 2002–0076, April 15, 2005.

matter (contain appropriate averaging times, compliance verification procedures and recordkeeping requirements). In light of the above, the permit must:

- Be sufficient to show compliance or noncompliance (*i.e.*, through monitoring times of operation, fuel input, or other indices of operating conditions and practices); and

- Specify a reasonable averaging time consistent with established reference methods, contain reference methods for determining compliance, and provide for adequate reporting and recordkeeping so that air quality agency personnel can determine the compliance status of the source; and

- For EGUS, specify an averaging time of a 30-day rolling average, and contain a definition of “boiler operating day” that is consistent with the definition in the proposed revisions to the NSPS for utility boilers in 40 CFR Part 60, subpart Da.²² You should consider a boiler operating day to be any 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time at the steam generating unit. This would allow 30-day rolling average emission rates to be calculated consistently across sources.

²² 70 FR 9705, February 28, 2005.

