

---

---

**United States Court of Appeals**

**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

---

**No. 78-1006**

**ALABAMA POWER COMPANY, ET AL., PETITIONERS**

**v.**

**DOUGLAS M. COSTLE, as Administrator,  
ENVIRONMENTAL PROTECTION AGENCY, ET AL.,  
RESPONDENTS**

**SIERRA CLUB, ET AL., INTERVENORS**

---

**Petitions for Review of Orders of the  
Environmental Protection Agency**

---

**Argued April 20, 1979**

**Decided December 14, 1979**

**Judgment entered  
this date**  
←

Notice: This opinion is subject to formal revision before publication in the Federal Reporter or U.S.App.D.C. Reports. Users are requested to notify the Clerk of any formal errors in order that corrections may be made before the bound volumes go to press.

## United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

---

No. 78-1006

ALABAMA POWER COMPANY, ET AL., PETITIONERS \*

v.

DOUGLAS M. COSTLE, as Administrator,  
ENVIRONMENTAL PROTECTION AGENCY, ET AL.,  
RESPONDENTS \*

SIERRA CLUB, ET AL., INTERVENORS \*

---

\* Consolidated with the following cases (identified by this Circuit's case number and petitioner), in all of which the Environmental Protection Agency is the respondent: No. 78-1008, American Petroleum Institute, et al.; No. 78-1525, Part II, Environmental Defense Fund, Inc.; No. 78-1590, Part II, Hampton Roads Energy Company; No. 79-1591, Alabama Power Company, et al.; No. 78-1592, Alabama Power Company, et al.; No. 78-1595, American Petroleum Institute, et al.; No. 78-1596, American Petroleum Institute, et al.; No. 78-1610, Part II, The Montana Power Company, et al.; No. 78-1752, District of Columbia, a municipal corporation; No. 78-1801, National Coal Association; No. 78-1802, National Coal Association; No. 78-1805, Mining and Reclamation Council of America, Inc.; No. 78-1806, Mining and Reclamation Council of America, Inc.; No. 78-1807, The Montana Power Company, Pacific Power and Light Company, Portland General Electric Company, Puget Sound Power and Light Com-

Bills of costs must be filed within 14 days after entry of judgment. The court looks with disfavor upon motions to file bills of costs out of time.

Petitions for Review of Orders of the  
Environmental Protection Agency

---

Argued April 20, 1979

Decided December 14, 1979

---

pany, and Washington Water Power Company; No. 78-1810, Part II, The Pittston Company; No. 78-1811, American Iron and Steel Institute; No. 78-1815, Part II, American Paper Institute and the National Forest Products Association; No. 78-1816, Ashland-Warren, Inc.; No. 78-1817, Ashland-Warren, Inc.; No. 78-1818, Manufacturing Chemists Association, Chemical Products Corporation, Dow Chemical Company, FMC Corporation, Monsanto Company, PPG Industries, Inc., Rohm and Haas Company, Stauffer Chemical Corporation, Union Carbide Corporation, and Allied Chemical Corporation; No. 78-1819, Part II, Manufacturing Chemists Association, Chemical Products Corporation, Dow Chemical Company, FMC Corporation, Monsanto Company, PPG Industries, Inc., Rohm and Haas Company, Stauffer Chemical Company, Union Carbide Corporation, and Allied Chemical Corporation; No. 78-1821, Asarco Incorporated; No. 78-1822, American Mining Congress, United States Steel Corporation, Buttes Resources Company, Cyrus Mines Corporation, Energy Fuels Corporation, Freeport Exploration Company, ITT Resources, Inc., Johnsmantown Sales Corporation, The Montana Coal Council, Thermal Energy Inc., and Wyoming Mineral Corporation; No. 78-1823, Westmoreland Coal Company and Westmoreland Resources, Inc.; No. 78-1824, Westmoreland Coal Company and Westmoreland Resources, Inc.; No. 78-1825, State of Texas; No. 78-1827, Mitchell Energy Co., a corporation; No. 78-1828, Cheyenne Refining Co., a corporation; No. 78-1829, Gary Western Co.; No. 78-1830, LA Jet, Inc., a corporation; No. 78-1832, Sierra Club; No. 78-1833, Reynolds Metals Company, Inc.; No. 78-1834, Colorado Interstate Gas Company, Tennessee Gas Pipeline Company, a division of Tenneco, Inc., and Natural Gas Pipeline Company of America; No. 78-1836, GATX Terminals Corporation, General American Transportation Corporation, and GATX Corporation; No. 78-1837, Occidental Oil Shale, Inc. and Ashland Colorado, Inc.; No. 78-1838, Part II, Kroppers Company, Inc.; and No. 78-1839), Part II, USM Corporation.

*Henry V. Nickel* with whom *George C. Freeman, Jr.*, *Michael B. Barr*, *Andrea S. Bear* were on the brief, for Alabama Power Company, et al., in Nos. 78-1006, 78-1591, 78-1592, 78-1801, 78-1802 and 78-1832.

*Michael K. Glenn* for American Paper Institute, et al., in Nos. 78-1815 and 78-1832.

*James R. Bieke* with whom *Francis M. Shea*, *Richard T. Conway*, *William R. Galeota* and *Joseph C. Zengerle* were on the brief, for Montana Power Company, et al., in Nos. 78-1610, 78-1807 and 78-1832.

*Richard G. Wise*, Assistant Corporation Counsel, with whom *Louis P. Robbins*, Acting Corporation Counsel, *John C. Salyer*, Assistant Corporation Counsel, were on the brief, for District of Columbia in No. 78-1752.

*Jim Mathews*, Assistant Attorney General, State of Texas, with whom *John L. Hill \**, Attorney General, *David M. Kendall \**, First Assistant Attorney General, State of Texas, were on the brief, for State of Texas in No. 78-1825.

*John J. Adams* and *David F. Peters* were on the brief, for American Petroleum Institute, et al., in Nos. 78-1008, 78-1595, 78-1596, 78-1801 and 78-1832.

*J. Michael Hines*, *John D. Field, III* and *John R. Feore, Jr.*, were on the brief, for Hampton Roads Energy Company in Nos. 78-1590 and 78-1832.

*Alan B. Mollohan* and *J. Roy Spradley, Jr.* were on the brief, for Mining and Reclamation Council of America, Inc. in Nos. 78-1805 and 78-1832.

*Jonathan B. Hill* and *Donald W. Markham* were on the brief, for The Pittston Company in Nos. 78-1810 and 78-1832.

---

\* At the time the brief was filed.

*Roger M. Golden* was on the brief, for American Iron and Steel Institute in Nos. 78-1811 and 78-1832.

*George J. Miller* and *William A. White* were on the brief, for Westmoreland Coal Company, et al., in Nos. 78-1823, 78-1824 and 78-1832.

*James L. Lyons* was on the brief, for Mitchell Energy Co., et al., in Nos. 78-1827, 78-1828, 78-1829, 78-1830 and 78-1832.

*Carl W. Ulrich*, *William R. Duff* and *Henry E. Brown* were on the brief for Colorado Interstate Gas Company, et al., in Nos. 78-1832 and 78-1834.

*William S. Hemsley, Jr.* was on the brief, for GATX Terminals Corporation, et al., in Nos. 78-1832 and 78-1836.

*Albert J. Beverage, III* and *Charles A. Patrizia* were on the brief, for Reynolds Metals Company, Inc. in No. 78-1833.

*Thomas C. Matthews, Jr.*, *Charles C. Abeles* and *Donald T. Bucklin* were on the brief, for Occidental Oil Shale, Inc., et al., in Nos. 78-1832 and 78-1837.

*Frank H. Morison*, *Donald Quander* and *James L. White* were on the brief, for ASARCO Inc. in Nos. 78-1821 & 78-1832.

*Robert C. Rauch*, for Environmental Defense Fund in Nos. 78-1006, 78-1008, 78-1525, Part II and 78-1610, Part II.

*Peter J. Herzberg* with whom *H. Anthony Ruckel*, *James H. Cohen* and *Kristine L. Hall* were on the brief, for Sierra Club Legal Defense Fund, Inc. in No. 78-1006, 78-1008, 78-1591, 78-1592, 78-1595, 78-1596, 78-1752, 78-1839, Part II, 78-1801, 78-1802, 78-1805, 78-1806, 78-1807, 78-1810, Part II, 78-1811, 78-1815, Part II, 78-1816, 78-1817, 78-1818, 78-1819, Part II, 78-1821, 78-1822, 78-

1823, 78-1824, 78-1825, 78-1827, 78-1828, 78-1829, 78-1830, 78-1832, 78-1833, 78-1834, 78-1836, 78-1837 and 78-1838, Part II.

*Erica L. Dolgin, Angus Macbeth and Elizabeth Stein*, Attorneys, Department of Justice, with whom *Sanford Sagulkin*, Acting Assistant Attorney General, was on the brief, for respondent Douglas M. Costle, et al.

*Peter H. Wyckoff*, Attorney, Environmental Protection Agency, a member of the bar of the Supreme Court of New York pro hac vice by special leave of Court, *Jeffrey C. Smith* and *Lydia N. Wegman*, Attorneys, Environmental Protection Agency, with whom *Joan Z. Bernstein*, General Counsel, Environmental Protection Agency, was on the brief, for respondent Environmental Protection Agency, et al.

*Lawrence V. Robertson, Jr. and John H. Cheatham, III* were on the brief, for intervenor, Interstate Natural Gas Association of America in No. 78-1834.

Also *James W. Moorman* and *Earl Salo*, Attorneys, Department of Justice entered appearances for respondent, Douglas M. Costle, et al. in Nos. 78-1006 and 78-1008.

Also *Tom Watson* entered an appearance for intervenor Sierra Pacific Power Company in No. 78-1832.

Also *Bruce J. Terris* and *Philip G. Sunderland* entered appearances for intervenor, Environmental Defense Fund, et al. in No. 78-1610, Part II.

Before LEVENTHAL,\* ROBINSON and WILKEY, *Circuit Judges*.

Opinions for the Court filed by *Circuit Judges* LEVENTHAL, ROBINSON and WILKEY.

---

\* This opinion was written by *Circuit Judge* LEVENTHAL and concurrences were received from the other Judges prior to his death.

*Per curiam*: Because of the great number of complex issues, the court's opinion appears in three parts, each written for the court by a member of the panel. Today's opinions supersede the *per curiam* opinion in this case, issued June 18, 1979. We have entertained narrowly focused petitions for reconsideration, all of which are disposed of by our holdings here.

A table of contents for the three opinions appears at the start of Judge Leventhal's opinion.

Opinion for the Court by LEVENTHAL, *Circuit Judge*: This is one of three opinions issued today considering challenges to the validity of final regulations<sup>1</sup> promulgated by the Environmental Protection Agency (EPA) on June 19, 1978 generally embracing the prevention of significant deterioration of air quality in the nation's "clean air areas."<sup>2</sup> These "PSD" regulations interpreted and began the implementation of various provisions of the Clean Air Act Amendments of 1977.<sup>3</sup> Pertinent provisions are gathered in title I, part C of the Clean Air Act as amended (hereafter sometimes referred to as the "PSD part" or the "PSD provisions").

Before us are consolidated petitions for review filed in this court, as provided by statute, within 60 days of

---

<sup>1</sup> 40 C.F.R. §§ 51.24, 52.21 (1978).

<sup>2</sup> "Clean air areas" is the term generally used to refer to regions designated under sections 107(d)(1)(D) & (E) of the Clean Air Act as having ambient air quality better than the applicable national primary or secondary ambient air quality standard, or for which there is insufficient data to make a determination of the air quality. 42 U.S.C. §§ 7407(d)(1)(D) & (E) (1978).

<sup>3</sup> P.L. 95-95, 91 Stat. 685, 42 U.S.C. §§ 7401 *et seq.* (1978) (hereafter cited as the "1977 Amendments"). The Clean Air Act is hereafter cited as "C.A.A." or as the "Act."

the date of promulgation.<sup>4</sup> A special procedure was employed by the Chief Staff Counsel of the Circuit to coordinate the efforts of counsel and facilitate the presentation of this extraordinarily complex case.<sup>5</sup> Significant preliminary issues raised by these petitions were argued on, October 10, 1978, and our ruling on those questions issued March 27, 1979.<sup>6</sup> The remaining issues raised by the petitions, involving primarily interpretative questions of comprehensive importance,<sup>7</sup> came to be argued on April 19 and 20, 1979.

The judicial review provisions as well as other features of the Clean Air Act Amendments set a tone for expedition of the administrative process that effectuates the congressional purpose to protect and enhance an invaluable national resource, our clean air. Motivated by such concerns, after careful and complete consideration of the case, we issued on June 18, 1979, a *per curiam*

---

<sup>4</sup> C.A.A. § 307(b)(1), 42 U.S.C. § 7607(b)(1) (1978).

<sup>5</sup> Chief Staff Counsel first separated out the preliminary issues for argument and arranged for them to be heard first in a separate action. Then, he aligned the parties according to their interests, divided the issues, and assigned them for presentation in written and oral argument.

<sup>6</sup> *Citizens To Save Spencer County v. EPA*, — — U.S.App. D.C. —, — F.2d — (No. 78-1002, 3/27/79) (upholding EPA's exercise of legislative rulemaking authority to set the effective date for the PSD preconstruction review and permit requirements of the 1977 Amendments as March 1, 1978, subject to minor exceptions).

<sup>7</sup> In addition to the effect on the interpretation and implementation of the PSD provisions, several of the questions decided here are of significance for other comprehensive rulemakings under the 1977 Amendments, *e.g.*, the regulations for "nonattainment areas" under part D of the Act, 42 U.S.C. §§ 7501-07 (1978).

opinion<sup>8</sup> summarizing our rulings on the questions presented. The expedited judgment and *per curiam* opinion served two additional purposes: (1) it enabled the EPA to commence rulemaking or other proceedings necessary to promulgate those revisions in the PSD regulations required by our rulings, and to take other prudent action to effectuate congressional policies;<sup>9</sup> and (2) it allowed the court to entertain, prior to the issuance of this opinion, narrowly focused petitions for reconsideration directed to the panel by the parties.<sup>10</sup>

The three opinions issued today are in part an incorporation, with some enlargement of analysis, of the rulings in our *per curiam* opinion of June 18, 1979, together with modifications that the court has deemed appropriate in light of the petitions for reconsideration that have been filed. In view of the large number of questions raised, the members of the panel divided responsibility for preparation of discrete parts.

---

<sup>8</sup> Alabama Power Company, et al. v. Costle, et al., — U.S. App.D.C. —, — F.2d — (No. 78-1006, 6/18/79).

<sup>9</sup> EPA has proceeded with expedition to revise the pertinent regulation in accordance with the rulings of our *per curiam* opinion. Proposed revised regulations have already been published in the Federal Register for public comment. 40 Fed. Reg. 51924 (Sept. 5, 1979).

<sup>10</sup> The court was prompted to adopt this novel procedure by its appreciation of the complex and subtle nature of the case. Parties were encouraged to consolidate the presentation of petitions for reconsideration, a procedure successfully employed at oral argument.

Petitions for reconsideration submitted pursuant to this procedure were submitted without prejudice to the right of filing in the ordinary course full petitions for reconsideration subsequent to the issuance of this detailed opinion.

## TABLE OF CONTENTS

<i>Opinion for the Court by Judge Leventhal</i>		Page
I. BACKGROUND OF PSD PROGRAM AND REGULATIONS UNDER REVIEW .....		10
II. POTENTIAL TO EMIT .....		24
III. EXEMPTION OF 50 TPA CONTROLLED SOURCES .....		32
IV. PROTECTION OF THE INCREMENTS....		44
V. APPLICATION OF PSD PERMITS TO SOURCES IN NONATTAINMENT AREAS .....		49
VI. FUGITIVE DUST SOURCES, RULEMAKING, AND EXEMPTION AUTHORITY....		59
VII. MONITORING .....		65
<i>Opinion for the Court by Judge Robinson</i>		
I. BASELINE DATE .....		1
II. BASELINE AND VOLUNTARY FUEL SWITCHES .....		6
III. MODELING .....		18
IV. STACK HEIGHT .....		33
<i>Opinion for the Court by Judge Wilkey</i>		
I. SOURCE DEFINITION .....		2
II. MAJOR MODIFICATION/BUBBLE .....		12
III. POLLUTANTS SUBJECT TO PSD REGULATION AND THE "MAJOR EMITTING FACILITY" THRESHOLD .....		22
IV. DEFINITION OF BACT TO INCLUDE A VISIBLE EMISSION STANDARD .....		30
V. "COMMENCED CONSTRUCTION" FOR PHASED CONSTRUCTION PROJECTS ....		33

I. BACKGROUND OF PSD PROGRAM AND REGULATIONS  
UNDER REVIEW <sup>11</sup>

A. *Clean Air Amendments of 1970*

Responding to the growing perception of air pollution as a serious national problem, Congress enacted the Clean Air Amendments of 1970,<sup>12</sup> which restructured the Clean Air Act and established a rigorous program for the regulation of existing and new sources of air pollution. At the heart of the program were federally promulgated national ambient air quality standards (NAAQS) and state-adopted plans to implement those standards.

Section 109 of the Act <sup>13</sup> directed the Administrator of EPA to promulgate primary and secondary NAAQS establishing the maximum permissible concentrations of air pollutants. Primary standards were defined as those whose attainment and maintenance were necessary "to protect the public health," with "an adequate margin of safety." Secondary standards were to specify the level of air quality necessary to "protect the public welfare from any known or anticipated adverse effects" of a pollutant. Pursuant to this authority, the Administrator in 1971 promulgated NAAQS for six pollutants, including sulfur dioxide and particulate matter, two pollutants of primary concern to this litigation.<sup>14</sup>

The Act contemplated application of the NAAQS to individual sources of pollution through state enforcement. Section 10 of the Act <sup>15</sup> required each state to hold hear-

---

<sup>11</sup> This description derives in substantial measure from the able joint statement of the case prepared by industry counsel.

<sup>12</sup> Pub. L. No. 91-604, 84 Stat. 1676.

<sup>13</sup> Current version at 42 U.S.C. § 7409 (1978).

<sup>14</sup> 40 C.F.R. § 50.4-11 (1978).

<sup>15</sup> Current version at 42 U.S.C. § 7410 (1978).

ings on, adopt, and submit to the Administrator a State Implementation Plan (SIP) for each "air quality control region" within the state. The SIP was to provide (1) for the attainment of primary NAAQS "as expeditiously as practicable but . . . in no case later than three years from the date of approval of the plan," and (2) for the attainment of the secondary standards "within a reasonable time." Section 110 required that each plan include "emission limitations, schedules, and timetables with such limitations and such other measures as may be necessary to insure attainment and maintenance" of the ambient air quality standards. Once a state plan was submitted, the Administrator was to approve it if it was consistent with the statutory requirements. If the plan was inadequate, or if no plan was submitted, the Administrator was required to propose and promulgate a plan for the state.

The provisions for the attainment and maintenance of NAAQS were to operate primarily through controls on existing sources of pollution. In addition, the Act contemplated that major new sources of pollution would be subject to controls more stringent than those needed to meet primary and secondary NAAQS. Section 111 of the Act<sup>16</sup> required the Administrator to adopt technology-based new source performance standards (NSPS) limiting the emissions from any new or modified facilities in certain industrial categories that "contributed significantly to air pollution." Section 111(e) made it unlawful for a new source in such a category to operate in violation of any applicable NSPS regardless of whether its emissions caused ambient standards to be exceeded. Section 110 also provided that state implementation plans contain a preconstruction review procedure to assure that major new sources would not interfere with the attainment and maintenance of ambient standards.

---

<sup>16</sup> *Id.* at § 7411.

B. *The PSD Program Prior to the 1977 Amendments*

1) *Genesis of PSD Program.* Section 110 of the Act contained no explicit provision addressing potential deterioration of ambient air quality in those areas where ambient pollutant levels were lower than those mandated by primary and secondary NAAQS. EPA did not impose on the states any requirement to control new sources of pollution that posed no threat to ambient standards.

In 1972, the Sierra Club brought suit alleging that the Act required state plans to include measures to prevent the "significant deterioration" of air quality in those parts of the country where the ambient standards were being met. The District Court for the District of Columbia held that the Act's statement of purpose, contained in section 101(b)(1), imposed such an obligation.<sup>17</sup> On June 12, 1972, it issued a preliminary injunction directing the Administrator to disapprove state plans and to promulgate regulations where the plan failed to take the measures necessary to prevent such deterioration. This court affirmed. On June 11, 1973, the Supreme Court affirmed by an equally divided court. In response to the injunction, EPA disapproved all state plans in November, 1972, and in 1973, following the Supreme Court's action, the agency initiated rulemaking to incorporate PSD requirements into each state plan.

2) *1974 PSD Regulations.* In December, 1974, the Administrator promulgated final regulations amending each state plan to include a PSD requirement.<sup>18</sup> The new PSD program implemented through preconstruction reviews of new or modified sources of sulfur dioxide and

---

<sup>17</sup> *Sierra Club v. Ruckelshaus*, 344 F. Supp. 253 (D.D.C. 1972), *aff'd per curiam*, 4 ERC 1815 (D.C. Cir. 1972), *aff'd by an equally divided court, sub. nom. Fri v. Sierra Club*, 412 U.S. 541 (1973).

<sup>18</sup> 39 Fed. Reg. 42,510 (1974).

particulate matter.<sup>19</sup> "Significant deterioration" was defined in terms of allowable numerical increases in the concentration of sulfur dioxide and particulate matter in areas where ambient pollution levels were presumed by the regulations to be lower than those mandated by primary and secondary NAAQS.<sup>20</sup> These regulated areas came to be referred to as "clean air areas," although, as will become clear from our subsequent discussion, the term encompasses areas that in fact need not possess air quality better than the applicable NAAQS. These allowable increases, or "increments," determined whether air quality deterioration associated with a new facility was permissible. Increment consumption, or "use," was calculated by reference to a "baseline" level of air quality. Under the 1974 regulations this baseline was defined as the representative air quality during 1974 *plus* the projected emissions from sources that had received permits to construct before January 1, 1975, but were not in operation by that date.<sup>21</sup>

<sup>19</sup> 40 C.F.R. § 52.21(d)(1) (1977) (superseded). EPA stated that it could not regulate for PSD the other four pollutants for which NAAQS had been established because, among other reasons, existing analytical procedures were not adequate to determine the impact of individual sources on air quality concentrations of these pollutants. See 39 Fed. Reg. 42,511 (1974).

<sup>20</sup> The regulations applied of their own force to all areas of the country except as provided by the following provision:

The provisions of this paragraph do not apply in those counties or other functionally equivalent areas that pervasively exceeded any national ambient air quality standards during 1974 for sulfur dioxide or particulate matter and then only with respect to such pollutants. States may notify the Administrator at any time of those areas which exceeded the national standards during 1974 and therefore are exempt from the requirements of this paragraph.

40 C.F.R. § 52.21(c)(1) (1977).

<sup>21</sup> 40 C.F.R. § 52.21(d)(1)(i) (1977) (superseded).

The 1974 regulations established a program under which the amount of new growth allowed—the size of increment—would depend upon the amount of growth desired for the area. Areas subject to PSD regulations were divided into three groups. Initially, all such areas were designated Class II, for which increments were set permitting moderate growth. Areas could be redesignated Class I, for which much smaller increments applied, allowing virtually no growth, or Class III, for which increases in pollution were allowed up to the national ambient standards. Procedures were established for redesignations by the state (or, with respect to areas within their jurisdiction, by Federal Land Managers and Indian Governing Bodies).<sup>22</sup>

Small industrial facilities, surface mining, forestry and similar operations were not subject to PSD review. Rather, the regulations covered 19 categories of typical large industrial (or, in the case of incinerators, municipal) facilities. Each source on the list had significant process emissions of particulates or sulfur dioxide which, EPA estimated, accounted for “essentially all of [the sulfur dioxide and particulate matter] emitted in clean areas.”<sup>23</sup> New sources and modifications of existing sources on the list of 19 were subject to preconstruction review. The term “modification,” which triggered preconstruction review, was generally defined as a change in operation or design that increased emissions at a source, but it was further defined so as to be inapplicable to certain changes, including the use of a more polluting fuel, if the source was designed to use the alternate fuel prior to the December, 1974, promulgation of the PSD regulations.<sup>24</sup> A PSD permit was required for new or modi-

---

<sup>22</sup> *Id.* at § 52.21 (c) (superseded).

<sup>23</sup> 38 Fed. Reg. 18,989 (1973).

<sup>24</sup> 40 C.F.R. § 52.01(d) (1977) (superseded).

fied sources on the list if construction was commenced after June 1, 1975.

In order to obtain a PSD permit, sources were required to demonstrate that their emissions would not violate the increments in any area encompassed by the regulations. Under the PSD program, after January 1, 1975, all emission increases were counted against the increments unless emitted from a source that had received its permit but was not in operation by that date.<sup>25</sup> In other words, emission increases from new small sources, from fuel switches and from large sources commencing construction between January 1, 1975, and June 1, 1975, were not subject to PSD review but could consume the increment. Therefore, the 1974 PSD regulations "would permit" unregulated sources of increased emissions "to 'use up' the entire available deterioration increment, and in some cases exceed the increment. . . ." <sup>26</sup> Since major sources subject to PSD were required to "consider the impact" of emission increases from unregulated sources, the PSD program assured that, if the increments were exceeded, PSD permitting of major industrial sources would cease unless the area were "reclassified" to make a larger increment applicable to it.<sup>27</sup>

Under the PSD program, determination of a source's impact on the applicable increments was based upon "diffusion models"—mathematical techniques for simulating the diffusion into the atmosphere of a new source's emissions under various meteorological conditions and operating levels.<sup>28</sup> The purpose of such models is to pre-

---

<sup>25</sup> The definition of "baseline," see 40 C.F.R. § 52.21(d) (2) (i) (1977) (superseded), excluded such emissions.

<sup>26</sup> 39 Fed. Reg. 31,004 (1974).

<sup>27</sup> *Id.* at 31,003.

<sup>28</sup> See Technical Support Document—EPA Regulations for Preventing the Significant Deterioration of Air Quality 29-30 (1975); J.A. at 241-42.

dict pollutant concentrations at any point in the neighborhood of the source. While EPA recognized that diffusion modeling could not be expected to predict exactly *actual* increment consumption, the "normal variability of air quality data,"<sup>29</sup> in EPA's view, made it impractical to use monitoring data (*i.e.*, actually measured data) to determine increment consumption. Therefore, since models were a more "consistent" method for calculating consumption, they were "used to keep track of available (or unused) increments as sources and emission[s] are increased or decreased."<sup>30</sup>

"Accounting" by modeling was an on-going process, and modeling techniques or assumptions might require adjustments in previous estimates of increment consumption. These changes would affect only future PSD applicants, however. As EPA emphasized in its Background Document, "significant deterioration is defined in terms of air quality increments *rather than absolute air quality levels*." Therefore, because the PSD program did not establish "absolute air quality levels" that could not be exceeded, new sources receiving PSD permits were not subject to further controls to meet the increment if it were later discovered that the "EPA or State approved model was inaccurate."<sup>31</sup>

In addition to the increment impact review, sources under the 1974 PSD program had to apply "best avail-

---

<sup>29</sup> 39 Fed. Reg. 31,003 (1974). The concentration of pollutants in the air is not constant. Variable meteorological conditions (wind direction, wind speed, temperature, humidity, etc.), source location, design and operating modes as well as other factors, combine to create different pollutant concentrations at different times.

<sup>30</sup> Technical Support Document, *supra* note 16, at 29-30, J.A. at 241-42.

<sup>31</sup> *Id.*

able control technology," defined in terms of emission limitations on sulfur dioxide and particulates. These BACT limitations were to be established on a case-by-case basis unless the source was subject to new source performance standards under section 111. The regulations provided that where an NSPS was applicable, compliance with the NSPS would constitute compliance with BACT.<sup>32</sup>

3) *Judicial Review of 1974 Regulations.* We sustained the 1974 PSD regulations over challenges by both industry and environmental groups.<sup>33</sup> The Supreme Court granted industry petitions for certiorari to review our holding that EPA had authority to adopt PSD requirements under section 110 of the Act. On August 27, 1977, Congress passed the Clean Air Act Amendments of 1977 (1977 Amendments). The Supreme Court consequently vacated our decision and remanded for consideration in light of the 1977 Amendments and of possible mootness. We, in turn, remanded the case to EPA for consideration of those issues.

### C. *Clean Air Act Amendments of 1977*

The 1977 Amendments<sup>34</sup> maintain the basic structure of regulation of stationary sources through state plans, but made substantial changes in the requirements governing those plans. The Amendments provide for additional controls on existing sources to ensure protection of the ambient standards and visibility. Further, they establish strict requirements for major new sources to be located in areas where the national standards have not yet been attained ("non-attainment areas").

---

<sup>32</sup> 40 C.F.R. § 52.21(d)(2)(ii) (1977) (superseded).

<sup>33</sup> *Sierra Club v. EPA*, 176 U.S.App.D.C. 335, 540 F.2d 1114 (1976), *vacated sub nom. Montana Power Co. v. EPA*, 434 U.S. 809 (1977).

<sup>34</sup> Pub. L. No. 95-95, 91 Stat. 685, 42 U.S.C. § 7401 *et seq.* (1978).

The central focus of this case is Part C of title I (sections 160-169) added to the Clean Air Act by the 1977 Amendments. Section 161 of the Act<sup>35</sup> now provides an express directive that state plans include measures to prevent the significant deterioration of air quality in areas designated by the states under section 107(d) (1)(D) & (E) of the Act as having ambient air quality better than the applicable national primary or secondary ambient air quality standard, or for which there is insufficient data to make a determination of the air quality. An area so designated has commonly been referred to in the legislative history and in the literature that has developed as a "clean air area," a description often contrasted with the term "non-attainment area," which is defined by section 171(2) of the Act as an area that has been demonstrated to exceed an NAAQS for a given pollutant.<sup>36</sup> We wish to alert the reader that the phrase

---

<sup>35</sup> 42 U.S.C. § 7471 (1978).

<sup>36</sup> C.A.A. § 171(2), 42 U.S.C. § 7501(2) (1978) provides:

The term 'nonattainment area' means, for any air pollutant an area which is shown by monitoring data or which is calculated by air quality modeling (or other methods determined by the Administrator to be reliable) to exceed any national ambient air quality standard for such pollutant. Such term includes any area identified under paragraphs (A) through (C) of section 107(d) (1).

Circumstances will arise where an area that has been designated under section 107(d) (1) (D) or (E) will be demonstrated on the basis of monitoring data required of a permit applicant under section 165(e) (2), or on the basis of other information, to be a nonattainment area for a given pollutant. Until the designation of that area for such a pollutant is modified under section 107, the area will be categorized both under section 107 as a presumed "clean air area" and under section 171(2) as a "nonattainment area." This anomaly illustrates that the second sentence of the definition of nonattainment area is inclusive, but not exhaustive.

"clean air areas" is a generalization that may be confusing when employed in technical usages. A so-called clean air area for a given air pollutant may include an area that for the same pollutant would be classified as a non-attainment area if sufficient data existed. Further, since classification of areas is pollutant-specific, the same area may be a clean air area due to the air quality with respect to one pollutant, yet be a non-attainment area with respect to another pollutant. Finally, the areas of the country subject to regulation under the PSD provisions of the Act include areas other than those commonly referred to as clean air areas. With these caveats, which will be explained in greater detail as they become pertinent to our discussion, we will continue to use the term "clean air areas" as a shorthand expression where we do not feel the context calls for a more technical usage.

Under the provisions of the 1977 Amendments, areas subject to PSD regulation are divided into three classes;<sup>37</sup> increments are set for each class;<sup>38</sup> new major facilities to be located in such areas must meet technology-based emission limitations reflecting BACT;<sup>39</sup> these facilities cannot commence construction if their emissions would cause or contribute to a violation of the applicable increments in a Class I, II or III area;<sup>40</sup> and demonstrations that new facility emissions would not violate the applicable increments are to be based on both monitoring and diffusion modeling.<sup>41</sup> The list of 19 major sources which emit, or have the potential to emit, 100 tons per year or more of any pollutant are

---

<sup>37</sup> C.A.A., § 162, 42 U.S.C. § 7472 (1978).

<sup>38</sup> *Id.* at § 163, 42 U.S.C. § 7473 (1978).

<sup>39</sup> *Id.* at § 165(a)(4), 42 U.S.C. § 7475(a)(4) (1978).

<sup>40</sup> *Id.* at § 169(4), 42 U.S.C. § 7479 (1978).

<sup>41</sup> *Id.*

subject to PSD review.<sup>42</sup> In addition, any other source having the potential to emit 250 tons per year or more of any pollutant is also covered. As in the 1974 regulations, "modifications" of such major sources are also subject to PSD review.<sup>43</sup> Section 165 of the Act<sup>44</sup> tightens the requirement that must be included in state plans for the PSD preconstruction review and permitting of major new sources to be located in clean air areas. These stricter requirements include: (1) case-by-case determination of BACT rather than automatic application of NSPS; (2) requirements of air quality impact analyses performed in accordance with EPA regulations; (3) requirements for the protection of visibility in Class I areas even though Class I increments are met; and (4) provisions requiring public hearings in all cases instead of mere opportunity for written comment. Other changes in the 1974 regulations effected by the 1977 Amendments include provision for "variances" from Class I increments if stringent criteria are satisfied,<sup>45</sup> and modification of the definition of "baseline."<sup>46</sup> Congress also structured the program to minimize disruption, by exempting existing sources from the permit requirement of section 165 until "modifications" of those facilities increased emissions,<sup>47</sup> and by phasing sources under construction into the program.<sup>48</sup> In addition, section 166 directs EPA to develop within two years PSD programs for pollutants other than par-

---

<sup>42</sup> *Id.* at § 169 (1), 42 U.S.C. § 7479 (1) (1978).

<sup>43</sup> *Id.* at § 169 (2), 42 U.S.C. § 7479 (2) (1978).

<sup>44</sup> *Id.* at § 165, 42 U.S.C. § 7475 (1978).

<sup>45</sup> C.A.A. at § 165 (d) (2) (D), 42 U.S.C. § 7475 (d) (2) (D) (1978).

<sup>46</sup> *Id.* at § 169 (4), 42 U.S.C. § 7479 (4) (1978).

<sup>47</sup> *Id.* at § 169 (2) (C), 42 U.S.C. § 7479 (2) (C) (1978).

<sup>48</sup> *Id.* at § 168, 42 U.S.C. § 7478 (1978).

ticulates and sulfur dioxide. EPA is not required to follow the "area classification" approach for these other pollutants, but implementation through a permit program is contemplated.

#### D. PSD Regulations Under the 1977 Amendments

Following several notices of proposed rulemaking, comment periods, and public hearings, EPA promulgated two sets of final PSD regulations on June 19, 1978.<sup>49</sup> One set amended 40 C.F.R. Part 51 to provide guidance to the states on the development of revised state implementation plans. The other set amended 40 C.F.R. Part 52 to incorporate the immediately effective changes required by the 1977 Amendments.

The regulations require that each major stationary source and each modification covered by the regulations undergo a detailed preconstruction review and obtain a permit prior to the commencement of construction. The PSD review process contains a number of steps:

1) *Control Technology Review*. Each new major source must meet all applicable new source performance standards promulgated under section 111 of the Act, all emission standards for hazardous pollutants under section 112 of the Act, and all applicable state implementation plan requirements.<sup>50</sup> In addition, each such source must apply best available control technology (BACT) for sulfur dioxide and particulates unless emissions of that pollutant will be less than 50 tons per year, 1,000 pounds per day and 100 pounds per hour, whichever is most restrictive.<sup>51</sup>

---

<sup>49</sup> 43 Fed. Reg. 26,380, 26,388 (1978).

<sup>50</sup> 40 C.F.R. §§ 51.24(j) (1), 52.21(j) (1) (1978).

<sup>51</sup> *Id.* at §§ 51.24(j) (2), 52.21(j) (2).

2) *Air Quality Review*. At the time an application for a PSD permit is submitted, the owner or operator of the proposed source must demonstrate that allowable emissions from the source will not cause or contribute to a violation of any NAAQS or the applicable increments.<sup>52</sup> Estimates of ambient concentrations that must be provided in order to determine compliance with these requirements must "be based on the applicable air quality models, data bases, and other requirements" specified in EPA's modeling guidelines. The models described in these guidelines may be modified, or other models substituted, only after notice and opportunity for comment by the public, and written approval by the Administrator.<sup>53</sup>

3) *Monitoring Requirements*. Two types of monitoring requirements are imposed on sources submitting PSD applications after August 7, 1978. An application must include a full year of continuous monitoring data for any pollutant emitted by the source for which there is an ambient standard. This monitoring data, along with the required modeling results, will form the basis for the permitting authority's determination of whether the proposed source would cause or contribute to a violation of a primary or secondary NAAQS. The second requirement is for post-construction monitoring, to be used as the state or EPA feels necessary to determine actual impact of the source on primary or secondary ambient standards.<sup>54</sup>

4) *Source Information*. The PSD permit application must include, at a minimum, information on the location, design, and planned operating schedule of the proposed facility, a detailed construction schedule, and a descrip-

---

<sup>52</sup> *Id.* at §§ 51.24(1), 52.21(1).

<sup>53</sup> *Id.* at §§ 51.24(m)(1), 52.21(m)(1).

<sup>54</sup> *Id.* at §§ 51.24(n), 52.21(n).

tion of the control technology that is proposed as BACT.<sup>55</sup> In addition, the applicant must provide an "analysis of impairment to visibility, soils, and vegetation" in the area, and an analysis of the air quality impacts of the expected growth associated with the proposed source.<sup>56</sup> Meteorological and topographical information on the air quality impacts and nature and extent of any growth in the locale of the proposed facility since August 7, 1977, must also be provided if requested by EPA or the state.

5) *Processing Applications.* The regulations establish a complex process for handling the permit application. Within 30 days of receipt of the application, EPA must inform the applicant of any additional information required. EPA or the state must make a final determination on the application within one year after the application is complete. During that time, EPA or the state must: (a) make a preliminary determination whether the proposed source will be approved, disapproved, or approved with conditions; (b) give public notice of the preliminary determination, provide opportunity for comment and public hearing and the applicant's responses, and give the applicant and the public notice of the final determination.<sup>57</sup>

The regulations also require that, even after the PSD review process is completed and permit issued, the state plan must be revised—and individual source emissions reduced—if the state or EPA determines that an applicable increment or maximum permissible concentration is being violated.<sup>58</sup>

<sup>55</sup> *Id.* at §§ 51.24(o), 52.21(o).

<sup>56</sup> *Id.* at §§ 51.24(p), 52.21(p).

<sup>57</sup> *Id.* at §§ 51.24(r), 52.21(r).

<sup>58</sup> *Id.* at § 51.24(a)(1)-(3).

## II. POTENTIAL TO EMIT

At the heart of the PSD provisions lies a definition that is jurisdictional in nature. We refer to the section 169(1) definition of "major emitting facility," which identifies sources of air pollution that are subject to the preconstruction review and permit requirements of section 165.<sup>59</sup> The definition is not pollutant-specific, but

---

<sup>59</sup> Section 169(1), 42 U.S.C. § 7479 (1978) provides in relevant part:

The term "major emitting facility" means any of the following stationary sources of air pollutants which emit, or have the potential to emit, one hundred tons per year or more of any air pollutant from the following types of stationary sources: fossil-fuel fired steam electric plants of more than two hundred and fifty 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 two hundred and fifty 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 two hundred and fifty million British thermal units per hour heat input, petroleum storage and transfer facilities with a capacity exceeding three hundred thousand barrels, taconite ore processing facilities, glass fiber processing plants, charcoal production facilities. Such term also includes any other source with the potential to emit two hundred and fifty tons per year or more of any air pollutant. This term shall not include new or modified facilities

rather identifies sources that emit more than a threshold quantity of *any* air pollutant.<sup>60</sup> Once a source has been so identified, it may become subject to section 165's substantial administrative burdens and stringent, technological control requirements for each pollutant regulated under the Act, even though the air pollutant, emissions of which caused the source to be classified as a "major emitting facility," may not be a pollutant for which NAAQS have been promulgated or even one that is otherwise regulated under the Act. As will become apparent from consideration of the ramifications of this definition, Congress's intention was to identify facilities which, due to their size, are financially able to bear the substantial regulatory costs imposed by the PSD provisions and which, as a group, are primarily responsible for emission of the deleterious pollutants that befoul our nation's air. Such facilities are defined in section 169(1) as those stationary sources of air pollutants from among 28 listed categories which "emit, or have the potential to emit" 100 tons per year or more of any air pollutant plus any other stationary source with the "potential to emit" 250 tons per year or more of any air pollutant.

EPA has interpreted the phrase "potential to emit" as referring to the measure of a source's "uncontrolled emissions"—i.e., the projected emissions of a source when operating at full capacity, with the projection increased by hypothesizing the absence of air pollution control

---

which are nonprofit health or education institutions which have been exempted by the State.

<sup>60</sup> Section 165 requires BACT for any pollutant regulated under the act. It should be noted that the § 169(1) definition of major emitting facility refers to a broader category of pollutants than does that of § 165. Section 169 sets as a threshold the emission of "any air pollutant," and § 302(g) defines that extremely broadly.

equipment designed into the source.<sup>61</sup> Yet, the language and comprehensive scheme of the statute reveal that an emitting facility is "major" within the meaning of section 169(1), only if it either (1) actually emits the specified annual tonnage of any air pollutant, or (2) has the potential, when operating at full design capacity, to emit the statutory amount. The purpose of Congress was to require preconstruction review and a permit before major amounts of emissions were released into the air. When determining a facility's potential to emit air pollutants, EPA must look to the facility's "design capacity"—a concept which not only includes a facility's maximum productive capacity (a criterion employed by EPA) but also takes into account the anticipated functioning of the air pollution control equipment designed into the facility.

We are cognizant that in general a court defers to the interpretation of a new statute by the agency that is charged with putting it into effect, meshing the wheels, and that presumably has some awareness of the approaches of legislators particularly concerned with the legislation. However, we view our analysis of congressional intent, set forth above, as clearly discernible from section 169(1). We identify the following as indicators of legislative intent. Looking at language, we see that the first sentence provides that a major emitting facility (in enumerated categories) must "emit, or have the potential to emit" 100 tons per year of any air pollutant. Plainly, the pollutants that sources "emit" is a reference to some measure of actual emissions. However, under EPA's interpretation of "potential to emit," the actual emissions calculation called for by the verb "emit" would lose all significance. When potential emissions are calculated, as EPA provided, by assuming operation at full capacity, without any reduction to take into account the operation

---

<sup>61</sup> 40 C.F.R. §§ 51.24(b)(3), 52.21(b)(3) (1978).

of the facility's air pollution control equipment, then potential emissions will always and inherently exceed actual emissions. Under our construction a meaning is given to the use of "emit" and "or," as applicable in those instances when for any reason, whether or not there is fault or accident, the "cleansing" equipment has not been operated, or has been operated at variance from design.<sup>62</sup>

For a wide angle lens on intent, we turn to the fact that Congress was fully aware that many major new sources of air pollution were already required by law to install and operate air pollution control equipment. The "new source performance standards" of section 111 of the Act, as well as provisions of existing state implementation plans, were the sources of such requirements. In this context one would require strong statutory evidence that Congress intended to approach the measurement of emissions in ignorance and disregard of the operation of pollution control equipment already required by law to be designed into a facility. All the statutory evidence points the other way.

The coverage of the 100 ton-per-annum threshold of the first sentence of section 169(1) extends to 28 categories of facilities. A look at these categories, and a further look at the legislative history<sup>63</sup> reveal that Congress was concerned with large industrial enterprises—

---

<sup>62</sup> We are aware that the second sentence of section 169(1), which extends coverage of the term "major emitting facility" to "any other source with the potential to emit" 250 tons per year of any air pollutant, is not phrased in the disjunctive; the verb "emit" has not been included. Nevertheless, we are unpersuaded that Congress intended the disjunctive form of the first sentence to be mere surplusage. It may be that the "actual emissions" alternative should be read into the second sentence on the ground that Congress plainly included a parallel construction.

<sup>63</sup> See notes 70 & 72, *infra*.

major actual emitters of air pollution. The draftsmen were of the view that certain small industrial facilities within these categories might actually and potentially emit less than the threshold amount. But the submissions of the parties establish that no operational industrial facility that could be described as within the listed categories would have the "potential to emit" less than the threshold amount if the operation of cleansing control equipment is totally discounted.

Congress was presumably also aware of the high rate of effectiveness with which control equipment eliminates pollutants from unprocessed industrial emissions. For example, at the time of the enactment of the PSD provisions, technology in operation was capable of eliminating over 99% of the particulate matter from emissions. Thus, a source with the potential—according to EPA's "uncontrolled emissions" standard—to emit 100 tons per annum of particulate matter would emit in actuality less than one ton per year. The record illustrates that the heating plant operating in a large high school or in a small community college would become "major" sources under such a test.<sup>64</sup> We have no reason to believe that Congress intended to define such obviously minor sources as "major" for the purposes of the PSD provision.

EPA recognized that its definition placed an intolerable burden on both the agency and minor sources of pollution and sought to cope with it by creating a broad exemption for smaller sources. As we explain in a subsequent section of this opinion,<sup>65</sup> the Act does not give the agency a free hand authority to grant broad exemptions. Though the costs of compliance with section 165 requirements are substantial, they can reasonably be borne by facilities that actually emit, or would actually

---

<sup>64</sup> Cong. Rec. 512812 (July 19, 1976), LHA at 382.

<sup>65</sup> See section III, *infra*.

emit when operating at full capacity, the large tonnage thresholds specified in section 169(1). The numbers of sources that meet these criteria, as we delineate them, are reasonably in line with EPA's administrative capability.

EPA asserts that its view is supported by the interplay between the section 169(1) definition of major emitting facility and a partial exemption from PSD review requirements specified in section 165(b).<sup>66</sup> It suffices at this juncture to refer to a subsequent part of the Court's opinion,<sup>67</sup> and say that EPA's asserted conflict between sections 165(b) and 169(1) is premised on an erroneous interpretation of the application of section 165(b).

We mention the legislative history with some diffidence, for it is extensive, complex, and conflicting in certain instances. But our full review of the materials that have come to our attention reveals that the legislative history in general supports our interpretation of section 169(1).

The critical phrase "emit or has the potential to emit" had its origin in the Senate version of the bill that was to become the 1977 Amendments to the Clean Air Act.<sup>68</sup> The House version used the equivalent phrase: "directly

---

<sup>66</sup> Section 165(b) creates a partial exemption from certain PSD review requirements for facilities that have been "modified" where the increase in particulate and SO<sub>2</sub> emissions, due to the modification, is less than 50 tons per year. EPA asserts that the proper interpretation of section 165(b) creates a conflict with the definition of major emitting facility that is eliminated when the measure of a major emitting facility is projected emissions in the absence of "cleansing" control equipment.

<sup>67</sup> See section III of Judge Wilkey's opinion in this case.

<sup>68</sup> S. Rep. No. 94-717, 94th Cong., 2d Sess. 221 (1976), LHA at 1691 (1976 version of bill); S. Rep. No. 95-127, 95th Cong., 2d Sess. 219 (1977), LHA at 2643 (1977 version of bill).

emits, or has the design capacity to emit.”<sup>69</sup> The Conference Committee adopted the wording of the Senate bill, but its Report reflects an understanding of the equivalence of the House and the Senate versions on this point. We refer to the Report’s interpolation of the House language into the Conference Committee’s paraphrase of the final provision:

The State plan must require permits for: (a) All 28 categories listed in the Senate bill if the source has the potential (design capacity) to emit over 100 tons per year; and (b) any other source with the design capacity to emit more than 250 tons per year of any air pollutant.<sup>70</sup>

EPA agrees that the Conference Committee treated the House and Senate versions as having the same meaning but argues that EPA’s “uncontrolled emissions” construction was intended. There is some support for EPA’s position in legislative history, particularly on the Senate side,<sup>71</sup> but the overall legislative history does not sup-

---

<sup>69</sup> H. Rep. No. 94-1175, 94th Cong., 2d Sess. 358 (1976), LHA at 932 (1976 version of bill); H. Rep. No. 95-194, 95th Cong., 2d Sess. 438 (1977), LHA at 1908 (1977 version of bill).

<sup>70</sup> H. Rep. No. 95-564, 95th Cong., 1st Sess. 152 (1977), LHA at 3046.

<sup>71</sup> EPA makes the point that the term “potential emissions” had some currency within the agency during the course of the legislative process and that the term referred to emissions in the absence of pollution control equipment. EPA also points to portions of the legislative history where documents or postulated situations employing the “potential emissions” usage have been incorporated. At most, there are indications from these references that there may have been some ambiguity or confusion at times between the term “potential emissions” and the term “potential to emit.” But it is too great a leap to conclude from these few references that one phrase (“potential emissions”) describing a type of emissions, has the same meaning as “potential to emit,” a phrase used in the statute to describe a type of polluting source.

port EPA's position. The committee reports and floor debates evidence the understanding that only major sources of actual emissions would be covered by the PSD permit requirements and that some sources within the 28 industrial categories would be too small to satisfy the threshold tonnage specified in section 169(1).<sup>72</sup> These understandings are inconsistent with EPA's "uncontrolled emissions" approach.

We remand the regulations premised on EPA's erroneous construction of section 169(1) for appropriate revision by the agency.<sup>73</sup>

---

<sup>72</sup> *E.g.*, S. Rep. No. 94-717, *supra*, at 23, 123 Cong. Rec. S12809 (July 29, 1976), LHA at 381 (remarks of Sen. McClure); S. Rep. No. 95-127, *supra*, at 96-97, LHA at 2521; 123 Cong. Rec. S9169 (June 8, 1977), LHA at 2667 (remarks of Sen. Muskie); *id.* at S9255 (June 9, 1977) (remarks of Sen. Domenici).

<sup>73</sup> The design capacity of a facility rarely contemplates uninterrupted operation 24 hours per day, 365 days per year. Projected down-time for repair and maintenance or other factors may reduce the hours of operation that are appropriately considered in the calculation of a facility's "potential to emit."

The Court's *per curiam* opinion did not address the issue of whether such planned down-time must, or may, be included in calculating "potential to emit;" and, we do not decide it today. Since the issue was not briefed and argued, we are not in a position to define for this specific question the appropriate response by EPA, given our clarification at a more general level of the meaning of "potential to emit." Industry has petitioned this court to comment on proposed EPA regulations addressing this point, and has registered with us objections to them. The appropriate forum for such discussion is the notice and comment proceeding on those proposed regulations. At a later date, if necessary, recourse might be had to this Court. For now, we indicate only that we did not have this issue in mind when we issued the *per curiam* opinion, and we do not decide it today.

### III. GENERAL EXEMPTION FOR STATIONARY SOURCES EMITTING LESS THAN 50 TONS PER YEAR OF ANY AIR POLLUTANT

Having swept in too many facilities, in our view, by its interpretation of "potential to emit," EPA inserted in its PSD regulations a partial exemption from the preconstruction review and permit requirements of section 165 for all major emitting facilities that emit less than specified amounts,<sup>74</sup> 50 tons on a yearly basis, of any air pollutant. The pertinent amount is to reflect operation at maximum capacity and employing the air pollution controls imposed either by the applicable State Implementation Plan (SIP) or by an enforceable permit.<sup>75</sup>

Petitioners Sierra Club and the Environmental Defense Fund contend that the Act contains no warrant for the Administratively-created exemption, and that even if statutorily permissible, the action was arbitrary and capricious.

EPA does not argue that its 50 ton per year exemption is consistent with the statutory language of the Clean Air Act. Rather, EPA concedes<sup>76</sup> that its exemption allowing sources and modifications under 50 tons per year to forego BACT and air quality assessment is an "expansion" of the limited exemption provided in section 165(b) of the Act.<sup>77</sup> This "expansion" is defended as reflecting EPA's

---

<sup>74</sup> The specified amounts were 50 tons per year, 1,000 pounds per day, or 100 pounds per hour, whichever was most restrictive. For the purposes of this opinion, we shorthand these amounts in terms of the annual figure, 50 tons per year.

<sup>75</sup> 40 C.F.R. §§ 51.24(j)(2), (k)(1)(ii); 52.21(j)(2), (k)(1)(ii) (1978).

<sup>76</sup> 43 Fed. Reg. 26393, Joint Appendix (J.A.) 80.

<sup>77</sup> Section 165(b), 42 U.S.C. § 7475(b) (1978), of the Act provides:

The demonstration pertaining to maximum allowable increases required under section (a)(3) [air quality

judgment that application to such sources of the full pre-construction review and permit process would not be cost-effective and would strain to the limits the agency's resources. Characterizing its approach as "[f]ollowing Congress[']s lead," EPA concluded that the costs to industry and permitting authorities entailed in reviewing an estimated 2,400 PSD applications for sources emitting less than 50 tons would far outweigh the benefit of the "relatively insignificant" reduction in emissions that would result. Consequently, EPA "expanded" the exemption found in section 165(b) to new as well as existing sources, and precluded BACT review as well as air quality review. EPA promised periodic assessments to assure that overall air quality in any pertinent area did not deteriorate beyond the level of any increment.<sup>78</sup>

EPA's "expansion" of the section 165(b) exemption falls well beyond the agency's exemption authority. Moreover, it is premised on a misconstruction of the meaning and motivation of the section. The court has given close consideration to this provision and has toiled to give a reasonable construction to language that is somewhat awkward and which does not easily disclose the function intended for it by Congress. We conclude that the exemption is applicable to major emitting facilities in Class

---

review] shall not apply to maximum allowable increases for class II areas in the case of an expansion or modification of a major emitting facility which is in existence on August 7, 1977, whose allowable emissions of air pollutants, after compliance with subsection (a) (4) [BACT], will be less than fifty tons per year and for which the owner or operator of such facility demonstrates that emissions of particulate matter and sulfur oxides will not cause or contribute to ambient air quality levels in excess of the national secondary air quality standard for either of such pollutants.

<sup>78</sup> 43 Fed. Reg. 26392-93 (1978).

II areas which existed on August 7, 1977,<sup>79</sup> and which become subject to the permit requirements of section 165 because of an expansion or modification that, after application of BACT, results in a net increase of less than 50 tons a year in the emissions from that facility. Those expansions or modifications that come within the exemption of section 165(b) are permitted to operate so long as they will not cause or contribute to ambient air quality levels in excess of the national secondary ambient air quality standard for two pollutants, sulfur dioxide and particulate matter. Were this exemption not in the statute, major emitting facilities, in order to avoid the permit requirements of section 165, would be encouraged to pursue their plans for industrial expansion by establishing small, independent facilities rather than by the more efficient expansion or modification of existing facilities.<sup>80</sup>

---

<sup>79</sup> In *Citizens to Save Spencer County v. EPA*, — U.S. App.D.C. —, — F.2d — (No. 78-1002, 3/27/79), we approved EPA regulations establishing March 19, 1978, as the effective date of the preconstruction review and permit requirements. That date supplanted the effective date specified in section 165(a), the date of enactment of the Clean Air Act Amendments of 1977, August 7, 1977. The date specified in section 165(b) was obviously intended to mirror that of section 165(a). In view of this congressional intention, EPA would have latitude to alter by rule the effective date in section 165(b) to conform with the new effective date of the PSD provision. Absent such rulemaking, however, this Court is constrained to apply the literal terms of the statute.

<sup>80</sup> In EPA's view, section 165(b) applies to a major emitting facility in existence on the date of enactment of the Clean Air Act Amendments that becomes subject to section 165 due to an expansion or modification where the allowable emissions from the *entire* facility have been reduced, after BACT, to less than 50 tons per year. EPA has construed the curious phrase "whose allowable emissions" as referring to emissions from the major emitting facility. Though this construction may be supported by one reading of the syntax,

We have concluded above that EPA erred in defining "potential to emit" by discounting the beneficial effects of air pollution control equipment designed into a facility. For practical purposes, then, the dispute over the 50-ton exemption has become academic. Since "major emitting facilities" subject to section 165 are only those sources which *after controls* emit or have the potential to emit at least 100 tons annually, sources emitting 50 tons per year or less would *ipso facto* be excluded from the PSD requirements. Nevertheless, standard doctrine teaches us that our proper course is to remand this matter for further consideration by EPA.

In view of the possibility that EPA may refashion, rather than terminate, its exemption, we guide our remand by identifying the principles pertinent to an agency's authority to adopt general exemptions to statutory requirements. This discussion is appropriate because the exemption regulations under discussion reflect a misunderstanding by EPA of these principles and of regulatory exemptions based upon assessment of costs and benefits. These principles may have bearing on EPA's reconsideration of this exemption on remand and would appear to have bearing on a number of other EPA actions under review.

---

it is so teratogenetic as to force us to reject it as an incorrect interpretation of the provision. Such a construction would render section 165(b) completely non-functional. The section allows a facility to operate notwithstanding the fact that it would exceed maximum allowable increases for Class II areas. But any major emitting facility in existence on the date of enactment would have a credit within the baseline concentration of *at least* 50 tons per annum because on the baseline date that facility would certainly have been emitting air pollutants at a rate of 50 tons per annum. If that same source reduces its emissions to below 50 tons per annum it is obviously in no danger of exceeding its credit. On such a reading, therefore, section 165(b) would be superfluous.

*Exemptions Born of Administrative Necessity.* Certain limited grounds for the creation of exemptions are inherent in the administrative process, and their unavailability under a statutory scheme should not be presumed, save in the face of the most unambiguous demonstration of congressional intent to foreclose them. But there exists no general administrative power to create exemptions to statutory requirements based upon the agency's perceptions of costs and benefits.

We noted at the outset that we are not concerned here with the "equitable" discretion of agencies to afford case-by-case treatment—taking into account circumstances peculiar to individual parties in the application of a general rule to particular cases, or even in appropriate cases to grant dispensation from the rule's operation. The need for such flexibility in appropriate cases is generally recognized, and enhances the effective operation of the administrative process,<sup>81</sup> though Congress may, of course, restrain the agency by mandating standards from which no variance is permitted.<sup>82</sup> In this case, however, we are presented with an attempt by an agency to promulgate a blanket exemption from statutory requirements. The EPA's action reflects no choice to exercise administrative discretion based on circumstances peculiar to the individual case.

Categorical exemptions from the clear commands of a regulatory statute, though sometimes permitted, are not

---

<sup>81</sup> *E.g.*, *Allegheny-Ludlum Steel Corp.*, 406 U.S. 742, 755 (1972); *Portland Cement Ass'n v. Ruckelshaus*, 158 U.S. App.D.C. 308, 332, 486 F.2d 375, 399 (1973), *cert. denied*, 417 U.S. 921 (1974) ("a regulatory system which allows flexibility and a lessening of firm proscriptions in a proper case, can lend strength to the system as a whole").

<sup>82</sup> *E.g.*, *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 137-39 (1977); *see Weyerhaeuser Co. v. Costle*, — U.S.App.D.C. —, —, 590 F.2d 1011, 1031-37 (1978).

favored. In *FPC v. Texaco Inc.*, 417 U.S. 380 (1974), the Supreme Court held that the FPC had no authority to exempt rates charged by small producers of natural gas from regulation under the just and reasonable standard of the Natural Gas Act. Although it recognized that persuasive arguments had been made that the assumptions underlying natural gas regulations did not obtain for such producers, and that continued regulation might even be counterproductive, the Court declared that its role was not "to overturn congressional assumptions embedded into the framework of regulation established by the Act." *Id.* at 400. Similarly, in *NRDC v. Costle*, 186 U.S.App.D.C. 147, 568 F.2d 1369 (1977), this court held that the EPA lacked the power to exempt categories of point sources from the permit requirements established in section 402 of the Federal Water Pollution Control Act Amendments of 1972. We emphasized: "Courts may not manufacture for an agency a revisory power inconsistent with the clear intent of the relevant statute." *Id.* at 155, 568 F.2d at 1377. In *American Iron & Steel Institute v. EPA*, 568 F.2d 284 (1977), the Third Circuit rejected EPA's blanket exemption of steel plants in the Mahoning Valley from BACT requirements. *Id.* at 306-08. While recognizing that the FWPCA permitted flexibility to accommodate diverse conditions, the court held that "an exemption by regulation from effluent limitations is not a permissible means of accommodating diversity." *Id.* at 307 (footnote omitted; emphasis in the original).

This broad principle that frowns upon categorical administrative exemptions is strict, but is not absolute. Considerations of administrative necessity may be a basis for finding implied authority for an administrative approach not explicitly provided in the statute. The relevance of such considerations to the regulatory process has long been recognized. Courts frequently uphold

streamlined agency approaches or procedures where the conventional course, typically case-by-case determinations, would, as a practical matter, prevent the agency from carrying out the mission assigned to it by Congress. As the Supreme Court recognized in approving the adopting by the FPC of area rate regulation as the practical means of regulating thousands of natural gas producers:

“[C]onsiderations of feasibility and practicality are certainly germane” to the issues before us. . . . We cannot, in these circumstances, conclude that Congress has given authority inadequate to achieve with reasonable effectiveness the purpose for which it has acted.

*Permian Basin Area Rate Cases*, 390 U.S. 747, 777 (1968) (quoting *Bowles v. Willingham*, 321 U.S. 503, 517 (1944)).<sup>53</sup>

Another application of the underlying principle appears in *Morton v. Ruiz*, 415 U.S. 199 (1973). There, the controlling statute provided general assistance benefits under the Snyder Act to Indians living on or near reservations. When Congress did not provide enough funding to provide for both classes, the Bureau of Indian Affairs decided to use the limited funds solely for Indians living on reservations. The Court held that such a policy, operating as it did to curtail the statutory rights of those Indians living near but not on reservations, could not be implemented unless there was compliance with the procedural requirements of notice-and-comment rule-making set forth in the Administrative Procedure Act, 5 U.S.C. § 553. But, the Court acknowledged the sub-

---

<sup>53</sup> *Accord*, *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 132 (1977); *Weinberger v. Hynson, Westcott & Dunning, Inc.*, 412 U.S. 609, 621-22 (1973); *United States v. Storer Broadcasting Co.*, 351 U.S. 192, 202-05 (1956); *Environmental Defense Fund v. EPA*, — U.S.App.D.C. —, —, 598 F.2d 62, 84-85 (1978).

stantive authority of the Secretary to take appropriate action to cope with the administrative impossibility of applying the commands of the substantive statute. *Id.* at 230-31.

The same consideration of administrative need to adjust to available resources would apply where the constraint was imposed not by a shortage of funds but, say, by a shortage of time, or of the technical personnel needed to administer a program.<sup>84</sup>

A corollary principle is observed by the courts when practical considerations make it impossible for the agency to carry out its mandate. Thus, in *NRDC v. Train*, 166 U.S.App.D.C. 312, 510 F.2d 692 (1974), we considered EPA's failure to meet certain statutory deadlines for the promulgation of effluent guidelines under the Federal Water Pollution Control Act. In ordering that the guidelines be issued no later than December 31, 1974, we did not accept EPA's "apprehension that it [would] not be able to publish the great majority of the guidelines" by the deadline. We nevertheless did recognize the possibility of a showing by EPA that publication of some of the guidelines by that date was infeasible. We perceived two "constraints" on the agency:

First, it is possible that budgetary commitments and manpower demands required to complete the guidelines by December 31 are beyond the agency's capacity or would unduly jeopardize the implementation of other essential programs. Second, EPA may be unable to conduct sufficient evaluation of available control technology to determine which is the best practicable or may confront problems in deter-

---

<sup>84</sup> Cf. *American Federation of Labor, et al. v. Marshall, et al.*, 187 U.S.App.D.C. 121, 128-29, 570 F.2d 1030, 1037-38 (1978); *NRDC v. Train*, 166 U.S.App.D.C. 312, 322, 510 F.2d 692, 712 (1974).

mining the components of particular industrial discharges.

166 U.S.App.D.C. at 332, 510 F.2d at 712. We acknowledge the principle that an agency official required "to do an impossibility," should be relieved from sanction. *Id.* at 333, 510 F.2d at 713. But we emphasized that the agency bore a heavy burden to demonstrate the existence of an impossibility:

An equity court can never exclude claims of inability to render absolute performance, but it must scrutinize such claims carefully since officials may seize on a remedy made available for extreme illness and promote it into the daily bread of convenience.

*Id.*

Viewed in its most favorable light, EPA seeks approval of a prospective exemption of certain categories from a statutory command based upon the agency's prediction of the difficulties of undertaking regulation.<sup>53</sup> The agency's burden of justification in such a case is especially heavy. This is not a circumstance of an agency seeking relief from a charge which, after a good faith effort, it has found it cannot perform. It is, rather, an agency seeking vindication of an approach contrary to the explicit statutory design on the basis of its estimate of its lack of capacity to handle the task delegated to it. Before a court sanctions such actions, it will carefully study the governing statute in the manner of *Permian Basin*, to ascertain whether the statute authorizes approaches

---

<sup>53</sup> *Cf.* WNCN Listeners Guild v. FCC, — U.S.App.D.C. —, — F.2d —, Slip Opinion at 19-22 (No. 76-1692, 6/29/79) (*en banc*) (rejecting FCC claim that implementation of Circuit's rules on format diversity would result in an "administrative nightmare"). To the extent the agency relies, in support of its exemption, on substitution of its own analysis of policy considerations for those enunciated by Congress, we must reject its action as trenching on the congressional function.

that deviate from the legislative mandate in response to concerns about feasibility. Thus in *NRDC v. Costle*, *supra*, we rejected EPA's arguments that a categorical exemption of runoff point sources from the National Pollution Discharge Elimination System was necessary because of the infeasibility of developing national effluent limitations applicable to all runoff point sources and the impossibility of processing the literally millions of applications for discharge permits. We found in the statutory scheme a flexibility encompassing devices such as "general" effluent permits (similar to the area rate regulation employed in *Permian Basin*), and this flexibility was sufficient to accomplish the regulatory purpose, thereby alleviating any need to exempt runoff sources entirely.<sup>86</sup>

*Exemptions for De Minimis Circumstances.* Categorical exemptions may also be permissible as an exercise of agency power, inherent in most statutory schemes, to overlook circumstances that in context may fairly be considered *de minimis*. It is commonplace, of course, that the law does not concern itself with trifling matters,<sup>87</sup> and this principle has often found application in the administrative context.<sup>88</sup> Courts should be reluctant to

---

<sup>86</sup> A similar administrative approach, supported by the doctrine of necessity, is the deferral of regulation in individual instances until the aggregation of these instances surpasses a reasonable threshold. The agency's burden of justification for such an approach is substantially less than that required when the agency seeks to exempt rather than defer regulation.

<sup>87</sup> See, e.g., *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 99 S. Ct. 3055, 3076 n.29 (1979) (Indian fishing rights); *Pennsylvania v. Mimms*, 434 U.S. 106, 110 (1977) (search and seizure); *Ingraham v. Wright*, 430 U.S. 651, 674 (1977) (due process liberty interest); *Sniadach v. Family Finance Corp.*, 395 U.S. 337, 342 (1969) (Harlan, J., concurring).

<sup>88</sup> See, e.g., *FPC v. Texaco, Inc.*, 417 U.S. 380, 399 (1974); *Volkswagenwerk, A.G. v. FMC*, 390 U.S. 261, 276-77 (1968);

apply the literal terms of a statute to mandate pointless expenditures of effort. As we wrote in *District of Columbia v. Orleans*, 132 U.S.App.D.C. 139, 141, 406 F.2d 957, 959 (1968), "[t]he 'de minimis' doctrine that was developed to prevent trivial items from draining the time of the courts has room for sound application to administration by the Government of its regulatory programs . . ." The ability, which we describe here, to exempt *de minimis* situations from a statutory command is not an ability to depart from the statute, but rather a tool to be used in implementing the legislative design.<sup>89</sup>

Determination of when matters are truly *de minimis* naturally will turn on the assessment of particular circumstances, and the agency will bear the burden of making the required showing. But we think most regulatory statutes, including the Clean Air Act, permit such agency showings in appropriate cases.

While the difference is one of degree, the difference of degree is an important one. Unless Congress has been extraordinarily rigid, there is likely a basis for an implication of *de minimis* authority to provide exemption when the burdens of regulation yield a gain of trivial or no value. That implied authority is not available for a situation where the regulatory function does provide

---

Monsanto Company v. Kennedy, — U.S.App.D.C. —, — F.2d —, — (No. 77-2023, 11/6/79); *United Glass & Ceramic Workers v. Marshall*, 189 U.S.App.D.C. 240, 242, 584 F.2d 398, 440 (1978); *Marine Space Enclosures, Inc. v. FMC*, 137 U.S.App.D.C. 9, 16, 420 F.2d 577, 584 (1969).

<sup>89</sup> In this respect, the principle is a cousin of the doctrine that, notwithstanding the "plain meaning" of a statute, a court must look beyond the words to the purpose of the act where its literal terms lead to "absurd or futile results." *United States v. American Trucking Ass'ns*, 310 U.S. 534, 543 (1939); *District of Columbia v. Orleans*, 132 U.S.App.D.C. 139, 141, 406 F.2d 957, 959 (1968).

benefits, in the sense of furthering the regulatory objectives, but the agency concludes that the acknowledged benefits are exceeded by the costs. For such a situation any implied authority to make cost-benefit decisions must be based not on a general doctrine but on a fair reading of the specific statute, its aims and legislative history. Congress, in section 165(b), permitted a narrow exemption—for modifications, and from air quality review only; this provides no basis for EPA to exercise a “revisory power” to exclude new sources as well as modifications, and to extend the exemption to BACT review in addition to air quality review.

We do not here extend our analysis of exemption authority for other situations,<sup>90</sup> beyond taking note that our ruling that there is a narrow exemption authority has not been challenged in any of the petitions for reconsideration, and has been invoked in other contexts by several

---

<sup>90</sup> For example, industry petitioners raise the issue that mercury is only a “trace” emission from electric generating plants. See Industry Petitioners’ Petition for Rehearing on the Application of PSD Requirements to Pollutants Other than Sulfur Dioxide and Particulates at p. 15.

The court does not agree with industry petitioners that the fact that emission of mercury is not within the group of sources covered by the national emissions standards for hazardous air pollutants (40 C.F.R. § 61.50) means that mercury is not a pollutant subject to regulation.

It may be that, assuming EPA considers it in the public interest, it would be able to craft a *de minimis* exemption regulation that would have the result sought by petitioners. The matter is not now presented to us in a manner permitting authorization declaration.

Apart from its limited *de minimis* exemption authority, EPA has flexibility to consider costs and benefits in deciding what is “best available control terminology” for any situation.

of the parties.<sup>91</sup> As to the context of the "50-ton exemption," if this has practical importance notwithstanding our "potential to emit" ruling, EPA must take into account in any action following the remand that this exemption authority is narrow in reach and tightly bounded by the need to show that the situation is genuinely *de minimis* or one of administrative necessity.

#### IV. PROTECTION OF THE INCREMENTS

The regulations provide that once it is determined that a state implementation plan "is substantially inadequate to prevent significant deterioration or that an applicable increment is being violated," then the SIP must "be revised to correct the inadequacy or the violation."<sup>92</sup> We rule that EPA has authority under the statute to prevent or to correct a violation of the increments, but the agency is without authority to dictate to the States their policy for management of the consumption of allowable increments.

The PSD part of the statute, by its title and by its terms, is designed to prevent significant deterioration of air quality in the nation's "clean air areas"—in general, those areas that have or are presumed to have air quality

---

<sup>91</sup> Respondents' Response to Industry Petitioners' Motion for Clarification and Petitions for Rehearing and for Reconsideration at 20 (August 2, 1979); Sierra Club Brief in Response to Industrial Petitioners' Motion for Rehearing and Motion for Clarification and to the Environmental Protection Agency's Petition for Stay of Issuance of Mandate at 6-7 (August 2, 1979); Response of the District of Columbia to Industry Petitioners' Petition for Rehearing on the Application of PSD Requirements to Pollutants Other Than Sulfur Dioxide and Particulates at 2 (August 2, 1979).

<sup>92</sup> 40 C.F.R. § 51.24(a) (3) (1978).

better than that specified in the applicable primary and secondary national ambient air quality standards (NAAQS).<sup>93</sup> The fundamentals of the statutory approach include differentiation within the clean air areas of Class I, II, and III areas,<sup>94</sup> and specification for each class of areas of maximum allowable increases ("increments") in pollution concentrations for particulate matter and sulfur dioxide,<sup>95</sup> with provision for the Administrator to promulgate allowable increments or similar limitations for other pollutants governed by NAAQS.<sup>96</sup> These provisions set as the threshold of "significant deterioration" for each pollutant in each area the lower of the allowable increment of the applicable NAAQS,<sup>97</sup> and the emphatic goal of the PSD provisions is to prevent those thresholds from being exceeded. It is evident that the principal mechanism for monitoring the consumption of allowable increments and for preventing significant deterioration is the preconstruction review and permit process required for new or modified major emitting facilities by the provisions of section 165. However, we cannot agree with industry's contention that section 165 provides the exclusive mechanism for protection of the increments. The Administrator has authority beyond the provisions of section 165 to prevent or to remedy a violation of the thresholds specified in the Act.

The statutory provisions central to our conclusion are sections 161 and 163(a). Section 161 provides in pertinent part:

---

<sup>93</sup> C.A.A. at § 107(d) (1) (D) & (E); 42 U.S.C. § 7407(d) (1) (D) & (E) (1978).

<sup>94</sup> C.A.A. at §§ 162, 163; 42 U.S.C. §§ 7472, 7473 (1978).

<sup>95</sup> C.A.A. at § 163, 42 U.S.C. § 7473 (1978).

<sup>96</sup> C.A.A. at § 166; 42 U.S.C. § 7476 (1978).

<sup>97</sup> C.A.A. at § 163(b) (4); 42 U.S.C. § 7473(b) (4) (1978).

each applicable implementation plan shall contain emission limitations and such other measures as may be necessary, as determined under regulations promulgated under this part, to prevent significant deterioration of air quality in each [clean air area].<sup>98</sup>

Section 163 provides in part:

each applicable implementation plan shall contain measures assuring that maximum allowable increases over baseline concentrations of, and maximum allowable concentrations of [sulfur oxides and particulates] shall not be exceeded.<sup>99</sup>

On their face, these provisions establish the thresholds as limitations that are not to be exceeded and contemplate that state implementation plans shall include such measures "as may be necessary" to ensure the observance of this command. The section 165 permit process alone does not ensure that maximum concentrations or allowable increments will not be exceeded. Significant deterioration may occur due to increased emissions from unregulated minor sources and major emitting facilities grandfathered out of the permit process, due to the use of different models to calculate increment consumption, due to the discovery through monitoring that limitations inadvertently have been exceeded, due to redesignation of an area to a more restrictive class, or due to allocation through administrative error of too many permits. Nothing in the plain language of the statute limits the measures in the state implementation plan to the preconstruction permit process. The legislative history reflects an understanding that other measures might be required—and are within the authority conveyed by the Act.

The Conference Report states that the "House provision requiring that the State Implementation Plan must con-

---

<sup>98</sup> 42 U.S.C. § 7471 (1978).

<sup>99</sup> 42 U.S.C. § 7473(a) (1978).

tain measures to insure that significant deterioration, as defined will be prevented was accepted.”<sup>100</sup> The House Report, in discussing its provision, stated: “This preconstruction review process should help minimize the need for enforcement or other actions under the State implementation plan requiring additional postconstruction control measures on the permitted plants.”<sup>101</sup> And at another point: “States would not be required to apply the permit process to smaller new sources, although the State plan would still be required to contain such measures as are necessary to prevent significant deterioration.”<sup>102</sup> Implicit in each statement is a contemplation that measures under the Act include more than the pre-construction process.

Industry representatives do not successfully counter the force of the statute and the legislative history. They argue that section 161 refers to incorporation into state plants of such other measures as may be necessary “as determined under regulations promulgated under this part,” and they assert that the only regulations mentioned in the PSD part are those identified as relating to the preconstruction permitting process. This argument overlooks the Administrator’s general rulemaking authority under section 301 of the Act to “prescribe such regulations as are necessary to carry out his functions under this Act,” for a regulation promulgated under this general authority to ensure compliance with section 161 is a regulation promulgated under the PSD part. Industry petitioners also rely on those sections of the Act that provide for waiver provisions which, conceivably, could allow increments to be exceeded. The waiver has vitality

---

<sup>100</sup> H. Rep. No. 95-564, 95th Cong., 1st Sess. 153 (1977), LHA at 3047.

<sup>101</sup> H. Rep. No. 95-294, 95th Cong., 1st Sess. 145 (1977), LHA at 1615.

<sup>102</sup> *Id.* at 171, LHA at 1641.

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

Finally, industry petitioners argue that the EPA regulations that preceded passage by Congress of the PSD provisions undertook to prevent significant deterioration through preconstruction review only. And they further agree, correctly, the legislative history gives no indication that this fundamental aspect of the prior regulatory approach was being altered. But this omission and negative implications do not offset the language of the Act and the affirmative implications of the House Report that enforcement measures were contemplated beyond preconstruction review. Though the Act is patterned in many respects on the pre-existing regulatory approach, there are many differences. Congress did not in each instance compare the legislation with the reach of the prior regulations, and we cannot view as controlling its failure to do so in this instance.

The challenged regulation is interpretative in nature.<sup>103</sup> It simply states the proposition that SIPs must make provision to ensure that violations of the increments of maximum allowable concentrations do not occur, and, if they have occurred, to ensure that steps will be taken to correct the violation. EPA has furnished no guidelines to the states in this regard; there is no requirement that specified corrective measures be employed. Industry evidences a concern that when EPA does promulgate guide-

---

<sup>103</sup> As an interpretative rule, the challenged regulation was exempt from the notice and comment requirements of the APA and of section 307(d) of the Clean Air Act. 5 U.S.C. § 553 (b) (A) (1976); 42 U.S.C. § 7607(d) (1978). Thus there is no merit to the contention of industry that the regulation was promulgated without due procedural regularity.

lines or require specific measures, certain operating facilities will be unfairly disadvantaged. Obviously, such considerations are not ripe for review at this time. We may confirm that EPA has authority to require inclusion in state plans of provision for the correction of any violation of allowable increments or maximum allowable concentrations, and may even require, in appropriate instances, the relatively severe correctives of a rollback in operations or the application of retrofit air pollution control technology. At oral argument, EPA assured the court that any such measures would be employed in a reasonable fashion on the basis of a rule of general applicability, or by some reasonable attribution of responsibility for the violation. Any regulations promulgated will be reviewed with such considerations in mind.

The environmental groups have petitioned us to require EPA to promulgate guidelines detailing the manner in which States may permit consumption of the available increments. They also seek to have EPA set aside some portion of the available increments to ensure that current development does not inadvertently cause a violation of the maximum thresholds. EPA has evidenced an intention to promulgate guidelines to help the states manage the allocation of available increments. This is an appropriate step. But this is not to say that the agency may prescribe the manner in which states will manage their allowed internal growth. In the allocation of responsibilities made by Congress, maximum limitations have been set. These must be observed by the states, but assuming such compliance, growth-management decisions were left by Congress for resolution by the states.

#### V. SOURCES LOCATED IN NON-ATTAINMENT AREAS

Section 165(a)<sup>104</sup> provides that a PSD permit is required before a major emitting facility "may be con-

---

<sup>104</sup> 42 U.S.C. § 7476(a) (1978).

constructed in any area to which this part applies." Industry petitioners contend that this language limits the application of the PSD review requirements to sources constructed in certain *locations*, and that those locations are the statutorily defined "clean air areas."<sup>105</sup> On this premise, industry petitioners argue that section 165 does not apply to sources located in the so-called "non-attainment" areas.<sup>106</sup> EPA, on the other hand, takes the position that the identification of "clean air" and "non-attainment" areas in section 107(d)<sup>107</sup> of the Act are only a starting point for the planning process that will lead to revised state implementation plans, that these identifications do not shape the "area" to which the PSD review requirements apply, and that preconstruction review must precede the construction anywhere of a major emitting facility which will adversely affect the air quality of an area to which this part applies. EPA's regulations extend the permit requirements of section 165 to all sources, wherever located, if the emissions from the source have an *impact* on any clean air area.<sup>108</sup> The issue, then, is whether a source becomes subject to the PSD review process because of its *location* within an area to which this part applies, or because of its *impact* upon the air quality of one.

---

<sup>105</sup> In this context, the term "clean air area" refers to those air quality control regions in which the ambient air quality does not exceed the applicable NAAQS, which there is insufficient data to make such a determination. See C.A.A. at §§ 161, 163(b), 42 U.S.C. §§ 7471, 7473(b) (1978). The clean air areas are identified pursuant to C.A.A. at §§ 107(d) (1) (D), (E), 42 U.S.C. §§ 7407(d) (1) (D), (E) (1978).

<sup>106</sup> "Non-attainment" areas are defined in section 171(2) as those air quality control regions designated, under sections 107(d) (1) (A)-(C), as regions that fail to meet the standards of an applicable NAAQS.

<sup>107</sup> 42 U.S.C. § 7407(d) (1978).

<sup>108</sup> 40 C.F.R. §§ 51.24(i) (1), 52(i) (1) (1978).

EPA discovers in the purposes of the Clean Air Act and the 1977 Amendments an authority sufficient to justify its regulation applying section 165 according to impact. It asserts that such a reading is necessary to prevent the significant deterioration of air quality in fact. Section 160(4) sets forth as a purpose of Part C (PSD) "to assure that emissions from any source in any States" (regardless of whether the location of the source is designated an attainment area) "will not interfere with" any portion of the PSD plan for any other State. Clearly, EPA argues, the concern is with the air quality in clean air areas, not with the location of the source affecting that air quality. Finally, the agency contends, Section<sup>109</sup> 161 incorporates the purpose set out in Section 101(b) (1),<sup>110</sup>— to *protect* and enhance the quality of the nation's air resources—which prompted this Court's holding in *Sierra Club v. Ruckelshaus*.<sup>111</sup>

EPA is correct that portions of the legislative history indicate that the purposes of the Act would best be served by an extension of the PSD provisions to *any source*, the emissions from which adversely affect the non-degradation scheme.<sup>112</sup> But this alone does not present the situation we faced in *Sierra Club*, where Congress had clearly articulated a purpose but had remained silent as to the means for effectuating that purpose. Nor do we have here a case where two provisions of the Act are in irreconcilable conflict, the situation we faced in *Citizens to*

---

<sup>109</sup> 42 U.S.C. § 7471 (1978).

<sup>110</sup> 42 U.S.C. § 7401(b) (1) (1978).

<sup>111</sup> 344 F. Supp. 253 (D.D.C. 1972), *aff'd per curiam*, 4 ERC (D.C. Cir. 1972), *aff'd by a equally divided court sub nom. Fri v. Sierra Club*, 412 U.S. 541 (1973).

<sup>112</sup> See, e.g., H. Rep. No. 95-564, 95th Cong., 1st Sess. 151 (1977); H. Rep. No. 95-294, 95th Cong., 1st Sess. 9, 145, 151-52 (1977).

*Preserve Spencer County v. EPA*.<sup>113</sup> Rather, we have here an instance where the Congress, presumably after due consideration, has indicated by plain language a preference to pursue its stated goals by what EPA asserts are less than optimal means. In such a case, neither this court nor the agency is free to ignore the plain meaning of the statute and to substitute its policy judgment for that of Congress.

After careful consideration of the statute and the legislative history, we must accept the contention of the industry petitioners that the phrase "constructed in any area to which this part applies" limits the application of Section 165 to major emitting facilities to be constructed in certain *locations*. But, we reject the proposition that the only statutory means available to fulfill the purposes of Part C are the permit provisions of § 165.

The plain meaning of the inclusion in section 165 of the words "any area to which this part applies" is that Congress intended location to be the key determinant of the applicability of the PSD<sup>7</sup> review requirements. That this is the correct interpretation is underscored by the inclusion of the same words in section 165(a)(3)(A), and by the precise language employed by Congress in those provisions where its concern was more source (rather than area) specific.<sup>114</sup>

The legislative history supports our interpretation. The language of the pertinent provision, section 165(a), derives from the original bill reported to the Senate in 1976 by the Public Works Committee. That bill stated in pertinent part that "[n]o major emitting facility . . .

<sup>113</sup> — U.S.App.D.C. —, — F.2d — (No. 78-1002, 3/27/79).

<sup>114</sup> See, e.g., C.A.A. at § 169A(b)(2)(a), 42 U.S.C. § 7479A(b)(2)(a) (1978); C.A.A. at § 165(a)(7), 42 U.S.C. § 7475(a)(7) (1978); C.A.A. at § 165(e)(1), 42 U.S.C. § 7475(e)(1) (1978).

may be constructed in any area designated under this subsection."<sup>115</sup> That plainly means location in a designated (clear air) area. In 1977, when Senator Muskie introduced the bill,<sup>116</sup> he said, with respect to its PSD provisions, that it was "in every significant detail identical to last year's bill."<sup>117</sup> When the Senate provision limited the PSD permit process to sources in areas "designated under this subsection," it was expressly limiting that process to sources located in the areas subject to PSD protection. The Conference bill maintained the principle of the Senate version in that regard, but substituted for the Senate provisions the House provisions which designated the areas subject to PSD protection. Because of this combined approach, the conferees could not refer to areas "designated under this subsection" (or even "section") because, unlike the Senate bill, the PSD provisions of the Conference bill comprised several sections (§§ 160-169 of Part C). Accordingly, in order to make the intended reference, the language was changed to area "to which this part applies." This change in language preserved location as a determinant of the applicability of section 165. Therefore, we conclude, as noted above,<sup>118</sup> that the phrase "constructed in any area to which this part applies" limits the application of section 165 to major emitting facilities to be constructed in certain locations.

EPA sought to further extend the reach of the PSD review provisions. But, to so extend EPA's authority is to ignore the fact that section 165(a) defines those major emitting facilities which become subject to its permit re-

---

<sup>115</sup> Senate Bill, S. 3219, 94th Cong., 2d Sess. (1976).

<sup>116</sup> Senate Bill, S. 252, 95th Cong., 1st Sess. (1977).

<sup>117</sup> 123 Cong. Rec. S9162 (daily ed., June 8, 1977).

<sup>118</sup> See also Remarks of Senator Hart, 122 Cong. Rec. S12470 (daily ed., July 26, 1976); Remarks of Senator Muskie, 122 Cong. Rec. S13316 (daily ed., August 4, 1978).

quirements—and does so by virtue of location in a designated area.

EPA argued initially, and in its petition for reconsideration, that limiting the application of the permit requirements of section 165 solely to sources within clean air areas may not provide an adequate solution to a particular pollution problem associated with those areas—the problem of interstate pollution. In our *per curiam* opinion, we indicated agreement with the position advanced by EPA, noting that the problem of interstate pollution was indeed a serious concern not dealt with adequately by the permit requirement. It was our apprehension that Congress did not intend such a major pollution problem to go untreated, and this led us to discover within the statute a basis for the exercise by EPA of rulemaking authority to extend the permit requirement of section 165 beyond its literal limitations.

Our review of the petitions for reconsideration submitted by both the industry petitioners and EPA has led us to conclude that sections other than section 165 are available to fulfill that congressional objective of need to cope with the problem of interstate pollution.

Section 110(a)(2)(E)(i) provides a vehicle for implementing the congressional objective of abating substantial interstate air pollution. That provision requires that an SIP shall contain “adequate provisions . . . prohibiting any stationary source within the State from emitting any air pollutant in amounts which will . . . interfere with *measures required to be included in the applicable implementation plan for any other state* under [the PSD part].” The phrase “measures required to be included” in an SIP clearly incorporates at least (1) the absolute emissions limitation for each pollutant for which increment limitations have been set under section 163 or 166, (2) the monitoring and modeling requirements of

section 165(e), and (3) "such other measures as may be necessary, as determined by regulations promulgated under [part C]," as provided in section 161. EPA's authority, under § 110(a)(2)(E)(i), to prevent interstate interference with these measures—to prevent, in other words, the industry of one state from interfering with the PSD program of another—is clear. And, it does not depend upon the permit process of section 165 for its effectiveness.

So also, section 126 of the Act is a vehicle for abating substantial interstate air pollution independent of permitting. That provision allows that, upon petition by a state or political subdivision, the EPA may determine that a source in a neighboring state "emits or would emit any air pollutant in violation of the prohibition of section 110(a)(2)(E)(i)." If such a violation is found, the remedy provided by section 126(c)—which remedy is applicable "[n]otwithstanding any permit which may have been granted by the State"—is not denial or revocation of a permit, but a prohibition against construction or operation for a new source and a prohibition against continued operation for an existing source, unless EPA authorizes continued operation for up to three years while the source is being brought into compliance with § 110(a)(2)(E)(i).

The industry petitioners acknowledged the obligation imposed upon them by sections 110 and 126 in their Response to EPA's Petition for Rehearing.

Even if § 126(a)(1)(A) does not mandate SIPs to require notice from sources in nonattainment areas, as we believe, that does not relieve such sources from the requirements of § 110(A)(2)(E)(i) that SIPs contain "adequate provisions" preventing any source from emitting pollutants in amounts which will interfere with the PSD measures required to be included in the SIPs of other States. Nor does it

relieve them from the provisions of § 126(b) for enforcement of § 110(a)(2)(E)(i). If notice similar to that otherwise provided in § 126(a) should be necessary to prevent violation of § 110(a)(2)(E)(i) by a source in a nonattainment area which would adversely affect air quality in a clean-air area of another State, we do not perceive any reason why such notice could not be required pursuant to § 110(a)(2)(E)(i) even though not required by § 126(a)(1)(A).<sup>119</sup>

We hold that both section 110(a)(2)(E)(i) and section 126(c) give EPA the authority to require that SIP's contain provisions sufficient to address the problem of interstate air pollution. We find that section 126(a) gives the agency the authority to require that SIP's include notice provisions designed to trigger the mechanisms required by section 110(a)(2)(E)(i) or section 126(c). And we find that section 126(b) is an additional means to activate those mechanisms by permitting any state or political subdivision to petition the Administrator for a finding that "*any* major source emits or would emit *any* air pollutant in violation of the prohibition of section 110(a)(2)(E)(i)." <sup>120</sup>

To the extent that there is any gap in those notice provisions, section 114 is available. It provides that for the purpose of carrying out the provisions of the Act "the Administrator may require any person who owns or operates *any* emission source . . . to (A) establish and maintain such records, (B) make such reports, (C) install, use, and maintain such monitoring equipment or methods, (D) sample such emissions . . . , and (E) provide such other information, as he may reasonably re-

---

<sup>119</sup> Response of Industry Petitioners to Respondents' Petition for Rehearing at 12 (filed August 2, 1979).

<sup>120</sup> 42 U.S.C. § 7426(b) (1978) (emphasis added).

quire . . .”<sup>121</sup> Thus, section 114 authorizes the Administrator to require any facility to provide notice of an interstate impact on air quality, be it or some other source the cause of the impact.

Section 161<sup>122</sup> provides still another vehicle for implementing the congressional objective of abating substantial interstate air pollution. We realize that, at oral argument, EPA disclaimed invocation of section 161 rulemaking authority to address this problem. However, that disclaimer came at a time when, in the agency’s view, section 165, by its own terms, applied PSD review to sources of interstate air pollution impacting on clean air areas. Given such a view of section 165, the agency’s disclaimer of authority under section 161 was reasonable. We have now held that section 165 does not, by its own terms, apply to sources located outside of clean air areas. In this light, and in view of the legislative desire to prevent interstate impacts, the authority granted to the EPA by the plain language of section 161—“each [SIP] shall contain emission limitations *and such other measures as may be necessary, as determined under regulations promulgated under this part*, to prevent significant deterioration of air quality [in clean air areas]”<sup>123</sup>—grants to the Administrator the power to promulgate rules requiring that SIPs adequately address the problem. We hold that the Administrator may promulgate rules to require the inclusion of such provisions in the SIP of the state whose clean air area is affected, of the state which is the source of the adverse impact, or of both.

This is not a case where Congress has crafted a specified set of measures to solve a problem, so that additional measures in agency-initiated rules can be deemed

---

<sup>121</sup> 42 U.S.C. § 7414 (1978) (emphasis added).

<sup>122</sup> 42 U.S.C. § 7471 (1978).

<sup>123</sup> *Id.* (emphasis added).

not "necessary." On the contrary, this is a case where the congressional objective to meet the problem of substantial interstate pollution is clear, and the statutory measures addressed to it are modest. Accordingly, a determination that supplemental measures are "necessary,"<sup>124</sup> for the purpose of triggering rulemaking authority under section 161, is within the authority granted by Congress, even though generally the statute relies on measures specified by Congress rather than a contemplation of broad agency rulemaking discretion.

In sum, though it is clear from the legislative history that Congress intended to address the problem of interstate pollution, we are of the view that the Administrator has authority to administer section 110(a)(2)(E)(i) and section 126(b) and (c) in conjunction with section 114 and section 126(a) so as to require SIPs to address the problem. We are also of the view that EPA has additional authority, pursuant to rulemaking authority granted in section 161, to promulgate regulations requiring that SIPs include measures to abate interstate adverse impacts on clear air areas.

There are provisions in the Act, such as those of section 165(d)(2), which evidence a solicitude for the maintenance of air quality in federal lands but there are none which justify the application of the permit requirements of section 165 to sources not located in, but impacting upon, such areas. Section 169A is available to protect visibility in Class I areas where visibility is an important characteristic, and the Administrator may choose to invoke the rulemaking authority granted to him by section 161 to address this problem. We find no basis for reading into section 165 an application of the PSD review provi-

---

<sup>124</sup> Even giving that term an expansive reading, *see, e.g.*, *Niagara Mohawk Power Corporation v. FPC*, 126 U.S.App. D.C. 376, 379 F.2d 1531 (1967).

sions to sources in non-attainment areas that impact upon the air quality of federal lands and Indian reservations.

In conclusion, based upon our analysis of the Act, we vacate EPA's regulations extending the permit requirements of section 165 to all sources, wherever located, if the emissions from the source have an impact on any clean air area.<sup>125</sup> We do so because they were promulgated pursuant to EPA's reading of Section 165, a reading which we have rejected.<sup>126</sup>

Based upon this analysis, we are no longer confident that this statute provides a predicate for the court to put a "gloss" on section 165 sufficient to support EPA rule-making authority to apply the *permit* requirements of that section to major emitting facilities located in non-attainment areas in one state that impact adversely upon clean air areas within a neighboring state.

EPA, in a petition for reconsideration, correctly points out that emissions from facilities located in a non-attainment area within a state which impact adversely on the air quality of federal lands and Indian reservations raise similar problems of interjurisdictional pollution as are presented in the context of interstate pollution.

#### VI. REGULATION OF FUGITIVE EMISSIONS, INCLUDING FUGITIVE DUST

In the general definitional section of the Act, section 302(j),<sup>127</sup> Congress employed the term "fugitive emissions" to refer to one manner of emission of any air

<sup>125</sup> 40 C.F.R. §§ 51.24(i)(1), 52.21(i)(1) (1978).

<sup>126</sup> Should the Administrator determine that the provisions of sections 110, 126, and 114 are insufficient to address the problem of interstate pollution that impacts upon clean air areas, he may use his rulemaking authority under section 161 to promulgate new regulations. Those regulations will, of course, be subject to review.

<sup>127</sup> 42 U.S.C. § 7602(j) (1978).

pollutant. As commonly understood, emissions from an "industrial point source" include emissions emanating from a stack or from a chimney. By contrast, "fugitive emissions," are emissions from a facility that escape other than from a point source. Principal among the fugitive emissions is "fugitive dust," a term referring to fugitive emissions by particulate matter.<sup>128</sup> EPA's regulations encompass sources of fugitive emissions (including fugitive dust) as well as industrial point sources. A subsequent section of this opinion<sup>129</sup> confirms EPA's authority to regulate sources of fugitive emissions and discusses the factors that delimit the agency's discretion to define a "source" or an "emitting facility" of fugitive emissions.

EPA's regulation of fugitive emissions has been of special concern to the mining and forestry industries which contend, without serious opposition, that they are incapable of meeting the strict limitations on the emission of particulate matter set by the PSD provisions. The terms of section 165, which detail the preconstruction review and permit requirements for each new or modified "major emitting facility" apply with equal force to fugitive emissions and emissions from industrial point sources.<sup>130</sup> EPA assumed that there is similarly no distinction to be made between fugitive emissions and emissions from industrial point sources when determining whether a source is a major emitting facility within section 169(1)<sup>131</sup> and thus subject to section 165. This assumption led the agency to conclude that sources of fugitive dust satisfying

---

<sup>128</sup> Though we have discerned the general parameters of these terms, EPA has latitude to provide reasonable, though more specific, definitions along similar lines, so long as they comport with congressional intent.

<sup>129</sup> 42 U.S.C. § 7475 (1978).

<sup>130</sup> See section III of Judge Wilkey's Part of this opinion.

<sup>131</sup> 42 U.S.C. 7479(1) (1978).

the annual tonnage threshold specified in section 169(1) are major emitting facilities. But, solicitude for the plight of the extractive and silvaculture industries motivated EPA to promulgate a partial exemption for sources of fugitive dust, an exemption which industry argues is inadequate and environmental groups contend is beyond agency authority.<sup>132</sup>

EPA is correct that a major emitting facility is subject to the requirements of section 165 for each pollutant it emits irrespective of the manner in which it is emitted. However, a source emitting large quantities of fugitive emissions may remain outside the definition of major emitting facility and thus may not be subject to the requirements of section 165.

The origin of this distinction lies in section 302(j) of the Act, which provides:

Except as otherwise expressly provided, the terms "major stationary source" and "major emitting facility" mean any stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant (including any major emitting facility or source of fugitive emissions of any such pollutant, as determined by rule by the Administrator).<sup>133</sup>

EPA construes this provision as a general definition of "major emitting facility" that is totally supplanted for the PSD provisions by the definition of major emitting

<sup>132</sup> 40 C.F.R. §§ 51.24(k)(5), 52.21(k)(5) (1978). The regulation maintains the requirement that such sources apply best available control technology (BACT) as defined by section 169(3), 42 U.S.C. § 7479(3) (1978), but exempts them from the otherwise-required showing that particulate emissions from the facility will not exceed either the applicable national ambient air quality standards (NAAQS) or the allowable increments.

<sup>133</sup> 42 U.S.C. § 7602(j) (1978).

facility contained in section 169(1). Such is not the case. Section 302(j) is a definition of "major emitting facility" in quantitative terms. That quantitative term is set at the threshold of 100 tons per year. The calculation of the 100 ton figure includes "fugitive emissions of any such pollutant, *as determined by rule by the Administrator.*" Thus, section 302(j) specifically attaches a rule-making requirement for the inclusion of fugitive emissions in the threshold calculation. The legislative history of this rulemaking provision is sparse, but it well may define a legislative response to the policy considerations presented by the regulation of sources where the predominant emissions are fugitive in origin, particularly fugitive dust. Whatever the motivation of the "rule" provision of 302(j), its existence is unmistakable. Even if the origin of this provision is fortuitous, the provision may be welcomed as serendipitous, for it gives EPA flexibility to provide industry-by-industry consideration and the appropriate tailoring of coverage.

We must still ask where the special rulemaking provision of section 302(j) has been supplanted by the definition, in section 169(1), of "major emitting facility." We consider section 169(1) to be governed by the rulemaking requirement of section 302(j). Section 302(j) is a general definitional section defining terms "when used in this Act"—and 302(j) begins: "Except as other *expressly* provided."

Section 169(1) does expressly make a substantial modification in the 302(j) definition of "major." The 100 ton-per-annum threshold is expressly retained only for sources within 28 listed categories. For "any other source," the threshold is expressly raised to 250 tons per annum.

However, section 169(1) has no "express" provision modifying section 302(j)'s "rule" requirement as to fugitive emissions. Therefore under section 169(1) controlled in this respect by section 302(j), the calculation of the

threshold quantity emissions may include fugitive emissions only as determined by rule by the Administrator.

As we have noted, the regulations under review include a partial exemption from statutory permit requirements for major emitting facilities of fugitive dust. In light of our discussion in section III of this opinion, we have reason to doubt whether EPA possesses the statutory authority to promulgate the exception in this manner, but we need not resolve the question. The exemption rule was based on a premise that we have held to be erroneous—namely, that the statute of its own momentum subjects major sources of fugitive emissions to PSD preconstruction review and permit requirements. In light of our interpretation of section 302(j), and in accordance with our discussion as to the limits of EPA general exemption authority, we vacate the exemption for sources of fugitive dust and remand for further consideration.

The statutory scheme provides EPA with a mechanism for accomplishing its objectives of partially exempting fugitive dust emitted by major emitting facilities from the requirements of section 165 by appropriate rulemaking pursuant to section 111.<sup>134</sup>

---

<sup>134</sup> EPA has discretion to define the pollutant termed "particulate matter" to exclude particulates of a size or composition determined not to present substantial public health or welfare concerns. Such "excluded particulates" would remain "air pollutants" within the meaning of the Act, section 302(g), but would be dropped from the list of pollutants compiled by the EPA Administrator under section 108(a)(1)—a list comprised of air pollutants the "emissions of which, in his judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare." Since national ambient air quality standards may exist only for those pollutants lists under section 108(a)(1), "excluded particulates" would not be subject to NAAQS. See

C.A.A. at §§ 108(a) (1), (2), 109, 302(g), 42 U.S.C. §§ 7403 (1), (2), 7409, 7602(g) (1978).

However, under section 111(b) (1) (A) the Administrator must compile a list of categories of stationary sources that in his judgment "[cause or contribute] significantly to air pollution which may reasonably be anticipated to endanger public health or welfare." This list could include sources of "particulate matter," as newly defined, even though the great preponderance of particulates emitted by such sources have become "excluded particulates." A source may "significantly" contribute to air pollution on account of its emissions of "particulate matter" even though the quantities of "particulate matter" emitted fall well below the tonnage threshold that would qualify such a source, due to the emissions of that pollutant, as a major emitting facility. Section 111(d) (1) grants authority to the Administrator to establish standards of performance for any air pollutant emitted by a source on the list compiled under section 111(b) (1) (A). *See also* C.A.A. at § 111(a) (1) (C). Thus, due to the difference in focus of sections 108 and 111—one on pollutants and the other on sources—a standard of performance might be developed governing "excluded particulates" though no NAAQS has been promulgated. Once a standard of performance has been promulgated for "excluded particulates," those pollutants become "subject to regulation" within the meaning of section 165(a) (4), 42 U.S.C. § 7475(a) (4) (1978), the provision requiring BACT prior to PSD permit approval.

EPA has authority by rulemaking to incorporate fugitive emissions, including fugitive dust, in the calculation of tonnage thresholds required to qualify a stationary source as a major emitting facility. *See* C.A.A. at § 302(j), 42 U.S.C. § 7602(j) (1978); Section D, *supra*. After such a rulemaking, a major emitting facility of "excluded particulates" would become subject to the preconstruction review and permit requirements of section 165. The net result of the administrative action outlined above would be a requirement that such major emitting facilities apply BACT (section 165(a) (4)), but no need for showing required by section 165(a) (3) that emissions of "excluded particulates" would not violate NAAQS or allowable increments. No NAAQS would exist for "excluded particulates" and the increments applicable to "particulate matter" would not apply. *See also* C.A.A. at § 166, 42 U.S.C. § 7476 (1978) (premising development of increments

## VII. MONITORING

Environmental petitioners challenge the EPA's monitoring regulations<sup>135</sup> as falling short of the statutory mandate in several respects. The EPA argues that the Act, specifically the text of sections 165(a)(2) and (a)(7),<sup>136</sup> grants broad discretion to the agency to formulate monitoring regulations.

The arguably discretionary language of sections 165(a)(2) and (a)(7) is in our view restricted by the plain language of section 165(e), which provides in part:

The review provided for in subsection (a) shall be preceded by an analysis in accordance with regulations of the Administrator promulgated under this subsection. . . .<sup>137</sup>

Subsection (e) provides unambiguously that certain requirements *must* be included in the regulations EPA is directed to issue respecting the analysis. Of course there are circumstances when statutory language mandatory in form is held to constitute a mere directory command to the agency, so that variance triggers no judicial sanction. In this case, however, the nature of the statutory command and its background in the legislative history<sup>138</sup> supports our determination that the specification of requirements in section 165(e) must control agency action in this respect.

---

for "other pollutants" on the existence of NAAQS for such pollutants).

<sup>135</sup> 40 C.F.R. §§ 51.24(n), 52.21(n) (1978).

<sup>136</sup> 42 U.S.C. § 7475(a)(2) and (a)(7) (1978).

<sup>137</sup> 42 U.S.C. § 7475(e) (1978) (emphasis added).

<sup>138</sup> See H. Rep. No. 95-564, 95th Cong., 1st Sess. 151-53 (1977); H. Rep. No. 95-294, 95th Cong., 1st Sess. 8-9, 171 (1977).

A. *Elements Required by Section 165(e)(1)*

On its face, section 165(e)(1) requires that preconstruction "review . . . shall be preceded by an analysis . . . for each pollutant subject to regulation under this Act which will be emitted" from the facility.<sup>139</sup> The mandatory nature of these provisions—subject only to the authority of the agency to exempt *de minimis* situations<sup>140</sup>—is clear. There must be an analysis; it must be for each pollutant regulated under the Act.

The regulations under review required monitoring only for those pollutants for which a NAAQS exists. The Sierra Club and the Environmental Defense Fund argue that § 165(e)(1) mandates monitoring for all pollutants under the Act. In the *per curiam* opinion issued earlier in this case, we expressed the view that § 165 did in fact require preconstruction monitoring for each pollutant subject to regulation under the Act.<sup>141</sup> Further reflection, prompted in part by a petition for rehearing filed by industry petitioners,<sup>142</sup> has caused us to reconsider our rulings. We now affirm that § 165(e)(1) requires that *an analysis* be conducted, and that it be conducted for each pollutant regulated under the Act. But, we also find that § 165(e)(1), standing alone, does not require monitoring as *the* method of analysis to be employed in fulfillment of its requirements. This conclusion is dictated by the absence of any reference to monitoring in § 165(e)(1)—in contrast to its explicit inclusion in § 165

<sup>139</sup> 42 U.S.C. § 7475(e)(1) (1978).

<sup>140</sup> See section IIIB of this opinion.

<sup>141</sup> Alabama Power Company, et al. v. Costle, — U.S. App.D.C. —, —, — F.2d —, —, Slip Opinion at 33-34 (No. 78-10906, 6/18/79).

<sup>142</sup> Industry Petitioners' Petition for Rehearing on the Application of PSD Requirements to Pollutants Other Than Sulfur Dioxide and Particulates at 7-10 (Filed, July 19, 1979).

(e) (2), which requires preconstruction monitoring to determine whether emissions will exceed maximum allowable increases or concentrations where such limits have been promulgated. Furthermore, § 165(e) (3) (D), which provides that EPA regulations shall specify any models to be used, opens the possibility that EPA might, in varying circumstances or for various pollutants, choose *either* monitoring or modeling as the method of analysis for § 165(e) (1).

EPA may use its discretion in the choice of methodology—either monitoring or modeling—to be employed in fulfilling the requirements of § 165(e) (1). That discretion is subject, however, to the provisions of § 165(e) (2) which sets forth requirements as to monitoring.

*B. Elements Required by Section 165(e) (2)*

EPA's regulations have required monitoring only to determine whether an applicable NAAQS will be exceeded. The Agency argues in justification for its restrictions on the use of monitoring that monitoring for actual air quality concentrations is technologically infeasible for all but a small number of pollutants and that current monitoring techniques are at best of questionable accuracy even for the relatively straightforward measurement of whether an applicable NAAQS has been exceeded. The environmental petitioners argue that the regulation falls short of the statutory command, that monitoring must be required to determine as well whether the applicant will cause or contribute to violations of allowable increments.

The language of subsection 165(e) (2) is dispositive. It provides in part:

Effective one year after date of enactment of this part, the analysis required by this subsection *shall include* continuous air quality monitoring data gath-

ered for purposes of determining whether emissions from such facility will exceed the *maximum allowable increases* or the maximum allowable concentration permitted under this part.<sup>143</sup>

This is a plain requirement for inclusion of monitoring data, for purposes of the determination whether emissions will exceed allowable increments.

We discern from the statute a technology-forcing objective. Congress intended that monitoring would impose a certain discipline on the use of modeling techniques, which would be the principal device relied upon for the projection of the impact on air quality of emissions from a regulated source. This projects that the employment of modeling techniques be held to earth by a continual process of confirmation and reassessment, a process that enhances confidence in modeling, as a means for realistic projection of air quality. This objective is furthered by the development of sophisticated monitoring techniques, and the collection of the data base that would result from monitoring's widespread use. Of course even a congressional mandate, such as a technology-forcing requirement based on a congressional projection of emergence of technology for the future, is subject to a justified excuse from compliance where good-faith effort to comply has not been fruitful of results. That is far different from the exemption created by EPA on the basis of current technological infeasibility. Though EPA has authority to require methods other than monitoring in its effort to ensure that allowable increments and NAAQS are not violated, and though it may choose to invoke that authority because of its perception that monitoring alone is inadequate to the task, it does not have authority to dispense with monitoring—as at least one element of the overall enforcement effort—where Congress has mandated the use of that technique.

---

<sup>143</sup> 42 U.S.C. § 7475(e)(2) (1978) (emphasis added).

C. *Guidelines for State Exemption Authority Under Section 165(e)(2)*

The monitoring requirement of subsection 165(e)(2) includes an instruction that:

Such data shall be gathered over a period of one calendar year preceding the date of application for a permit under this part unless the State, *in accordance with regulations promulgated by the Administrator*, determines that a complete and adequate analysis for such purposes may be accomplished in a shorter period.

(Emphasis added.) The pertinent regulations have failed to provide concrete guidance to the cognizant State authorities for the exercise of the partial exemption authority granted by the provision. Instead, they have left such determinations to the States on a completely open-ended basis. We discern a congressional intention that EPA furnish meaningful guidance to the States as to the circumstances appropriate for exemption. We remand for further consideration.

D. *Requirement for Post-Construction Monitoring*

EPA has imposed no requirement for post-construction monitoring. The Sierra Club and the Environmental Defense Fund argue that this omission is invalid. In support of their contention, they point (1) to what they perceive to be the "prospective" monitoring requirement of section 165(a)(7);<sup>144</sup> and (2) to a congressional intent, ostensibly apparent from the inclusion of the modeling provisions of section 165(e)(3)(D)<sup>145</sup> in section 165, to ensure that monitoring and modeling augment one another in an ongoing manner.

This contention of environmental petitioners runs against the explicit language. Section 165(a)(7)<sup>146</sup> does

<sup>144</sup> 42 U.S.C. § 7475(a)(7) (1978).

<sup>145</sup> 42 U.S.C. § 7475(e)(3)(D) (1978).

<sup>146</sup> 42 U.S.C. § 7475(a)(7) (1978).

make reference to a requirement of post-construction monitoring, but grants discretion to the agency in this regard—a discretion that has not been provided with respect to the pre-application monitoring requirements specified in subsection 165(e). Section 165(a)(7) provides as a condition of permit approval that the applicant:

agrees to conduct such monitoring as may be necessary to determine the effect which emissions from any such facility may have, or is having, on air quality in any area which may be affected by emissions from such source.<sup>147</sup>

The determination of the post-construction monitoring that “may be necessary” is not dictated by any provision in subsection 165(e), which pertains to pre-application monitoring requirements. EPA has latitude to make a determination under subsection 165(a)(7) in light of the facts and circumstances of each case. There is also latitude to respond to suggestions that guidelines be formulated outlining the circumstances that require post-construction monitoring and the nature of the monitoring requirement.

Section 114<sup>148</sup> grants the Administrator broad authority to require monitoring by any source that in his judgment is necessary to carry out his responsibilities under the Act. This includes an authority to require post-construction monitoring, but does not compel such a requirement. Section 319<sup>149</sup> of the Act provides for development of a nationwide monitoring network, but this is to be a function of government, not the responsibility of permit applicants.

---

<sup>147</sup> *Id.*

<sup>148</sup> 42 U.S.C. § 7414 (1978).

<sup>149</sup> 42 U.S.C. § 7619 (1978).

ROBINSON, *Circuit Judge*: This opinion addresses four issues: first, whether EPA's action in specifying a uniform date on which baseline concentrations in attainment areas are to be ascertained comports with statutory requirements; second, whether increased emissions consequent upon voluntary changecovers from cleaner to dirtier fuels are to be included in the baseline; third, whether EPA provided reasoned responses to the modeling regulations that it proposed and ultimately adopted; and fourth, the legal propriety of EPA's regulations governing the role of stack height in determining the air pollution control requirements applicable to an emitting source.

#### I. BASELINE DATE

A central feature of the statutory program for the prevention of significant deterioration of air quality in attainment areas, with respect to sulfur dioxide and particulate matter at least,<sup>1</sup> is the establishment of maximum allowable increases, known as increments, in concentrations of pollutants.<sup>2</sup> The increment concept incorporates the idea of a baseline from which deterioration is calculated, by models or monitors, to determine whether it is permissible. Congress has defined with specificity the time and manner in which the baseline for an attainment area is to be determined. The first sentence of Section 169(4), the part now relevant, provides:

The term 'baseline concentration' means, with respect to a pollutant, the ambient concentration levels

---

<sup>1</sup> Section 163 fixes the increments for these two pollutants. 91 Stat. 732, 42 U.S.C. § 7473 (Supp. I 1977). Section 166 contemplates that EPA will study the four so-called "automotive" pollutants for which national ambient air quality standards have been set with a view to determining whether increments for these pollutants should be established. 91 Stat. 739, 42 U.S.C. § 7476 (Supp. I 1977). See generally Part III(B) *supra* of Judge Wilkey's opinion.

<sup>2</sup> See § 163, 91 Stat. 732, 42 U.S.C. § 7473 (Supp. I 1977).

which exist at the time of the first application for a permit in an area subject to [Part C], based on air quality data available in the Environmental Protection Agency or a State air pollution control agency and on such monitoring data as the permit applicant is required to submit.<sup>3</sup>

EPA has acknowledged that the literal purport of the statutory definition is that the starting point<sup>4</sup> for determining the baseline in a particular clean air region is the existing ambient pollution level in that area at the time of the first application for a permit by a major emitting facility.<sup>5</sup> Yet, in a remarkable assertion of administrative power to revise what Congress has wrought, EPA's final regulations define baseline concentration in terms of actual air quality as of August 7, 1977.<sup>6</sup> The Administrator explained this decision as follows:

[T]he regulations promulgated today recognize the severe technical and administrative problems with implementing a definition of baseline concentration that relates to the date of first permit application in an area. The administrator believes that a strict

---

<sup>3</sup> 91 Stat. 741, 42 U.S.C. § 7479(4) (Supp. I 1977).

<sup>4</sup> The remainder of § 169(4) deals with attribution of emissions of non-operating major emitting facilities on which construction was commenced prior to January 6, 1975, and of major emitting facilities, whether operating or not, on which construction was commenced after January 6, 1975. These provisions will be instrumental in our resolution of the "fuel switches" issue. See Part II *infra*.

<sup>5</sup> "Section 169(4) of the Act generally defines baseline in terms of the ambient concentration existing at the time of the first application for a permit in an area." 43 Fed. Reg. 26400 (June 19, 1978) (explanation of final regulations).

<sup>6</sup> 40 C.F.R. § 51.24(b)(11) (1978); 40 C.F.R. § 52.21(b)(11) (1978).

interpretation of the Act's language would create thousands of different areas each with different baseline starting points. Moreover, these areas would eventually overlap as more and more sources applied for PSD permits. The final regulations . . . resolve those problems by establishing a uniform starting date for determining the baseline concentration in all areas.<sup>7</sup>

Without disavowing that rationale, EPA's counsel has offered, as a second justification for the selection of a single date for calculation of the baseline, the following "anomaly":

There is no apparent reason why in one clean air area five 'minor' sources constructed at the same time as five 'minor' sources in another clean air area should be counted against the increment simply because the first application by a major facility for a PSD permit came at an earlier date in the first area than in the second.<sup>8</sup>

Industry petitioners, the State of Texas and the District of Columbia<sup>9</sup> urge that EPA's uniform baseline date be set aside and the statutory baseline date reinstated. We agree. EPA has no authority to overrule a clear, consistent congressional directive:<sup>10</sup> "the sound

---

<sup>7</sup> 43 Fed. Reg. 26400 (June 19, 1978).

<sup>8</sup> Brief for Respondents at 161. In rejecting this position on the merits, see notes 12-17 *infra* and accompanying text, we do not mean to imply that appellate counsel's carpentry can repair a deficient agency rationale. See, e.g., *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 419, 91 S.Ct. 814, 825, 28 L.Ed.2d 136, 155 (1971).

<sup>9</sup> It may be some time before a major emitting facility seeks to operate in the District of Columbia.

<sup>10</sup> *Espinoza v. Farah Mfg. Co.*, 414 U.S. 86, 94-95, 94 S.Ct. 334, 339, 38 L.Ed.2d 287, 295 (1973), quoting *Red Lion Broadcasting Co. v. FCC*, 395 U.S. 367, 381, 89 S.Ct. 1794, 1802, 23

principle of according deference to administrative practice normally applies only where the relevant statutory language is unclear or susceptible of differing interpretations.”<sup>11</sup>

The statutory definition of baseline concentration was in no sense a product of legislative inadvertence.<sup>12</sup> Congress focused on how to define the baseline and fully understood the consequences of its chosen resolution. The Conference Committee explicitly acknowledged its adoption of the Senate definition of baseline,<sup>13</sup> and the Senate report had explicitly rejected EPA’s uniform date approach.<sup>14</sup> Indeed, it purposely embraced the situation

---

L.Ed.2d 371, 384 (1969) (“[c]ourts need not defer to an administrative construction of a statute where there are ‘compelling indications that it is wrong’”); *Volkswagenwerk Aktiengesellschaft v. FMC*, 390 U.S. 261, 273, 88 S.Ct. 929, 936, 19 L.Ed.2d 1090, 1098 (1968), quoting *NLRB v. Brown*, 380 U.S. 278, 291, 85 S.Ct. 980, 988, 13 L.Ed.2d 839, 849 (1965) (“the courts are the final authorities on issues of statutory construction [citations omitted], and ‘are not obliged to stand aside and rubber-stamp their affirmance of administrative decisions that they deem inconsistent with a statutory mandate or that frustrates the congressional policy underlying a statute’”).

<sup>11</sup> *Shea v. Vialpando*, 416 U.S. 251, 262 n.11, 94 S.Ct. 1746, 1754 n.11, 40 L.Ed.2d 120, 130 n.11 (1974); see *Townsend v. Swank*, 404 U.S. 282, 286, 92 S.Ct. 502, 505, 30 L.Ed.2d 448, 453 (1971).

<sup>12</sup> Compare *Citizens to Save Spencer County v. EPA*, No. 78-1002 (D.C. Cir. Mar. 27, 1979).

<sup>13</sup> H.R. Rep. No. 564, 95th Cong. 1st Sess. 153 (1977) (conference report).

<sup>14</sup> See S. Rep. No. 127, 95th Cong., 1st Sess. 98 (1977) (“[u]nder the reported bill [unlike EPA’s regulations], the time at which the baseline is established for different areas will depend upon the timing of the first application of a major emitting facility”). Congress also rejected the House definition of baseline, which embraced a fixed-date approach. See H.R. 6161, 95th Cong., 1st Sess., § 108 (1977) (adding § 160(c)(2)(E) to the Clean Air Act).

EPA's counsel considers anomalous: "Under this definition [of baseline] it is possible for nonmajor emitting sources to be constructed in the area after the date of enactment without having their emissions affect the ability of major emitters to use the increment available."<sup>15</sup>

This differential treatment of clean air areas, keyed to when the first major emitting facility applies for a permit, is based on a sound, practical consideration. As the Senate explained,

[t]he purpose is to use actual air quality data to establish the baseline. Where sufficient actual data are not available, the State may require the applicant to perform whatever monitoring the State believes is necessary to provide that information. This may involve monitoring for 12 months or more to establish an annual average.<sup>16</sup>

In other words, the task of monitoring existing ambient pollution levels in attainment areas is assigned to the first permit applicant, who will provide the information essential to calculation of the baseline.<sup>17</sup>

---

<sup>15</sup> S. Rep. No. 127, 95th Cong., 1st Sess. 98 (1977). EPA suggests that the Conference Committee's rejection of the Senate proposal that only emissions from major new sources should be considered in assessing consumption of the increment, see S. 252, 95th Cong., 1st Sess. § 7 (1977) (adding § 110(g) (B) (2) to the Clean Air Act), vitiated the purpose of calculating the baseline as of the date of the first permit application. Brief for Respondents at 157-161. This misapprehends the rationale of the Senate's baseline definition. See notes 16-18 *infra* and accompanying text. It is true, however, that the statement quoted in text possessed, prior to the above-mentioned conference decision, a broader meaning.

<sup>16</sup> S. Rep. No. 127, 95th Cong., 1st Sess. 98 (1977).

<sup>17</sup> See § 165 (e) (1)-(2), 91 Stat. 738, 42 U.S.C. § 7475 (e) (1)-(2) (Supp. I 1977). EPA asserts that its uniform date is supported by § 107 (d) of the Act, 91 Stat. 687, 42 U.S.C.

[Footnote continued on page 6]

The Administrator's recitation of the administrative and technical burdens obviated by a uniform date for the setting of the baseline simply blinks reality.<sup>18</sup> A uniform date for calculating the baseline does not result in establishment of a uniform baseline. Ambient concentration levels of regulated pollutants varied considerably in different clean air areas on August 7, 1977, or any date for that matter, and thus baselines inevitably must differ. EPA's regulations requiring baseline concentration to be figured as of August 7, 1977, must be set aside in favor of the statutory directive to ascertain the baseline in each region as of the date of the first permit application.

## II. BASELINE AND VOLUNTARY FUEL SWITCHES

The first sentence of Section 169(4),<sup>19</sup> as we have just explained, specifies that the baseline concentration means

<sup>17</sup> [Continued]

§ 7404(d) (Supp. I 1977). Brief for Respondents at 162. Section 107(d)(1) requires each state to submit to EPA, within 120 days of enactment of the 1977 amendments, a list of those portions of the state which, on August 7, 1977, do not meet a national ambient air quality standard, and a list of both those which meet all such standards and those which, for lack of sufficient information, cannot be classified and therefore are deemed clean air areas. See *Citizens to Save Spencer County v. EPA*, *supra* note 12, at 12-13 (dissenting opinion). But the § 107 lists submitted so far indicate that a great many states do not have acceptable air quality data showing pollution levels as of August 7, 1977. See, e.g., 43 Fed. Reg. 8967, 8970, 8978, 8980, 8983, 8985, 8992, 8999, 9001, 9002, 9005, 9012, 9017, 9019, 9025, 9027, 9029, 9035, 9037, 9041, 9044, 9046 (Mar. 3, 1978). Thus, Congress' concern over the adequacy of existing information concerning ambient air quality has been borne out by experience.

<sup>18</sup> See note 7 *supra* and accompanying text.

<sup>19</sup> 42 U.S.C. § 7479(4) (Supp. I 1977), quoted in relevant part in text *supra* at note 3.

primarily the actual ambient pollution levels existing at the time of the first permit application by a major emitting facility.<sup>20</sup> This baseline is, however, subject to an adjustment specified in the remainder of Section 169(4):

Such ambient concentration levels shall take into account all projected emissions in, or which may affect, such area from any major emitting facility on which construction commenced prior to January 6, 1975, but which has not begun operation by the date of the baseline air quality concentration determination. Emissions of sulfur oxides and particulate matter from any major emitting facility on which construction commenced after January 6, 1975, shall not be included in the baseline and shall be counted against the maximum allowable increases in pollutant concentrations established under [Part C].<sup>21</sup>

The significance of January 6, 1975, is that it was the effective date of EPA's earlier PSD regulations.<sup>22</sup>

Indisputably, then, the baseline is to include all emissions actually being made by major facilities on which construction was under way before January 6, 1975, and which are in operation when the baseline determination is made. Nor is there any quarrel over the scope or import of the last sentence of Section 169(4): emissions of sulfur dioxide and particulate matter<sup>23</sup> from major

---

<sup>20</sup> See notes 10-18 *supra* and accompanying text.

<sup>21</sup> 42 U.S.C. § 7479(4) (Supp. I 1977).

<sup>22</sup> See S. Rep. No. 127, 95th Cong., 1st Sess. 98 (1977).

<sup>23</sup> This case does not require us to explore the implications, if any, to be drawn from the fact that the last sentence of § 169(4), 42 U.S.C. § 7479(4) (Supp. I 1977), is limited to sulfur dioxide and particulate matter while the remainder of the statutory definition of "baseline concentration" speaks more broadly of pollutants. The other regulated pollutants have not yet been subjected to the baseline-increment method

facilities on which construction began after January 6, 1975, are not grandfathered into the baseline but rather count against the increments, even if such facilities are operating on the date of the first permit application.<sup>24</sup>

On the other hand, controversy rages over the meaning of the middle sentence of Section 169(4). EPA has persisted, over firm objection,<sup>25</sup> in reading that directive according to its literal terms.<sup>26</sup> In EPA's view, the sentence evinces a congressional design to grandfather projected emissions only of *sources not in operation* when the baseline is established, and then only if construction began prior to January 6, 1975.<sup>27</sup> The State of Texas

---

of regulation. Section 166 contemplates that the four pollutants other than sulfur dioxide and particulate matter for which national ambient standards have been set will be regulated to prevent significant deterioration. 42 U.S.C. § 7476 (Supp. I 1977). The methods for preventing significant deterioration by those pollutants, however, "need not require the establishment of maximum allowable increases." 42 U.S.C. § 7476(e) (Supp. I 1977).

<sup>24</sup> 43 Fed. Reg. 26383 (June 19, 1978) (to be codified in 40 C.F.R. § 51.24(b)(11)); 43 Fed. Reg. 26404 (June 19, 1978) (to be codified in 40 C.F.R. § 52.21(b)(11)).

<sup>25</sup> Several of these complaints, submitted to EPA in affidavit form and appended to petitioners' brief, maintain that EPA's position penalizes companies that have in the past voluntarily burned cleaner-than-allowable fuel. The answer is that baseline and increments are set for regions, rather than individual facilities.

<sup>26</sup> See generally 40 C.F.R. § 51.24(b)(11) (1978); 40 C.F.R. § 52.21(b)(11) (1978).

<sup>27</sup> "The baseline concentration shall include contributions from . . . [t]he allowable emissions of major stationary sources and major modifications which commenced construction before January 6, 1975, but were not in operation by August 7, 1977." 40 C.F.R. § 51.24(b)(11)(ii) (1978); 40 C.F.R. § 52.21(b)(11)(ii) (1978). August 7, 1977, it will be recalled, was EPA's uniform baseline date, which we have held to be

and members of the chemical manufacturing and utility industries have petitioned for review on this point, arguing that the provision in question reflects an intention to exempt projected emissions of any source on "which construction commenced before January 6, 1975, even if operating at the time of establishment of the baseline."<sup>28</sup> Issue has been joined on whether increased emissions resulting from a major facility's voluntary switch from a relatively clean but scarce fuel to a more abundant but dirtier fuel are to consume the increments or rather are to be included within the baseline when the facility was capable of utilizing the alternate, more plentiful fuel prior to January 6, 1975.<sup>29</sup>

EPA has held, first, that voluntary fuel switches by emissions sources which were designed to accommodate the alternate fuel prior to January 6, 1975, do not constitute modifications within the meaning of Section 111 (a) (4),<sup>30</sup> and accordingly that such changeovers are not subject to the review and permitting strictures imposed by Section 165.<sup>31</sup> EPA's ruling on this point has not been

---

in contravention of the statute. See Part I *supra*. The reference to August 7, 1977, is thus simply to the time of baseline determination.

<sup>28</sup> Brief for Industry Petitioners on Fuel Switches at 17-22.

<sup>29</sup> EPA's position is "that [voluntary fuel] switches . . . will consume increment." 43 Fed. Reg. 26397 (June 19, 1978) (explanation of final regulations).

<sup>30</sup> 42 U.S.C. § 7411 (a) (4) (Supp. I 1977).

<sup>31</sup> 42 U.S.C. § 7475 (Supp. I 1977). In enacting the 1977 amendments, Congress neglected to subject modifications of major emitting facilities to the permit and best available control technology requirements. A so-called "technical" amendment to § 169 (2) of the Act added a new subparagraph C, which provided that "[t]he term 'construction' when used in connection with any source or facility, includes the modifica-

challenged. EPA has further resolved, as we have stated, that the additional emissions resulting from such fuel switches do, under the Act, consume the increments.<sup>32</sup>

Texas and the industry petitioners complaining intimate that EPA's position on voluntary fuel switches is internally inconsistent.<sup>33</sup> This argument conflates the

tion (as defined in section 111(a)) of any source or facility." Act of Nov. 16, 1977, Pub. L. No. 95-190, 91 Stat. 1402, 42 U.S.C. § 7479(2)(C) (Supp. I 1977). By this amendment modifications of major facilities must meet the demands of § 165, and "modification" is defined to mean "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted." 42 U.S.C. § 7411(a)(4) (Supp. I 1977).

EPA's decision to omit voluntary fuel switches from PSD scrutiny is based upon a belief that Congress did not intend that they be considered changes in the "method of operation." The Administrator explained:

In adding Section 169(2)(C) to the Act, Congress indicated that it intended to conform the meaning of 'modification' to 'usage in other parts of the Act.' 123 Cong. Rec. H11955, 11957 (November 1, 1977). At the time, regulations promulgated under Section 111 had defined 'modifications' to exclude voluntary fuel switches when the source, 'prior to the date any standard under this part becomes applicable to that source type . . . [,] was designed to accommodate that alternative use.' 40 C.F.R. 60.14(e)(4) (1977). Apparently, Congress intended voluntary fuel switches to be treated similarly for PSD purposes.

43 Fed. Reg. 26396 (June 19, 1978).

<sup>32</sup> See note 29 *supra*.

<sup>33</sup> *E.g.*, Brief for Industry Petitioners on Fuel Switches 37-42. These petitioners also urge that EPA's fuel-switches position is at odds with its avowed intent to deviate from a baseline calculated on the basis of actual emissions in those regions where a SIP relaxation was submitted to EPA and was still pending on August 7, 1977. 43 Fed. Reg. 26400 (June 19,

different yet complementary functions of Section 165 review and calculation of increment consumption. The theory of the statutory PSD program is that concentration on preconstruction review of major emitting facilities<sup>34</sup> in clean air areas will preserve air quality in those areas with a minimum of economic hardship.<sup>35</sup> At the same time, the success of the program depends heavily upon realistic assessments of pollution levels. As Senator Gary Hart put it, "[s]ulfur dioxide is sulfur dioxide—and it doesn't matter whether it comes from 1 large major source or from 1,000 small nonmajor sources. The effects are still the same."<sup>36</sup> Moreover, the severe technical problems involved in assessing the origin of existing pollution are sidestepped somewhat by this approach.<sup>37</sup>

---

1978). The validity of this approach itself is not questioned here, and we intimate no view either on its appropriateness or on petitioners' argument of inconsistency. Restraint is especially warranted because EPA could reconsider this issue in light of our decision overturning its uniform, August 7, 1977, date for determining the baseline. See Part I *supra*. Industry also points to EPA's announcement that it will use reasonable assumptions in ascertaining ambient concentration as of the baseline date. 43 Fed. Reg. 26400 (June 19, 1978). This policy likewise is unchallenged, and may be revised, so we decline to rule on it. See generally notes 43-44 *infra* and accompanying text.

<sup>34</sup> "This key term [major emitting facility] assures that industrial plants of significant impact are fully covered, yet also assures that smaller activities are not subject to over-zealous regulation." 122 Cong. Rec. S12809 (daily ed. July 29, 1976) (remarks of Senator McClure). See also 123 Cong. Rec. S13710-13711 (daily ed. Aug. 4, 1977) (remarks of Senator McClure).

<sup>35</sup> 122 Cong. Rec. S12470 (daily ed. July 26, 1976) (remarks of Senator Hart).

<sup>36</sup> *Id.* See also 122 Cong. Rec. S13325-13326 (daily ed. Aug. 4, 1976) (remarks of Senator Hart). The Hart amendment was defeated. See note 46 *infra* and accompanying text.

<sup>37</sup> *Id.*

The central submission of the protesting petitioners is that EPA's decision not to grandfather emissions from fuel switches by facilities capable of so changing prior to January 6, 1975, contravenes congressional intent as revealed in the second sentence of Section 169(4) and throughout the history of the 1977 Amendments. Approaching the issue with the considerable degree of deference due an agency's interpretation of the statute it is charged with administering,<sup>38</sup> we sustain the administrative construction.

Every issue of statutory interpretation should commence with a close textual examination.<sup>39</sup> The second sentence of Section 169(4) is in express terms limited to facilities on which construction was commenced prior to January 6, 1975, but which are not in operation when the first permit application triggers calculation of the baseline. Petitioners, however, would modify this provision to make it referable to any major facility on which construction started before that date, "even if" the facility has not begun operation at the time of the base-

---

<sup>38</sup> *United States v. Sheffield Bd. of Comm'rs*, 435 U.S. 110, 131, 98 S.Ct. 965, 979, 55 L.Ed.2d 148, 166 (1978); *United States v. Consumer Life Ins. Co.*, 430 U.S. 725, 751-752, 97 S.Ct. 1440, 1454, 52 L.Ed.2d 4, 24 (1977); *Train v. Natural Resources Defense Council*, 421 U.S. 60, 87, 95 S.Ct. 1470, 1485, 43 L.Ed.2d 731, 750 (1975); *Udall v. Tallman*, 380 U.S. 1, 16, 85 S.Ct. 792, 801, 13 L.Ed.2d 616, 625 (1965).

<sup>39</sup> *Ernst & Ernst v. Hochfelder*, 425 U.S. 185, 197, 96 S.Ct. 1375, 1383, 47 L.Ed.2d 668, 679 (1976), quoting *Blue Chip Stamps v. Manor Drug Stores*, 421 U.S. 723, 756, 95 S.Ct. 1917, 1935, 44 L.Ed.2d 536, 561 (1975) (concurring opinion) ("[t]he starting point in every case involving construction of a statute is the language itself"); *FTC v. Bunte Bros.*, 312 U.S. 349, 350, 61 S.Ct. 530, 581, 85 L.Ed. 881, 883 (1941) ("[w]hile one may not end with the words of a disputed statute, one certainly begins there"); *Citizens to Save Spencer County v. EPA*, *supra* note 12, at 3-4 & nn.12-14 (dissenting opinion).

line determination.<sup>40</sup> To justify this surgery, they assert that "[c]learly it would be anomalous to assume that Congress intended to grandfather only those projected emissions from sources that commenced construction prior to January 6, 1975, but which were not in operation [by the date the baseline is figured], and exclude sources which were built and operating beforehand."<sup>41</sup>

In our opinion, Section 169(4) as enacted draws a sensible distinction. There are two types of emitting sources begun prior to the existence of any PSD program. If the source has no actual emissions because it has yet to commence operating, its hypothetical, projected emissions are included in the baseline. If, however, the source is an established operation, a more realistic assessment of its impact on ambient air quality levels is possible, and thus is directed.<sup>42</sup>

---

<sup>40</sup> Brief for Industry Petitioners on Fuel Switches 18 (emphasis in original).

<sup>41</sup> *Id.* at 20 n.1.

<sup>42</sup> Brief for Respondents at 173. EPA also relies on § 163(c), 91 Stat. 733, 42 U.S.C. § 7473(c) (Supp. I 1977), to support its policy of counting emissions from voluntary fuel changes against the increment. Brief for Respondents at 166-174. This subsection provides in relevant part:

(1) In the case of any State which has a plan approved by the Administrator for purposes of carrying out [Part C], the Governor of such State may, after notice and opportunity for public hearing, issue orders or promulgate rules providing that for purposes of determining compliance with the maximum allowable increases in ambient concentrations of an air pollutant, the following concentrations of such pollutant shall not be taken into account:

(A) concentrations of such pollutant attributable to the increase in emissions from stationary sources which have converted from the use of petroleum products, or natural gas, or both, by reason of an order which is in effect under the provisions of sections 2(a) and (b) of the Energy Supply and Environmental Coordination

Petitioners rail against this qualified "snapshot" approach to determination of the baseline concentration. They argue that if the snapshot is taken on a day on which industrial activity is rather dormant—say, Sunday

---

Act of 1974 (or any subsequent legislation which supercedes such provisions) over the emissions from such sources before the effective date of such order.

(B) the concentrations of such pollutant attributable to the increase in emissions from stationary sources which have converted from using natural gas by reason of a natural gas curtailment pursuant to a natural gas curtailment plan in effect pursuant to the Federal Power Act over the emissions from such sources before the effective date of such plan, . . .

(3) No action under this subsection shall take effect unless the Governor submits the order or rule providing for such exclusion to the Administrator and the Administrator determines that such order or rule is in compliance with the provisions of this subsection.

Since Congress focused on the question of increment consumption caused by fuel conversions and declined to fashion an exemption for voluntary switches, so the argument goes, EPA could not expand the statutorily-authorized exemptions. While this thesis has some appeal, industry petitioners aptly respond that § 163(c) deals with fuel conversions regardless of whether the plant was capable of utilizing the alternate fuel prior to January 6, 1975. Thus that subsection addresses a somewhat different concern and application of the maxim *expressio unius est exclusio alterius* did not compel EPA's decision to count emissions from post-January 6, 1975, voluntary switches not involving any design changes. Reply Brief for Industry Petitioners on Fuel Switches at 3-6.

Texas, in a separate brief, insists that EPA's final regulations arbitrarily treat state-ordered fuel-conversion orders differently from federally-mandated fuel switches since only emissions from the latter are exempted from increment consumption. Brief for Petitioner State of Texas at 6-15. This contention is firmly rebutted by § 163(c). Texas maintains that state- and federally-ordered conversions are indistinguishable—both are directed for sound energy conservation reasons. If, however, Texas has a justified grievance,

or a holiday, or when wind conditions are peculiarly favorable—then the baseline concentration will be set so low that full operation of existing facilities on an average day will lead to increment exceedances.<sup>43</sup> We think this fear is groundless. Congress expected EPA to use “administrative good sense” in establishing the baseline and calculating exceedances.<sup>44</sup> Were measurements on an atypical day the sole method of determining actual ambient air quality as of the approximate time of the first permit application, affected industries would then have cause for complaint and potential ground for relief.

Petitioners understandably seek support for their projected-emissions approach in the Act's legislative history, for both the Senate and House bills, in different ways, would have excluded projected emissions from old sources in calculating expenditure of the increments. Both the 1976 and 1977 Senate bills defined the increments in terms of maximum allowable increases in sulfur dioxide and particulate matter “resulting from the construction and operation of any new major emitting fa-

---

resolution of it is committed to Congress. Congress may have been concerned that some state agencies might not consider all of the environmental consequences of a conversion order, as federal energy authorities are required to do. In any event, in light of § 163(c), EPA's failure to exclude increased emissions resulting from a state-ordered fuel switch is not judicially condemnable.

<sup>43</sup> Reply Brief for Industry Petitioners on Fuel Switches at 9.

<sup>44</sup> The Senate Report, after explaining that actual air quality data are to be utilized to establish the baseline, stated:

In calculating the baseline air quality concentration, one caveat is in order. This concerns background particulates levels in rural, arid and semiarid States. Because of the imprecision inherent in the total suspended particulate standards, background dust in such States can

cility";<sup>45</sup> thus only emissions from new major sources would count against the increments. In 1976, the Senate soundly defeated an amendment providing that emissions from all sources would be counted in determining increment consumption.<sup>46</sup> Both the 1976 and 1977 House bills included within the baseline "the level of concentration determined for each period of exposure on the basis of plant capacity in existence on . . . January 1, 1975."<sup>47</sup> As the 1976 House report stated, "the bill's definition of baseline level authorizes the 'grandfathering' of . . . all existing industrial capacity. . . ." <sup>48</sup>

---

cause levels in excess of the particulates standards. Fortunately, the logical dilemma posed by the shortcomings of the present particulate standards can be overcome by administrative good sense until such time as modification of the standards are adopted.

S. Rep. No. 127, 95th Cong., 1st Sess. 98 (1977). Though directed at a specific problem, we believe that this illustration indicates that Congress did not intend a simple measurement of air quality on a day with atypical conditions to control calculation of the baseline. Reasonable efforts to ascertain the actual—but usual—concentration levels, as of the date of the first application for a permit, are required. See also note 33 *supra*.

<sup>45</sup> S. 252, 95th Cong., 1st Sess. § 7 (1977), (adding § 110 (g) (2) to the Clean Air Act); S. 3219, 94th Cong., 2d Sess. § 6 (1976) (adding § 110 (g) (2) to the Clean Air Act).

<sup>46</sup> See 122 Cong. Rec. S13325-13329 (daily ed. Aug. 4, 1976) (debate on the Hart amendment); 122 Cong. Rec. S13336 (daily ed. Aug. 4, 1976) (defeat of Hart amendment).

<sup>47</sup> H.R. 6161, 95th Cong., 1st Sess. § 108 (1977) (adding § 160 (c) (2) (E) (i) to the Clean Air Act); H.R. 10498, 94th Cong., 2d Sess. § 108 (1976) (adding § 160 (c) (2) (E) (i) to the Clean Air Act).

<sup>48</sup> H.R. Rep. No. 1175, 94th Cong., 2d Sess. 123 (1976); see *id.* 131.

Had either the House definition of baseline concentration or the Senate approach to increment consumption been enacted, petitioners would be on firm ground in urging that emissions resulting from fuel switches in plants with the capacity to use the dirtier fuel prior to January 6, 1975, do not consume the increments. The Conference Committee withdrew these crucial supports, however. The Senate definition of the baseline became Section 169(4).<sup>49</sup> As explained in the discussion of the appropriate date for determining the baseline,<sup>50</sup> the Senate chose "to use actual design capacity data to establish the baseline," gathered if necessary through monitoring by the first permit applicant.<sup>51</sup> Petitioners attempt to distinguish the injunction to use "actual data" from the use of "actual emissions,"<sup>52</sup> but this strikes us as contrary to common sense and, more significantly, to the clear directive of the first sentence of Section 169(4), which defines the baseline in terms of existing ambient concentration levels.<sup>53</sup>

The Conference Committee also rejected the Senate philosophy that only emissions from new major facilities should expend the increments. As the Committee observed, "[i]ncrements setting forth the maximum allowable in-

---

<sup>49</sup> H.R. Rep. No. 564, 95th Cong., 1st Sess. 153 (1977) (conference report).

<sup>50</sup> See notes 16-17 *supra* and accompanying text.

<sup>51</sup> S. Rep. No. 127, 95th Cong., 1st Sess. 98 (1977). See also 122 Cong. Rec. S13177 (daily ed. Aug. 3, 1976) (remarks of Senator Brooke) ("the House bill, unlike the Senate bill, defines the 'baseline'—to which new pollution increases may be added—on the basis of total 'design capacity' of existing sources, not actual emissions").

<sup>52</sup> Reply Brief for Industry Petitioners on Fuel Switches at 10.

<sup>53</sup> 42 U.S.C. § 7479(4), quoted in pertinent part in text accompanying note 3 *supra*.

crease in pollutants are stated in the statute for particulates and sulfur dioxide,"<sup>54</sup> and those increments are not source-specific; all emissions are considered in determining whether the statute's aim of preventing significant deterioration of the air quality in attainment areas is being secured.<sup>55</sup>

In sum, EPA's refusal to grandfather emissions resulting from a voluntary fuel switch is a well-supported interpretation of congressional intent.<sup>56</sup> We accordingly must uphold EPA's regulations on this score.

### III. MODELING

In its initial, reluctant effort to establish a program for the prevention of significant clean-air deterioration, EPA in 1973 proposed four alternative sets of regulations.<sup>57</sup> Though differing in many important respects,

---

<sup>54</sup> H.R.Rep. No. 564, 95th Cong., 1st Sess. 151 (1977) (conference report).

<sup>55</sup> § 163(b), 91 Stat. 732, 42 U.S.C. § 7473(b) (Supp. I 1977); see also notes 33-36 *supra* and accompanying text.

<sup>56</sup> Petitioners also assert that EPA's position on voluntary fuel switches is procedurally infirm. They suggest that EPA failed to explain the basis for its action and neglected to respond to significant comments. Brief for Industry Petitioners on Fuel Switches at 30-37. These contentions are without merit. EPA carefully detailed the rationale of its fuel-switches policy; its view of congressional intent simply differed, and justifiably so, from those of petitioners. Moreover, since EPA's fuel switches regulations are interpretative, they are exempt from the requirements of § 4 of the Administrative Procedure Act. 5 U.S.C. § 553 (1976). See *Citizens to Save Spencer County v. EPA*, *supra* note 12, at 64-69. See also § 307(d), 91 Stat. 772, 42 U.S.C. § 7607(d) (Supp. I 1977) (procedural requirements applicable to rules proposed more than 90 days after enactment of the 1977 amendments; interpretative rules are exempted).

<sup>57</sup> 38 Fed. Reg. 18986 (July 16, 1973).

each set embraced increment-consumption measurements as the primary means for determining whether to grant a permit to a proposed new major emitting facility.<sup>58</sup> Each facility would be required to monitor its impact on air quality unless the state wherein it was located were to determine that an adequate monitoring network already existed.<sup>59</sup>

By 1974, EPA had abandoned this program, mainly for two reasons: the absence of existing air quality data in attainment areas, and the inability of existing monitoring technology to "reliably distinguish between readings approaching the small increments."<sup>60</sup> Instead, EPA decided to rely principally on techniques of diffusion modeling—mathematical techniques for estimating the effects of emissions from multiple sources on air quality in the surrounding area.<sup>61</sup> Where feasible, the accuracy of the models was to be tested by measurements of actual air quality.<sup>62</sup>

In fashioning the Clean Air Act Amendments of 1977, Congress basically shared EPA's mind-set concerning models. Although Congress considered models less than completely trustworthy,<sup>63</sup> it believed them to be essential

---

<sup>58</sup> *Id.* at 18989-18990.

<sup>59</sup> *Id.* at 18990.

<sup>60</sup> 39 Fed. Reg. 31000, 31003 (Aug. 27, 1974).

<sup>61</sup> *Id.*

<sup>62</sup> "[C]urrent instrumentation would be adequate to calibrate and improve current diffusion modeling techniques . . . ." *Id.*

<sup>63</sup> See, e.g., 122 Cong. Rec. H9564 (daily ed. Sept. 8, 1976) (remarks of Representative Milford) ("[a] wide variety of diffusion modeling methodology is available, each with its supporters and its detractors . . . [;] [i]n other words, the non-deterioration proposal rests fundamentally on mathematical procedures that require data and scientific knowledge which

to implementation of a PSD program.<sup>64</sup> Consequently, it directed EPA to develop regulations "specify[ing] with reasonable particularity each air quality model or models to be used under specified sets of conditions . . . ." <sup>65</sup> To insure that EPA-sanctioned models would not lag behind the state of the art, Congress instructed the agency to hold conferences on modeling techniques, and permit specialists and interested persons to participate and sub-

---

we do not have"); 122 Cong. Rec. S13175 (daily ed. Aug. 3, 1976) (remarks of Senator Domenici) ("[a] major premise in the study rationale [of a proposed amendment] is that the current state of the art of air quality diffusion modeling makes the studies the committee has relied on unreliable[;] . . . even if one grants this contention . . . [a]ll the . . . amendment offers us is another study employing the same flawed modeling techniques").

<sup>64</sup> 123 Cong. Rec. S9269 (daily ed. June 9, 1977) (remarks of Senator McClure) ("[w]e are making the best judgment we can, without knowing what those models are going to show, without knowing what the science of modeling will do, without knowing what effects it may have on specific questions"); 122 Cong. Rec. S13175 (daily ed. Aug. 3, 1976) (remarks of Senator Domenici) (the bill, with its reliance on modeling, is "the first step in gathering knowledge on how our environmental values can be protected"; "real world feedback can . . . serve as the basis for making future modifications in the law").

<sup>65</sup> § 165(e)(3)(D), 91 Stat. 739, 42 U.S.C. § 7475(e)(3)(D) (Supp. I 1977). This provision goes on to say that

[a]ny model or models designated under such regulations may be adjusted upon a determination, after notice and opportunity for public hearing, by the Administrator that such adjustment is necessary to take into account unique terrain or a meteorological characteristic of an area potentially affected by emissions from a source applying for a permit required under this part.

*Id.*

mit comments.<sup>66</sup> The first such conference was held on December 14-15, 1977, in Washington, D.C., and subsequent modeling conferences must be held at least triennially.<sup>67</sup>

Many industry petitioners participated in the 1977 conference and utilized the subsequent comment period. EPA, however, adhered essentially to its proposal to adopt the variety of models detailed in its "Interim Guideline on Air Quality Models," which had been released in October, 1977.<sup>68</sup> The final regulations on modeling in-

---

<sup>66</sup> (a) Not later than six months after the date of the enactment of the Clean Air Act Amendments of 1977, and at least every three years thereafter, the Administrator shall conduct a conference on air quality modeling. In conducting such conference, special attention shall be given to appropriate modeling necessary for carrying out Part C of title I (relating to prevention of significant deterioration of air quality).

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

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

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

§ 320, 91 Stat. 782, 42 U.S.C. § 7620 (Supp. I 1977).

<sup>67</sup> *Id.*

<sup>68</sup> 42 Fed. Reg. 57472-57473 (Nov. 3, 1977) (explaining proposal to employ requirements specified in EPA's Interim Guideline on Air Quality Models (Oct. 1977)).

corporate essentially the revised version of this document, released in April, 1978.<sup>69</sup> On this review, industry petitioners urge that EPA's modeling regulations be set aside on the ground that the agency failed to respond meaningfully to significant criticism of the Interim Guideline, in contravention of Section 4 of the Administrative Procedure Act.<sup>70</sup> They contend that their comments raised three crucial policy issues which EPA neglected to address.<sup>71</sup>

Petitioners' first policy complaint goes not to the substance, but to an assumed exclusivity, of the models described in the guideline. The regulations require estimates of ambient concentrations to normally be based on the models specified in the 1978 guideline.<sup>72</sup> If, however,

---

<sup>69</sup> 43 Fed. Reg. 26398-26399 (June 19, 1978) (explaining regulations that incorporate by reference EPA's Guideline on Air Quality Models (Apr. 1978) [hereafter cited as "Guideline"]); 40 C.F.R. § 51.24(m) (1978); 40 C.F.R. § 52.21(m) (1978).

<sup>70</sup> 5 U.S.C. § 553 (1976).

<sup>71</sup> Brief for Industry Petitioners on Modeling at 13-27.

<sup>72</sup> *Air quality models*. (1) The plan shall provide for procedures which specify that—

(i) All estimates of ambient concentrations required under paragraph (1) shall be based on the applicable air quality models, data bases, and other requirements specified in the *Guideline on Air Quality Models* . . .

(ii) Where an air quality impact model specified in the *Guideline on Air Quality Models* is inappropriate, the model may be modified or another model substituted.

(iii) A substitution or modification of a model shall be subject to public comment procedures developed in accordance with paragraph (r) of this section.

(iv) Written approval of the Administrator must be obtained for any modification or substitution.

(v) Methods like those outlined in the *Workbook for the Comparison of Air Quality Models* . . . should be

a model designated by the guideline is inappropriate, it may be modified or another model substituted,<sup>73</sup> but such changes are subject to public notice and comment procedures.<sup>74</sup> Moreover, methods prescribed in an EPA-prepared workbook<sup>75</sup> are to be used to determine whether substituted models are comparable to those laid out in the guideline.<sup>76</sup> Petitioners read the regulations to require a demonstration that an industry-proposed model shares the individual technical aspects of one of the models approved in the guideline.<sup>77</sup> They suggest that even if a proposed model possesses greater predictive accuracy in particular circumstances than the reference model, it may not be employed unless it reproduces the technical shortcomings in the design of the standard model. According to petitioners, comments criticizing this emphasis on strict comparability, to the detriment of precision in estimating pollution concentrations, went unanswered.<sup>78</sup>

---

used to determine the comparability of air quality models.

(2) The *Guideline on Air Quality Models* is incorporated by reference. . . .

40 C.F.R. § 51.24(m) (1978); see 40 C.F.R. § 52.21(m) (1978) (same standards with respect to models used by source owners or operators to demonstrate compliance with the increments).

<sup>73</sup> See note 72 *supra*.

<sup>74</sup> See note 72 *supra*.

<sup>75</sup> Environmental Protection Agency, *Workbook for the Comparison of Air Quality Models* (May, 1978).

<sup>76</sup> 40 C.F.R. § 51.24(m)(1)(v) (1978); 40 C.F.R. § 52.21(m)(2) (1978).

<sup>77</sup> Brief for Industry Petitioners on Modeling at 14-15, 23 (quoting a comment submitted by the American Petroleum Institute).

<sup>78</sup> *Id.* at 14-15, 23, 26.

EPA asserts, and we agree, that petitioners misread the regulations and the accompanying guideline.<sup>79</sup> "[N]ot intended to be a compendium of modeling techniques,"<sup>80</sup> the guideline explicitly states its role:

[t]his guide makes specific recommendations concerning (1) air quality models, (2) data bases and (3) general requirements for concentration estimates. . . . However, it may be found that (1) the recommended air quality model is not appropriate for a particular application, (2) the required data base is unavailable, or (3) a better model or analytical procedure is available and applicable. In such cases, alternatives indicated in this guide or other data, models and techniques deemed appropriate by the Regional Administrator may be used. Thus, even though specific recommendations are made, they should not be considered rigid requirements. The preferred model is that which best simulates atmospheric transport and dispersion in the area of interest.<sup>81</sup>

In sum, industry's criticism proceeded from a faulty premise and was firmly rebutted by the guideline, which was incorporated in the final regulations.

Since the models prescribed in the guideline are presumptively, not conclusively, appropriate, and EPA welcomes use of more accurate models, it could be argued that the modeling regulations are "general statements of policy" exempt under Section 4 from notice and comment procedures,<sup>82</sup> whence comes the duty to respond to sig-

<sup>79</sup> Brief for Respondents at 214.

<sup>80</sup> Guideline, *supra* note 69, at 1.

<sup>81</sup> Guideline, *supra* note 69, at 1-2.

<sup>82</sup> 5 U.S.C. § 553(b) (3) (A) (1976) provides that "[e]xcept when notice or hearing is required by statute," the notice and comment requirement is inapplicable to "interpretative rules,

nificant comments.<sup>83</sup> We have heretofore noted that

[t]he critical distinction between the substantive rule and a general statement of policy is the different practical effect that these two types of pronouncements have in subsequent administrative proceedings. . . . When the agency applies the policy in a particular situation, it must be prepared to support the policy just as if the policy statement had never been issued.<sup>84</sup>

As the modeling regulations illustrate, the line between binding, substantive rules and merely informational announcements on how the agency plans to exercise a discretionary power is not always bright. But the guideline requires that "deviations [from the specified models] be fully supported and documented,"<sup>85</sup> and in our view the models designated in the guideline are thus granted sufficient weight in subsequent proceedings to remove the regulations from the ambit of policy statements and the exemption therefor. In any event, it bears repeating that the duty to respond to significant comments finds a statutory basis in required notice and comment procedures, for "the opportunity to comment is meaningless unless the agency responds to significant points raised

---

general statements of policy, or rules of agency organization, procedure or practice. . . ."

<sup>83</sup> *Home Box Office, Inc. v. FCC*, 185 U.S.App.D.C. 142, 168, 567 F.2d 9, 35 (1977); *Automotive Parts & Accessories Ass'n v. Boyd*, 132 U.S.App.D.C. 200, 208, 407 F.2d 330, 338 (1968).

<sup>84</sup> *Pacific Gas & Elec. Co. v. FPC*, 164 U.S.App.D.C. 371, 376, 506 F.2d 33, 38 (1974); see *Texaco, Inc. v. FPC*, 412 F.2d 740, 744 (3d Cir. 1969); *Air Port Comm'n v. CAB*, 300 F.2d 185, 188 (4th Cir. 1962); *Pacific Lighting Serv. Co. v. FPC*, 518 F.2d 718, 719 (9th Cir.), cert. denied, 423 U.S. 1000, 96 S.Ct. 432, 46 L.Ed.2d 376 (1975).

<sup>85</sup> Guideline, *supra* note 69, at 2.

by the public.”<sup>86</sup> And, for the case at bar, Section 320 of the Clean Air Act Amendments of 1977 explicitly affords interested persons that opportunity with respect to the proceedings of the special modeling conference,<sup>87</sup> and submitted comments must be included in the docket established for promulgation and review of regulations pertaining to air quality modeling.<sup>88</sup> Comments standing unaddressed thus may well leave a reviewing court unable to say that the agency has considered all relevant factors.<sup>89</sup>

The second group of allegedly un rebutted but significant comments submitted by industry spokesmen charges undue conservatism in assumptions adopted in the guideline. Industry states that the guideline assumes “maximum loading, worst case meteorology, ground reflection, no travel time considerations and minimum plume rise,”<sup>90</sup>

<sup>86</sup> *Home Box Office, Inc. v. FCC*, *supra* note 80, 185 U.S. App.D.C. at 168-169, 567 F.2d at 35-36; see *Portland Cement Ass'n v. Ruckelshaus*, 158 U.S.App.D.C. 308, 326-327, 486 F.2d 375, 393-394 (1973), *cert. denied*, 417 U.S. 921, 94 S.Ct. 2628, 41 L.Ed.2d 226 (1974).

<sup>87</sup> 42 U.S.C. § 7620(c) (Supp. I 1977), quoted in note 66 *supra*.

<sup>88</sup> 42 U.S.C. § 7620(d) (Supp. I 1977), quoted in note 66 *supra*.

<sup>89</sup> See *Citizens to Preserve Overton Park v. Volpe*, *supra* note 8, 401 U.S. at 420, 91 S.Ct. at 823-824, 28 L.Ed.2d at 153; *Home Box Office, Inc. v. FCC*, *supra* note 83, 185 U.S.App.D.C. at 169, 567 F.2d at 36; *Natural Resources Defense Council v. United States Nuclear Regulatory Comm'n.* 178 U.S. App.D.C. 336, 346, 547 F.2d 633, 646 (1976), *rev'd on other grounds sub nom. Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 98 S.Ct. 1157, 55 L.Ed.2d 460 (1978); *Greater Boston Television Corp. v. FCC*, 143 U.S.App.D.C. 383, 393, 444 F.2d 841, 851 (1970), *cert. denied*, 403 U.S. 923, 91 S.Ct. 2233, 29 L.Ed.2d 701 (1971).

<sup>90</sup> Brief for Industry Petitioners on Modeling at 22 (citing comments submitted on behalf of Arizona Public Service Company and American Petroleum Institute).

and that together they result in drastic overprediction of pollution concentrations. These comments were critical of the assumptions underlying the proposed models, not the techniques they incorporate. No objection has been raised against EPA's view that the models proposed, though flawed, reflect faithfully the present technological state of the art.<sup>91</sup>

Industry's position, we think, is overdrawn. The guideline first recommends use of a preliminary screening technique to single out, with minimum effort, those emission sources that clearly will not consume the remaining increment.<sup>92</sup> Only if the source might threaten an increment exceedance is more sophisticated and expensive modeling required. The diffusion models specified are designed to make an accurate translation from source emissions to ambient air concentration levels at carefully selected places, called receptor sites, away from the

---

<sup>91</sup> Guideline, *supra* note 69, at 18 ("[t]he models recommended in this guideline are simply those which are (1) representative of the state-of-the-art for atmospheric simulation models and (2) most readily available to air pollution control agencies"). Industry petitioners do point out that some commentators have expressed serious reservations about one of the models. Brief for Industry Petitioners on Modeling at 25. These may prove to be persuasive to EPA, however, as all the Guideline says about this model is that it may be "applicable to some complex terrain situations . . . ." Guideline, *supra* note 69, at 19. Congress recognized the technical difficulties in modeling emissions across complex terrain and expected EPA to develop and use the most appropriate models for such situations. See 123 Cong. Rec. S13708 (daily ed. Aug. 4, 1977) (colloquy between Senator Muskie and Senator Garn).

<sup>92</sup> Guideline, *supra* note 69, at 2, 19-20. Recommended are the screening techniques summarized in EPA's Guidelines for Air Quality Maintenance Planning and Analysis, Vol. 10: Procedures for Evaluating Air Quality Impact of New Stationary Sources (Oct., 1977).

sources.<sup>93</sup> These models depend upon procurement and analysis of data concerning background pollution, load-emission conditions at the sources, and topographical and meteorological conditions in the area.<sup>94</sup> The guideline does not, contrary to petitioners' intimation, require use of the highest of all estimated concentrations at any site. Rather, the "highest of second-highest concentrations for a field of receptors" is generally employed to predict increment consumption.<sup>95</sup> This concentration is obtained by (a) estimating the short-term concentration at each receptor site in the field, (b) discarding the highest estimated concentration at each site, and (c) identifying the highest of the remaining concentration estimates from the field—the result referred to as the "highest, second-highest" concentration.<sup>96</sup> Where monitored air-quality data indicate impacts greater than predicted by models using highest, second-highest estimated concentrations, the measured concentration levels are utilized.<sup>97</sup> And if the regional administrator determines that there is a lack of confidence in the highest, second-highest concentration standard because of data or model inadequacies, he may require use of the highest

---

<sup>93</sup> See, e.g., *Sierra Club v. EPA*, 176 U.S.App.D.C. 335, 357, 540 F.2d 1114, 1136 (1976), *remanded sub nom. Montana Power Co. v. EPA*, 434 U.S. 809, 98 S.Ct. 42, 54 L.Ed.2d 66 (1977); *Mision Indus., Inc. v. EPA*, 547 F.2d 123, 123-129 (1st Cir. 1976); *Cincinnati Gas & Elec. Co. v. EPA*, 578 F.2d 660, 661 (6th Cir. 1978), *cert. denied*, — U.S. —, 99 S.Ct. 1017, 59 L.Ed.2d 72 (1979); W. Rodgers, *Environmental Law* 237 (1977).

<sup>94</sup> Guideline, *supra* note 69, at 27-37.

<sup>95</sup> *Id.* at 8.

<sup>96</sup> *Id.*

<sup>97</sup> *Id.* at 9.

estimated concentrations until the necessary data are acquired or analytical techniques are improved.<sup>98</sup>

EPA's resort to the highest, second-highest concentration level is not inexplicable. Models are designed to aid EPA in its task of protecting the statutorily-prescribed increments and, as the guideline states, "[t]hese maximum allowable increases in pollutant concentrations may be exceeded only once per year, except for the annual increment."<sup>99</sup> Thus the guideline points out why the models embrace rather conservative assumptions not likely to hold true on many days: protection of the increments, the statute says, is a well-nigh continuous responsibility, not a casual goal to be assured only on typical days.

Industry petitioners' remaining set of complaints does recognize the need to fit the models into the statutory scheme. They submitted comments averring that Congress intended to ratify the modeling analysis employed in a 1975 report by EPA and the Federal Energy Administration<sup>100</sup> assessing the impact of the PSD program on the electric utility industry.<sup>101</sup> They point out ways in which the models selected in the guideline are more conservative than that employed in the 1975 EPA-FEA study.<sup>102</sup>

<sup>98</sup> *Id.* at 9-10.

<sup>99</sup> *Id.* at 11. See § 163(a), (b), 91 Stat. 732, 42 U.S.C. § 7473(a), (b) (Supp. I 1977).

<sup>100</sup> Environmental Protection Agency & Federal Energy Administration, *An Analysis of the Impact on the Electric Utility Industry of Alternative Approaches to Significant Deterioration* (Oct., 1975).

<sup>101</sup> Brief for Industry Petitioners on Modeling at 16-21 (discussing comments submitted on behalf of Utility Air Regulatory Group and other industry interests).

<sup>102</sup> They suggest that the EPA-FEA report, unlike the guideline, relied heavily on a limited mixing model for Class I

This argument is belied by the facts. Congress itself changed some of the assumptions on which the EPA-FEA report was based. To take an obvious example, Congress made the increments used in both the House bill and the study more stringent.<sup>103</sup> Congress also specified the conference and comment procedures in order to prod EPA into revising its models to reflect growing scientific sophistication.<sup>104</sup> Moreover, industry's interpretation of the legislative history is itself one-sided. It is true that Congressman Broyhill indicated that the House receded from insistence upon the provisions of an amendment, which would have authorized temporary increment exceedances in Class II areas, upon assurances that the EPA-FEA study demonstrated that "powerplants up to 6,000 megawatts could be built" under the bill.<sup>105</sup> But this proves nothing, for even according to petitioners'

---

impact analysis, and that the guideline adopts conservative assumptions while the earlier report was based "on the use of average (typical) conditions." Brief for Industry Petitioners on Modeling at 16. The limited mixing model has been retained as a screening model. See Guidelines for Air Quality Maintenance Planning and Analysis, *supra* note 92, at 4-12, 4-38 to 4-40. And the more conservative assumptions were warranted by the new statutory framework. See notes 90-99 *supra* and accompanying text.

<sup>103</sup> Petitioners' representative at the December, 1977, modeling conference acknowledged this crucial change. Transcript of Modeling Conference at 81 (Dec. 15, 1977) (remarks of Dr. Mahoney), quoted *infra* note 106.

<sup>104</sup> See 42 U.S.C. § 7460 (Supp. I 1977), quoted *supra* note 66. See also H.R. Rep. No. 564, 95th Cong., 1st Sess. 153 (1977) (conference report) ("[t]he conference adopted the air quality modeling conference in the House bill and expects that EPA will seek the full participation of representatives of private and public interests").

<sup>105</sup> 123 Cong. Rec. H6667 (daily ed. Aug. 4, 1977) (remarks of Representative Broyhill); see also H.R. Rep. No. 294, 95th Cong., 1st Sess. 157 (1977).

representative, such a plant can be built under the EPA regulations.<sup>106</sup> Moreover, Senator McClure, an influential supporter of the Act, did remark that the bill would "make it impossible to build a 3,000-megowatt plant in southern Utah,"<sup>107</sup> yet the Senator recognized that the Act was not drafted in terms of either allowing or prohibiting sources of specified sizes, and that the Act's actual impact on particular sources could not be predicted: "[s]o we are taking something on faith. We are making the best judgment we can, without knowing what those models are going to show, without knowing what the science of modeling will do, without knowing what effects it may have on specific questions."<sup>108</sup> Senator Muskie agreed that "the best we can do is to try to define the broad parameters"<sup>109</sup> of what the Act will do.

We conclude that Congress did not direct the use of any particular diffusion models; rather, it expected EPA to develop and utilize the most accurate and feasible modeling techniques available. It also set largely inflexible increments for sulfur dioxide and particulates,

---

<sup>106</sup> [W]e find that this is entirely consistent with the new guidelines and that when the earlier results are scaled to the increment level limit finally adopted by Congress, plants up to 6,000 megowatt capacity could be built, if they adopt what we would call best available control technology, having very limited degradation, that is use of low sulfur Western coal with a scrubber . . . . We do find that the statement of the Congressional debate, that a 6,000 megowatt plant could be built is appropriate for that case.

Transcript of Modeling Conference at 81-82 (Dec. 15, 1977) (remarks of Dr. Mahoney).

<sup>107</sup> 123 Cong. Rec. S9269 (daily ed. June 9, 1977) (remarks of Senator McClure). This example concerned a Class I area.

<sup>108</sup> *Id.* (remarks of Senator McClure).

<sup>109</sup> *Id.* (remarks of Senator Muskie).

thus commanding the use of conservative assumptions on weather and other data input. In short, EPA's models do not contravene any discernible congressional directive. Comments of industrial spokesmen to the contrary thus raised relatively insubstantial questions of law, and consequently did not necessitate an agency reply.<sup>110</sup>

But though we today sustain EPA's modeling regulations, a final observation is in order. Of great importance is a reasoned agency response to substantial questions of fact, policy or science raised in comments on recommended models or in proposals to employ new techniques. In passing Part C of the Clean Air Act,<sup>111</sup> Congress evinced its determination to preserve the clean air regions of the Nation. Congress did not, however, ignore other vital economic and energy considerations.<sup>112</sup> Moreover, successful implementation of the balance struck by Congress will in large part depend on EPA's good sense in establishing and applying modeling guidelines. Modeling, the agency tells us, is on "the frontiers of scientific knowledge,"<sup>113</sup> but the lack of scientific certitude about modeling techniques increases rather than reduces the need for the agency to critically examine all substantial questions of fact and science emerging from the commenting process. EPA's guideline warns that all pro-

---

<sup>110</sup> See *Home Box Office, Inc. v. FCC*, *supra* note 83, 185 U.S.App.D.C. at 168-169 & n.58, 567 F.2d at 35-36 & n.58; *Portland Cement Ass'n v. Ruckelshaus*, *supra* note 86, 153 U.S.App.D.C. at 326-327, 486 F.2d at 393-394.

<sup>111</sup> 42 U.S.C. §§ 7470-7491 (Supp. I 1977).

<sup>112</sup> See, e.g., § 160(3), 91 Stat. 731, 42 U.S.C. § 7470(3) (Supp. I 1977); § 163(c), 91 Stat. 723, 42 U.S.C. § 7473(c) (Supp. I 1977).

<sup>113</sup> Brief for Respondents at 206, citing *Hercules, Inc. v. EPA*, No. 77-1248 (D.C. Cir. Nov. 3, 1978), slip op. at 41; *Industrial Union Dep't v. Hodgson*, 162 U.S.App.D.C. 331, 338, 499 F.2d 467, 474 (1974).

posed deviations from the endorsed model must be fully supported,<sup>114</sup> but this language should not be overemphasized, for the models presently specified in the guideline are concededly flawed.<sup>115</sup> Should scientific advances or better information permit a more accurate assessment of air quality, EPA should move to adopt the more accurate procedure, although it too may not be entirely free from fault.<sup>116</sup>

#### IV. STACK HEIGHT

Both ambient air quality standards and PSD increments are expressed in terms of permissible concentrations of pollutants at ground level.<sup>117</sup> The effect of a source's emissions on air quality in its vicinity, as gauged by these fundamental criteria, will be influenced by the altitude at which pollutants are released. A good many industrial facilities subject to the Clean Air Amendments

---

<sup>114</sup> Guideline, *supra* note 69, at 2.

<sup>115</sup> In many cases, solutions to the issues raised must rely on further scientific developments. Some inherently must rely on case-by-case technical judgments by qualified scientists. EPA is actively working in the areas of model validation and improvement, turbulence characterization and the use of representative meteorological data and will provide additional guidance on these areas as it becomes available.

43 Fed. Reg. 26399 (June 19, 1978). (explanation of final regulations). See also Guidelines, *supra* note 69, at 4-6.

<sup>116</sup> We would associate ourselves with the observation that "[d]ecisions which are not arbitrary and capricious in the light of existing knowledge may become so by the dint of scientific advances. By its use of estimations and sparse data, the EPA creates a continuing responsibility to develop, review and apply updated and more sophisticated information." *Texas v. EPA*, 499 F.2d 289, 301 n.16 (5th Cir. 1974).

<sup>117</sup> Industry Petitioners' Joint Statement of the Case at 3-4, 14-15.

of 1970<sup>118</sup> tried to take advantage of this phenomenon by building taller-than-necessary stacks in order to achieve greater dispersion of their emissions and thus comply with national ambient standards. This strategy was also in vogue among sources required to comply with EPA's 1974 PSD program.<sup>119</sup>

The Congress that enacted the Clean Air Act Amendments of 1977<sup>120</sup> was deeply concerned about the consequences to health and welfare of the use of tall stacks and other dispersion techniques.<sup>121</sup> It addressed the problem forcefully, not by prohibiting tall stacks, but by removing all existing regulatory incentives for constructing them.<sup>122</sup> Section 123(a) of the Act provides in relevant part that

---

<sup>118</sup> Clean Air Amendments of 1970, Pub.L. No. 91-604, 84 Stat. 1676.

<sup>119</sup> Promulgated pursuant to *Sierra Club v. Ruckelshaus*, 344 F.Supp. 253 (D.D.C. 1972), *aff'd*, 4 ERC 1815 (D.C. Cir. 1972), *aff'd by an equally divided Court sub. nom. Fri v. Sierra Club*, 412 U.S. 541, 93 S.Ct. 2770, 37 L.Ed.2d 140 (1973).

<sup>120</sup> Clean Air Amendments of 1977, Pub.L. No. 95-95, 91 Stat. 685.

<sup>121</sup> See, e.g., H.R. Rep. No. 564, 95th Cong., 1st Sess. 143-144 (1977) (conference report); H.R. Rep. No. 294, 95th Cong., 1st Sess. 81-94 (1977); 123 Cong. Rec. S9174-9175 (daily ed. June 8, 1977) (remarks of Senator Muskie). Related to the tall stacks problem, and addressed in similar fashion by virtue of §§ 123(a)(2) and 123(b), 91 Stat. 721, 42 U.S.C. §§ 7423(a)(2), (b) (Supp. I 1977), is the problem of intermittent controls, which involve extensive operation when meteorological conditions will best disperse the emissions and curtailed operations at other times. See W. Rodgers, *Environmental Law* 259 (1977) ("[t]he rhythm method, to be sure, is better than nothing but it is born of desperation and succeeds by chance").

<sup>122</sup> See notes 150-156 *infra* and accompanying text.

[t]he degree of emission limitation required for control of any air pollutant under an applicable implementation plan under [Title I] shall not be affected in any manner by—

(1) so much of the stack height of any source as exceeds good engineering practice (as determined under regulations promulgated by the Administrator) . . . .<sup>123</sup>

Industry petitioners read Section 123 as a ban only on administrative consideration of stacks taller than warranted by good engineering practice (GEP) as an alternative to emission limitations.<sup>124</sup> So, industry concedes, when a facility with a tall stack—a term that really covers a too-tall stack—seeks a permit and it must be determined whether that facility's emissions will threaten a violation of a national ambient standard or an increment exceedance, the calculation must be predicated on the false assumption that the stack has only GEP height.<sup>125</sup> EPA interprets the mandate of Section 123 more broadly, declaring that it further requires emissions from *all* preexisting sources with tall stacks that were built after the effective date of the 1970 Act, and hence were not grandfathered, to be modeled as though the emissions proceeded from GEP-height stacks when ascertaining the emission limitations to be imposed on new facilities.<sup>126</sup>

---

<sup>123</sup> § 123(a), 91 Stat. 721, 42 U.S.C. § 7423(a) (Supp. I 1977).

<sup>124</sup> Brief for Industry Petitioners on Stack Height at 11-12.

<sup>125</sup> *Id.*

<sup>126</sup> 42 Fed. Reg. 57460 (Nov. 3, 1977) (“[a]ny subsequent PSD reviews will have to be based on a GEP stack height for the applicant as well as for any sources which have received PSD approval”); see 40 C.F.R. § 52.21(h) (1978); 40 C.F.R. § 51.24(h) (1978) (provision appears to have been

Asked to resolve this dispute, "our task is to interpret the words of [Section 123] in light of the purposes Congress sought to serve."<sup>127</sup> Granting EPA's view a proper measure of deference,<sup>128</sup> we sustain its construction.

#### A. The 1970 Act and Tall Stacks

Under the Clean Air Act of 1970,<sup>129</sup> EPA was required, by Section 110(a)(2)(B), to approve a state implementation plan if it determined that the plan was "adopted after reasonable notice and hearing,"<sup>130</sup> and if "it include[d] emission limitations, schedules, and timetables for compliance with such limitations, and such other measures as may be necessary to insure attainment and maintenance of [the applicable] primary or secondary standard, including, but not limited to, land-use and

written so as to erroneously reach only grandfathered tall stacks).

<sup>127</sup> *Chapman v. Houston Welfare Rights Organization*, — U.S. —, —, 99 S.Ct. 1905, 1911, 60 L.Ed.2d 508, 516 (1979).

<sup>128</sup> We have noted that "[t]his deference is heightened when, as here, the interpretation is of a new statute by its implementing agency." *Ethyl Corp. v. EPA*, 176 U.S.App.D.C. 373, 403 n.64, 541 F.2d 1, 31 n.64 (*en banc*), cert. denied, 426 U.S. 941, 96 S.Ct. 2662, 49 L.Ed.2d 394 (1976), citing *Power Reactor Devel. Co. v. International Union of Elec., Radio and Mach. Workers*, 367 U.S. 396, 408, 81 S.Ct. 1529, 1535, 6 L.Ed.2d 924, 932 (1961); *United States v. Zucca*, 351 U.S. 91, 96, 76 S.Ct. 671, 674, 100 L.Ed. 964, 970 (1956); *United States v. American Trucking Ass'n*, 310 U.S. 534, 549, 60 S.Ct. 1059, 1067, 84 L.Ed. 1345, 1354 (1940); *Norwegian Nitrogen Prods. Co. v. United States*, 288 U.S. 294, 315, 53 S.Ct. 350, 358, 77 L.Ed. 796, 807 (1933); *Natural Resources Defense Council v. Train*, 166 U.S.App.D.C. 312, 326, 510 F.2d 692, 706 (1975).

<sup>129</sup> Pub.L. No. 91-604, 84 Stat. 1676.

<sup>130</sup> 42 U.S.C. § 1857c-5(a)(2) (1976).

transportation controls . . . .”<sup>131</sup> EPA initially permitted state plans to authorize tall stacks and other dispersion techniques<sup>132</sup> in lieu of emission limitations. The Fifth Circuit, however, ordered EPA to disapprove state plans endorsing this practice as inconsistent with Section 10(a)(2)(B)’s requirement of emission limitations constant in their operation,<sup>133</sup> and the Sixth<sup>134</sup> and Ninth Circuits<sup>135</sup> followed the Fifth Circuit’s construction of the 1970 Act.

### 3. EPA’s 1976 Tall-Stack Guidelines

Informed as well as chastened by these judicial decisions, EPA in early 1976 promulgated a guideline on the role of tall stacks.<sup>136</sup> The agency declared that “it is

<sup>131</sup> 42 U.S.C. § 1857c-5(a)(2)(B) (1976). Section 108(a)(2) of the 1977 Amendments, 91 Stat. 693, revised this subsection by substituting “transportation controls, air quality maintenance plans and preconstruction review of direct sources of air pollution as provided in subparagraph (D)” for “land use and transportation controls.” See 42 U.S.C. § 7410(a)(2)(B) (Supp. I 1977).

<sup>132</sup> See 37 Fed. Reg. 10859 (May 31, 1972), *rev’d in relevant part, Natural Resources Defense Council v. EPA*, 489 F.2d 390 (5th Cir. 1974), *rev’d on other issues sub nom. Train v. Natural Resources Defense Council*, 421 U.S. 60, 95 S.Ct. 1470, 43 L.Ed.2d 731 (1975).

<sup>133</sup> *Natural Resources Defense Council v. EPA*, *supra* note 132, 489 F.2d at 406-411.

<sup>134</sup> *Big Rivers Elec. Corp. v. EPA*, 523 F.2d 16, 20-22 (6th Cir. 1975), *cert. denied*, 425 U.S. 934, 96 S.Ct. 1663, 48 L.Ed.2d 175 (1976).

<sup>135</sup> *Kennecott Copper Corp. v. Train*, 526 F.2d 1149, 1151-1160 (9th Cir. 1975), *cert. denied*, 425 U.S. 935, 96 S.Ct. 1665, 48 L.Ed.2d 176 (1976).

<sup>136</sup> Environmental Protection Agency, Legal Interpretation and Guideline Concerning Stack Height Increases as a Means of Meeting Federal Ambient Air Quality Standards (Jan. 6, 1976).

clear that Congress did not intend increased stack height and supplementary control systems to be used as a means of attaining national ambient air quality standards where constant emission reduction controls were available."<sup>137</sup> On the other hand, EPA ruled, dispersion techniques were within the congressional intentment "when constant controls are not available."<sup>138</sup>

The guideline divided emission sources into three categories and imposed different technological requirements on each group: (1) sources in existence prior to the latest date by which state plans were to be submitted to EPA under the 1970 Act; (2) sources receiving permits after the Fifth Circuit decision but before issuance of the guideline; (3) sources receiving permits after release of the EPA notice.<sup>139</sup> The guideline was clear, however, that if any source applied the best available control technology it would be credited for the full dispersive effect of its tall stack.<sup>140</sup> Indeed, said EPA, "[s]o long as stack height is not used *in lieu of* emission reduction, the Agency encourages tall stacks as the means of further minimizing the effects of emissions on ground level concentrations."<sup>141</sup>

### C. The 1977 Amendments

Industry petitioners suggest, though somewhat halfheartedly, that the Ninety-fifth Congress "ratified the general thrust" of the EPA guideline when it enacted Section 123.<sup>142</sup> They concede, however, that unlike the

---

<sup>137</sup> *Id.* at 1.

<sup>138</sup> *Id.*

<sup>139</sup> *Id.* at 2-4.

<sup>140</sup> *Id.*

<sup>141</sup> *Id.* at 4 (emphasis in original).

<sup>142</sup> Brief for Industry Petitioners on Stack Height at 10. It would be fair to say that Congress generally approved of the

guideline, Section 123 requires that GEP stack height be assumed in calculating emission limitations for an individual source even though it applies the best available control technology.<sup>143</sup> But, they argue, once the emission limitation for a source is properly set, Congress intended that the pollutants from that source be modeled as though emitted from the existing tall stack in order to reflect its actual impact on air quality. As already stated,<sup>144</sup> EPA, in its November 3, 1977, final rule, adopted the contrary reading of the statute.<sup>145</sup>

The language of Section 123(a), though not necessarily reflective of a conscious resolution of the point in dispute, is certainly more amenable to EPA's construction.<sup>146</sup> The section specifies that the degree of emission limitation required for control of any air pollutant "shall not be affected in *any manner* by . . . so much of the stack height of *any source* as exceeds good engineering practice . . . ." <sup>147</sup> The term "emission limitation" includes emission standards, such as increments and national ambient air quality standards.<sup>148</sup> The interpretation urged

---

court decisions. See H.R. Rep. No. 294, 95th Cong., 1st Sess. 91 (1977). It would not be accurate to say that Congress simply codified the holdings and dicta of those decisions in § 123.

<sup>143</sup> Brief for Industry Petitioners on Stack Height at 11.

<sup>144</sup> See note 126 *supra* and accompanying text.

<sup>145</sup> See note 126 *supra*.

<sup>146</sup> See cases cited *supra* note 39.

<sup>147</sup> 42 U.S.C. § 7423(a)(1) (Supp. I 1977) (emphasis supplied).

<sup>148</sup> § 302(k), 91 Stat. 770, 42 U.S.C. § 7602(k) (Supp. I 1977). The House report, H.R. Rep. No. 294, 95th Cong., 1st Sess. 92 (1977), states that "[b]y defining the terms 'emission limitation,' 'emission standard,' and 'standard of performance,' the committee has made clear that constant or con-

by industry petitioners contravenes the natural import of these words, as it would have the degree of emission limitation required for a source reduced by the fact that neighboring, preexisting sources with tall stacks disperse their emissions over a broader region, thus resulting in lower concentrations in the immediate vicinity.

The policy of Section 123, as gleaned from examination of its genesis and progress in Congress, is also supportive of EPA's interpretation. This provision originated in the House,<sup>149</sup> and the 1977 House Report dealt extensively with the problem of dispersion techniques.<sup>150</sup> In addition to disapproving tall stacks and other dispersion-dependent techniques in lieu of constant controls,<sup>151</sup> the House Report detailed some independently deleterious effects of tall stacks. Among other things, the report noted that tall stacks, by increasing the transportation of pollutants, may lead to production of derivative pollutants, such as suspended sulfates and nitrates, which pose a greater health hazard than the parent compounds.<sup>152</sup> Tall stacks also transport pollution problems to distant areas and states "where it is too late to control the pollution."<sup>153</sup>

In the upper chamber, Senator Muskie spoke at length on the tall stacks problem.<sup>154</sup> Contrary to petitioners'

tinuous means of reducing emissions must be used to meet these requirements."

<sup>149</sup> See H.R. Rep. No. 564, 95th Cong., 1st Sess. 143-144 (1977) (conference report).

<sup>150</sup> H.R. Rep. No. 294, 95th Cong., 1st Sess. 81-94 (1977).

<sup>151</sup> *Id.*

<sup>152</sup> *Id.* at 33-34. The report also suggested that harmful acid rain appears to be associated with tall stacks. *Id.* at 85-86.

<sup>153</sup> *Id.* at 84-85.

<sup>154</sup> 123 Cong. Rec. S9174-9175 (daily ed. June 8, 1977) (remarks of Senator Muskie).

suggestion,<sup>155</sup> EPA's 1976 guideline was not beyond congressional dissatisfaction. Senator Muskie expressed this sentiment:

Far from prohibiting the construction of tall stacks or the use of intermittent controls, the guidelines provide that once minimal emission control requirements are met, polluters are encouraged to substitute unlimited stack height for any further control of emissions.

As the courts have held, the act prescribes how air quality standards must be met—neither EPA nor the States may permit a proposed plan to meet the requirements by using tall stacks or other dispersion devices or techniques.

A policy of encouraging 'tall stacks' will increase the burden of pollution. Long-range transport of pollutants will be exacerbated. There is no support in the Clean Air Act for such a policy. Certainly such a policy would be wholly inconsistent with the policy to prevent significant deterioration.<sup>156</sup>

The firm congressional resolve to remove all regulatory incentives for the construction of tall stacks bolsters EPA's reading of Section 123, for the position urged by industry petitioners would encourage, though to a lesser degree than the 1976 guideline, the use of such stacks

---

<sup>155</sup> See note 142 *supra* and accompanying text.

<sup>156</sup> 123 Cong. Rec. S9175 (daily ed. June 8, 1977) (remarks of Senator Muskie). The Senator also noted that a report by "the National Academies of Science of Engineering found that dispersion measures may exacerbate the formation in the atmosphere of acid sulfates and nitrates from the sulfur and nitrogen oxides emitted from fuel-burning sources. These derivative pollutants are thought to be more toxic forms than the oxides of sulfur and nitrogen that are actually emitted at the smokestack and are measured in the vicinity of the source." *Id.* at S9174.

and other dispersion methods. A company may well wish to expand by building a new facility close to an existing one, and if the older facility had a tall stack and if petitioners' interpretation of Section 123 were to prevail, the new facility would find it easier to comply with non-deterioration and national ambient standards. Additionally, operating permits are not irrevocable, and by use of a tall stack a facility would lessen pollution concentrations in its own air quality region and render it less likely that violations of national standards or increment exceedances—which would necessitate further controls or possibly partial or complete shutdown of the facility<sup>157</sup>—will occur.

Industry petitioners make three points which, they submit, reveal the absurdity<sup>158</sup> of EPA's interpretation of Section 123. First, they bitterly complain of artificial assumptions which in their view unnecessarily complicate administration of the federal pollution regulatory system.<sup>159</sup> One might concur in petitioners' assessment, but a sufficient answer is that Congress introduced a number of such elements into the system. For example, the baseline is not only a snapshot of pollution on the date of the first permit application, but it must be reduced to exclude emissions from major operating facilities on which construction commenced after January 6, 1975, and increased to include the projected emissions of sources not

---

<sup>157</sup> See Part IV of Judge Leventhal's Opinion.

<sup>158</sup> Of course, an absurd construction is to be avoided if at all possible. *E.g.*, *United States v. Menasche*, 348 U.S. 528, 538-539, 75 S.Ct. 513, 520, 99 L.Ed. 615, 624 (1955); *Melong v. Micronesian Claims Comm'n*, 186 U.S.App.D.C. 391, 395, 569 F.2d 630, 634 (1977); *Quinn v. Butz*, 166 U.S.App.D.C. 363, 373, 510 F.2d 743, 753 (1975).

<sup>159</sup> *E.g.*, Brief for Industry Petitioners on Stack Height at 14-16; Transcript of Oral Argument 128-129 (Apr. 20, 1979).

yet in operation as of the date of the first permit application but on which construction began prior to January 6, 1975.<sup>160</sup> There is, indeed, a degree of artificiality in the modeling of tall-stack emissions as though they came from a GEP stack, but indisputably that is what Congress envisioned.

Second, petitioners point out that under Section 123(c) a stack height in excess of two and one-half times the height of the emission source may be considered a GEP

---

<sup>160</sup> See notes 21-43 *supra* and accompanying text. Of course, as EPA has recognized, 43 Fed. Reg. 26400 (June 19, 1978); 42 Fed. Reg. 57460 (Nov. 3, 1977); Brief for EPA at 186-187, emissions from tall-stack sources that have been included in the definition of baseline under § 169(4) do not consume the available increment; their actual emissions as of the time of the first permit application are grandfathered. See Parts I, II *supra*. This consequence of the baseline definition does not conflict with § 123(a), for these grandfathered emissions do not affect the "degree of emission limitation required" for applicants for PSD permits. Nor does it render the December 31, 1970, cutoff in § 123 nugatory, for § 123 is not in Part C (PSD), and the statutory tall-stacks policy is not confined to the nondeterioration program but rather is applicable to the entire range of programs developed pursuant to the Clean Air Act. This point was not made clear in our *per curiam* opinion, *Alabama Power Co. v. Costle*, No. 78-1006 (D.C. Cir. June 18, 1979), at 40-43, as industry petitioners have pointed out in a petition for reconsideration. On the other hand, as we have explained in our discussion of the fuel-switches issue, see notes 19-56 *supra* and accompanying text, only the actual emissions of a major source operating on the date of the baseline determination and on which construction commenced prior to January 6, 1975, are grandfathered; additional emissions from such a source consume the increment. Thus, if non-baseline emissions from such a source proceed from a taller-than-GEP stack not in existence before December 31, 1970, they consume the increment as though they were emitted from a GEP stack. In short, § 123's tall-stacks policy, for purposes of the nondeterioration program, applies to non-baseline emissions of nongrandfathered stacks.

stack only if the "owner or operator" demonstrates that such height is "necessary to insure that emissions from the stack do not result in excessive concentrations of any air pollutants in the immediate vicinity of the source as a result of atmospheric downwash, eddies and wakes which may be created by the source itself, nearby structures or nearby terrain obstacles . . . ." <sup>161</sup> Petitioners spot a lacuna in this statutory passage, which, they urge, reveals the error of EPA's construction: only the owner or operator of a source can demonstrate that a very tall stack is really GEP height. <sup>162</sup> The owner of a proposed facility cannot show, they say, that preexisting tall stacks in the area in which he plans to build are necessary to avoid downwash, and this may preclude obtention of a permit.

We believe petitioners exaggerate the problem. Tall-stack facilities existing before the date of enactment of the Clean Air Act Amendments of 1970 are grandfathered; <sup>163</sup> their emissions are modeled at actual stack height for all purposes. On the other hand, Congress felt

---

<sup>161</sup> § 123(c), 91 Stat. 721, 42 U.S.C. § 7423(c) (Supp. I 1977).

<sup>162</sup> Transcript of Oral Argument 128-131 (Apr. 20, 1979).

<sup>163</sup> The tall-stacks policy of § 123(a) is expressly made inapplicable "with respect to stack heights in existence before the date of enactment of the Clean Air Amendments of 1970 or dispersion techniques implemented before that date." § 123(a), 91 Stat. 721, 42 U.S.C. § 7423(a) (Supp. I 1977). There is also a limited exemption for coal-fired electric generating facilities. See *id.* In addition, §§ 113(d) and 119 permit some use of dispersion techniques under specified conditions. See § 113(d), 91 Stat. 705, 42 U.S.C. § 7413(d) (Supp. I 1977); § 119, 91 Stat. 712, 42 U.S.C. § 7419 (Supp. I 1977). Moreover, with respect to the nondeterioration program, the actual emissions from tall stacks of major operating facilities on which construction commenced prior to January 6, 1975, are grandfathered into the baseline. See note 160 *supra*.

that since the 1970 Act "prohibited tall stacks as a final compliance method; . . . sources which raised their stacks or constructed tall stacks after the date of enactment should [not] be eligible for any credit."<sup>164</sup> It will, however, be in the interest of all post-1970 facilities with tall stacks to demonstrate, if possible, that their excess height is justified by downwash problems, for such sources may be subjected to extensive regulatory measures in the event of increment exceedances or violation of national standards.<sup>165</sup> If a source makes such a demonstration, its emissions will be modeled at actual stack height in subsequent permit proceedings.

Lastly, industry petitioners observe that the artificial assumptions injected into the environmental protection program by EPA's construction of Section 123 will lead to underprediction of pollution levels in areas to which emissions from tall stacks are transported.<sup>166</sup> Surely Congress did not intend its tall-stacks policy to preclude identification of areas with real pollution problems, the petitioners persuasively urge, but this, they say, is the consequence of EPA's fallacious construction of Section 123.<sup>167</sup> As explained in Judge Leventhal's opinion,<sup>168</sup> however, Congress afforded EPA authority to order revision of state implementation plans *whenever* the increments or the national standards are actually being

<sup>164</sup> H.R. Rep. No. 294, 95th Cong., 1st Sess. 93 (1977).

<sup>165</sup> See Part IV of Judge Leventhal's Opinion.

<sup>166</sup> Reply Brief for Industry Petitioners on Stack Height at 6-8.

<sup>167</sup> This assumes—and we do not pass on the validity of the assumption—that EPA must interpret § 123(a) consistently, despite the fact that the policy of the provision may not apply to the case of underprediction of pollution in areas to which emissions from tall stacks migrate.

<sup>168</sup> See Part IV of Judge Leventhal's Opinion.

violated.<sup>169</sup> This residual authority ensures that the tall-stacks policy need not hamper attainment and maintenance of federally-prescribed pollution standards everywhere.

In summary, EPA's reading of Section 123(a) is preferable as a matter of simple English to petitioners', is soundly supported by the legislative history, and is not belied by other provisions or policies of the Clean Air Act. Granting EPA's interpretation due deference,<sup>170</sup> it must be sustained.<sup>171</sup>

---

<sup>169</sup> *Id.*

<sup>170</sup> See cases cited *supra* notes 38, 128.

<sup>171</sup> Petitioners have urged us to defer our ruling on EPA's interpretation of § 123(a) until completion of a pending rule-making proceeding designed to implement § 123, and which will define, among other things, GEP height. 44 Fed. Reg. 2608 (Jan. 12, 1979) (proposed rules). That proceeding does not involve the question we decide today—the propriety of modeling emissions from tall stacks at GEP height when calculating emission limitations for later sources. EPA's final position on the question under review here was announced in November, 1977, 42 Fed. Reg. 58460 (Nov. 3, 1977). We perceive no merit in petitioners' deferral request.

WILKEY, *Circuit Judge*: This part of our opinion reviews several interrelated regulatory provisions<sup>1</sup> promulgated by the Environmental Protection Agency under the Clean Air Act, as amended in 1977.<sup>2</sup> These provisions fall within five topical categories: I. EPA's definition of pollution-emitting "sources" subject to rules governing the Prevention of Significant Deterioration (PSD)<sup>3</sup> of air quality ("source definition" issue); II. EPA's definition of the term "modification" of stationary sources for the purposes of PSD, and the right of industries to offset pollution-increasing changes against pollution-decreasing changes in a single source without PSD review ("major modification" and "bubble" issues); III. the applicability of PSD to pollutants other than sulfur dioxide and particulate matter, and EPA's 100 and 250-ton per year emission threshold for each pollutant (pollutants subject to PSD and EPA's "major emitting facility" threshold); IV. EPA's inclusion of visible emission standards among emission limitations subject to best available control technology;<sup>4</sup> and V. administrative conditions imposed by EPA on each stage of a multi-phase construction project for which EPA issues a comprehensive construction permit (the definition of "commence construction" for phased projects).

---

<sup>1</sup> 40 C.F.R. §§ 51.24, 52.21 (1978).

<sup>2</sup> Pub. L. No. 88-206, 77 Stat. 392 (1963), as amended by Clean Air Act Amendments of 1977, Pub. L. No. 95-95, 91 Stat. 685 (1977) (codified at 42 U.S.C. §§ 7401-7642 (Supp. I 1977)). EPA's general rulemaking authority under the Act is provided in § 301, 42 U.S.C. § 7601 (Supp. I 1977).

<sup>3</sup> The Act's PSD provisions are set forth in Clean Air Act Title I, Part C, §§ 160-169A, 42 U.S.C. §§ 7470-7491 (Supp. I 1977). These are the principal provisions at issue in this case.

<sup>4</sup> See Clean Air Act § 169(3), 42 U.S.C. § 7479(3) (Supp. I 1977) (definition of "best available control technology").

## I. SOURCE DEFINITION

Pollution control measures enacted under the Clean Air Act's PSD program apply to major pollution-emitting facilities,<sup>5</sup> which are defined as certain types of "stationary sources" that emit or could emit 100 tons of pollutants per year, or "any other source" that could emit 100 tons.<sup>6</sup> The terms "stationary source" and "any other source," however, are not specifically defined in the PSD provisions of the Act. To fill this statutory definitional breach, EPA as part of comprehensive Clean Air Act regulations promulgated for the purposes of PSD the following definition:

"Source" means any structure, building, facility equipment, installation or operation (or combination thereof) which is located on one or more contiguous or adjacent properties and which is owned or operated by the same person (or by persons under common control).<sup>7</sup>

EPA also provided by regulation that:

Notwithstanding the source sizes specified in [the first sentence of Clean Air Act § 169(1), 42 U.S.C. § 7479(1) (Supp. I 1977), "major stationary source" means] any source which emits, or has the potential to emit, 250 tons per year or more of any air pollutant regulated under the Act.<sup>8</sup>

In this section of our opinion we consider three separate issues pertaining to the above regulatory definitions.

---

<sup>5</sup> Clean Air Act § 165(a), 42 U.S.C. § 7475(a) (Supp. I 1977).

<sup>6</sup> Clean Air Act § 169(1), 42 U.S.C. § 7479 (Supp. I 1977).

<sup>7</sup> 40 C.F.R. §§ 51.24(b)(4), 52.21(b)(4) (1978).

<sup>8</sup> *Id.* § 51.24(b)(1)(ii). See *id.* § 52.21(b)(1)(ii).

A. *Inclusion of "Equipment," "Operation," and "Combination Thereof" within EPA's Definition of "Source"*

We consider first whether EPA erred in defining "source" to include "any structure, building, facility, equipment, installation or operation (or combination thereof) . . . ." <sup>9</sup>

Petitioning Industry Groups <sup>10</sup> argue that by introducing the above italicized language into the regulatory definition of "source," EPA has subjected a wider range of pollution-emitting activities to the Act's PSD requirements than Congress intended. Industry groups fear that EPA will capitalize on its expansive definition of "source" by subjecting to PSD review every type of productive enterprise ranging from mining and forestry to commercial trains and ships.<sup>11</sup> There is a risk of an unlimited scope of PSD regulation which could follow from literal application of PSD to any "equipment" or "operation," and to any "combination" of, for example, equipment and operations, that meets minimum emission standards.

EPA, however, argues that Congress did not intend to confine PSD to a class of pollution-emitting entities so narrow as the four nonitalicized terms above. EPA considers it prudent to "err on the side of inclusiveness," in order to extend PSD to the range of activities it claims

---

<sup>9</sup> *Id.* §§ 51.24(b)(4), 52.21(b)(4) (emphasis added).

<sup>10</sup> We use the term "Industry Groups" throughout this opinion to refer generally to the numerous industry petitioners and intervenors. Likewise we use the term "Environmental Groups" to refer to the several environmental petitioners and intervenors.

<sup>11</sup> Industry Petitioners' Brief on Source Definition Issue at 10 [hereinafter cited as Industry Brief on Source Definition].

Congress intended, and in order to give notice to those who must apply for PSD permits.<sup>12</sup>

We find this definitional issue to be governed by the definition of "source" provided in Clean Air Act section 111(a)(3),<sup>13</sup> pertaining to the Act's new source performance standards (NSPS). Section 111(a)(3) provides that for the purposes of NSPS "[t]he term 'stationary source' means any *building, structure, facility, or installation* which emits or may emit any air pollutant."<sup>14</sup> In addition, section 111(a)(2) provides that for NSPS "[t]he term 'new source' means any stationary source, the construction or modification of which is commenced after [a specified time],"<sup>15</sup> thus incorporating into the term "source" the components of the term "stationary source." For NSPS the two terms become essentially interchangeable.

We find no support in the statute for the notion that Congress intended its definition of the term "source" as used in the PSD provision of the Act to differ from that provided for NSPS in section 111(a)(3). Though "stationary source" is not defined expressly for PSD in the Act, it had at the time of the 1977 Amendments a well-established meaning, which included the four terms "structure," "building," "facility," and "installation," but not "equipment," "operation," or "combination thereof."<sup>16</sup>

<sup>12</sup> See Brief for EPA at 55-56. See also 42 U.S.C. § 7411(a)(3) (Supp. I 1977).

<sup>13</sup> 42 U.S.C. § 7411(b)-(j) (Supp. I 1977).

<sup>14</sup> *Id.* § 7411(a)(3) (Supp. I 1977) (emphasis added).

<sup>15</sup> *Id.* § 7411(a)(2).

<sup>16</sup> EPA's NSPS regulations in effect at the time of the enactment of the Clean Air Act Amendments of 1977, 40 C.F.R. § 60 (1977), define the term "stationary source" as "any building, structure, facility or installation which emits or may emit any air pollutant and which contain any one or

Given no expression of any contrary intent in the Act or in the legislative history regarding these definitions, we must assume that the meaning of a particular term is to be consistent throughout the Act. This is especially true under present circumstances, where the subject term prior to enactment of the controversial language had assumed a particular definition under closely related statutory provisions.

In support of this conclusion we note that Clean Air Act section 169, which defines certain terms expressly for PSD, states in subsection (2) (C) that "[t]he term 'construction' when used in connection with any source or facility, includes the modification (*as defined in section 111(a)*) of any source or facility."<sup>17</sup> Section 111(a) (4), in turn, provides that the term "modification" means "any physical change in, or change in the method of operation of, a stationary source . . ." as that term is defined in section 111(a) (3).<sup>18</sup> Since several key sections of the Act apply PSD to the construction of new facilities,<sup>19</sup> those sections thereby incorporate the definition of "stationary source" used in section 111, at least with regard to source "modification." The PSD provisions thus indirectly incorporated the section 111 definition of "source" concerning modifications; we find it implausible to assume that the same definition of source does not

---

combination of [a variety of specified types of facilities]. *Id.* § 60.2(d). Similarly, EPA's definition of "stationary source" in its regulations for approval and promulgation of implementation plans, 40 C.F.R. § 52.01(a) (1977), refers to "any building, structure, facility, or installation which emits or may emit an air pollutant for which a national standard is in effect."

<sup>17</sup> Clean Air Act § 169(2) (C), 42 U.S.C. § 7479(2) (C) (Supp. I 1977) (emphasis added).

<sup>18</sup> Clean Air Act § 111(a) (4), 42 U.S.C. § 7411(a) (4) (Supp. I 1977).

<sup>19</sup> See, e.g., Clean Air Act §§ 165, 167, 42 U.S.C. §§ 7475, 7477 (Supp. I 1977).

apply to construction as well. Therefore, we hold that the term "source" retains a consistent meaning in all PSD provisions of the Act and that the applicable definition is provided in section 111.

EPA contends that the words "equipment," "operation," and "combination thereof" must be included in the definition of "source" for PSD, because the full range of industrial entities specifically made subject to PSD in section 169(1) cannot be comprehended within the definition of "source" provided in section 111(a)(3).<sup>20</sup> We do not agree. The four terms encompass all of the types of entities specified in the first sentence of section 169(1), as well as all entities and activities included on a longer list compiled by EPA from which the statutory list was drawn. Thus, for example, the components of the term "source" provided in section 111(a)(3) need not be interpreted so narrowly as to comprehend only those sources that emit pollutants through industrial "point" sources (such as smokestacks and chimneys). EPA has discretion to define the terms reasonably to carry out the intent of the Act, but not to go clear beyond the scope of the Act, as it has done here. Section 169(1) clearly does mean that a plant is to be viewed as a source; the section lists many types of plants as stationary sources. But EPA has discretion to define statutory terms reasonably so as to carry out the expressed purposes of the Act. We view it as reasonable, for instance, to define "facility" and "installation" broadly enough to encompass an entire plant.

In *ASARCO Inc. v. Environmental Protection Agency*, this court struck down the agency's defining source for NSPS as, *inter alia*, a combination of facilities. But that case allowed EPA broad discretion to define the statutory terms for "source," so long as guided by a reasonable application of the statute.<sup>21</sup> The agency has the same reasonable discretion here to refashion its regulations.

<sup>20</sup> See Brief for EPA at 57.

<sup>21</sup> 578 F.2d 319, 324 & n.17 (D.C. Cir. 1973).

B. *Extension of EPA's Definition of "Source" to Include Industrial Units Joined by Contiguity and Common Ownership*

EPA regulations provide that the term "source" shall mean any industrial unit "which is located on one or more contiguous or adjacent properties and which is owned or operated by the same person (or by persons under common control)." <sup>22</sup>

Industry Groups contend that Congress intended PSD review to apply only to "major industrial process facilities at specific plant sites" without grouping of such process facilities according to proximity or ownership, and that EPA's contiguity and common ownership language has expanded unlawfully the potential scope of PSD.<sup>23</sup> In *ASARCO*, this court held that EPA had no authority to attach a similar provision to the definition of "source" for the NSPS program, as defined in section 111 of the Act. That definition, however, was not expanded by any other part of the NSPS provisions or their legislative history. For this reason, the court in *ASARCO* concluded that the definition of "stationary source" in section 111(a)(3) as "any building, structure, facility or installation which emits or may emit any air pollutant" could not be administratively expanded to include an entire plant.<sup>24</sup>

With regard to PSD, however, Congress clearly envisioned that entire plants could be considered to be single "sources." Clean Air Act section 169(1) expressly provides that for the purposes of PSD the term "major emitting facility" means "any of the following stationary sources of air pollutants . . . : fossil-fuel fired steam electric *plants* . . . , Portland Cement *plants*, . . . iron

<sup>22</sup> 40 C.F.R. §§ 51.24(b)(4), 52.21(b)(4) (1978).

<sup>23</sup> See Industry Brief on Source Definition, *supra* note 11, at 23.

<sup>24</sup> 578 F.2d at 326-27.

and steel mill *plants*.”<sup>25</sup> In fact, fourteen different types of industrial “*plants*” are specifically cited in section 169(1) as types of “stationary sources” to which PSD is to apply.<sup>26</sup> By the terms of the PSD provisions, then, the *ASARCO* holding does not prevent aggregation of individual units of a plant into a single source.

Because of the limited scope afforded the term “source” in section 111(a)(3), however, EPA cannot treat contiguous and commonly owned units as a single source unless they fit within the four permissible statutory terms. To allow an entire plant or other appropriate grouping of industrial activity to be subject as a single unit to PSD, as Congress clearly intended, EPA should devise regulatory definitions of the terms “structure,” “building,” “facility,” and “installation” to provide for the aggregation, where appropriate, of industrial activities according to considerations such as proximity and ownership. We have no doubt that the term installation, for instance, is susceptible in its common usage to a reasonable interpretation that includes all the types of sources specified in the first sentence of section 169(1), as well as those intended by Congress to be reached in the second sentence of section 169(1).

---

<sup>25</sup> Clean Air Act § 169(1), 42 U.S.C. § 7479(1) (Supp. I 1977) (emphasis added).

<sup>26</sup> *Id.* A similar list of such industrial “plants” and “mills” was considered by Congress in drawing up NSPS requirements in § 111, and was considered as a part of the legislative history of § 111 by the court in *ASARCO*. See *ASARCO Inc. v. EPA*, 578 F.2d at 326 n.24. This list, however, was not incorporated into § 111 as it was in § 169(1). Consequently, the court in *ASARCO* found the legislative history on the question of whether an entire plant could be considered a single source for NSPS “a much less reliable guide than the words of the statute itself,” and concluded from the statute that the types of industrial units used to define “source” in § 111 could not be aggregated for the purposes of NSPS. *ASARCO Inc. v. EPA*, 578 F.2d at 326 n.24.

EPA's new definitions should also provide explicit notice as to whether (and on what statutory authority) EPA construes the term source, as divided into its several constituent units, to include the unloading of vessels at marine terminals and "long-line" operations such as pipelines, railroads, and transmission lines. We agree with Industry Groups that EPA has not yet given adequate notice as to whether it considers those industrial activities to be subject to PSD.

EPA has latitude to adopt definitions of the component terms of "source" that are different in scope from those that may be employed for NSPS and other clean air programs, due to differences in the purpose and structure of the two programs. The reasonableness of EPA's contiguity and common ownership criteria, in light of the new source definitions required, must await review until their application in specific circumstances.<sup>27</sup>

C. *EPA's Extension of PSD to All Sources with Potential Emissions of 250 Tons or More Per Year*

Petitioners object to EPA's definition of "major stationary source" to include any "source" with actual or potential emissions of 250 tons per year, regardless of physical size or production capacity of the source.<sup>28</sup> The statute leaves some ambiguity on this issue. Under sec-

---

<sup>27</sup> There is no danger that the limited opportunity for parties to petition for review under the Act will be forfeited by our decision not to resolve these issues here, since EPA's regulations as revised in light of this opinion will constitute new "final action" and trigger once again the review procedures of Clean Air Act § 307(b), 42 U.S.C. § 7607 (Supp. I 1977).

<sup>28</sup> Industry Groups also object to EPA's use of the term "major stationary source" in place of the statutory term "major emitting facility." This objection is without merit so long as the regulatory term is defined in a manner consistent with statutory requirements.

tion 169(1), the term "major emitting facility" includes twenty-eight specific types of industrial entities which can emit 100 tons per year or more of any air pollutant.<sup>29</sup> Four of these types of entities, however, are subject to PSD only if they meet additional operating capacity, or size, qualifications.<sup>30</sup> The second sentence of section 169(1) then states that major emitting facilities include "*any other source* with the potential to emit two hundred and fifty tons per year or more of any air pollutant."<sup>31</sup> EPA interprets the two sentences to mean that the four special entities are not exempt from PSD if they exceed the 250-ton threshold, even if they remain below the size qualifications.<sup>32</sup> To justify this interpretation, EPA emphasizes the mandate of the second sentence that PSD shall apply to "*any*" other source with the requisite potential to emit.<sup>33</sup> Industry Groups, on the other hand, stress that PSD shall apply only to any "*other*" source with the requisite potential to emit.<sup>34</sup> Industry Groups assume, in essence, that each generic type of industrial entity specified in the first sentence, regardless of size, was considered exclusively by Congress in the first sentence and cannot be included by EPA within the second.

Reasonable semantic arguments can be made on either side of this issue, and the EPA's interpretation is not unreasonable. While it may be uneconomical and impractical to apply PSD to small sources that emit a low level of pollutants, such as those sources, withdrawn from PSD

---

<sup>29</sup> Clean Air Act § 169(1), 42 U.S.C. § 7479(1) (Supp. I 1977).

<sup>30</sup> *Id.*

<sup>31</sup> *Id.* (emphasis added).

<sup>32</sup> See 40 C.F.R. §§ 51.24(b)(1)(ii), 52.21(b)(1)(ii) (1978).

<sup>33</sup> See Brief for EPA at 74.

<sup>34</sup> See, e.g., Industry Brief on Source Definition, *supra* note 11, at 36-37.

by the first sentence of section 169(1); it is less impractical to apply PSD to small sources that emit relatively higher levels of pollutants, such as those sources reached by the second sentence. The critical factor in pollution control is not the industrial output of a particular source, but its *pollution output*. As demonstrated by offshore oil spills, a great pollution hazard can be caused by a relatively small source.

Finally, and most conclusively, legislative history shows that Congress intended the contested sources to be subject to PSD. The two sentence definition of "major emitting facility" in section 169(1) resulted from the adoption of both a one sentence definition originating in the Senate and a one sentence definition originating in the House. The first sentence of section 169(1), which designated the twenty-eight types of entities to which PSD would apply, originated almost verbatim in Senate bills passed in 1976 and 1977.<sup>35</sup> The second sentence of section 169(1), which applies PSD to all other sources with potential to emit 250 tons per year of more of any pollutant, originated in House bills passed in 1976 and 1977 but with the pollution-emission minimum raised from 100 to 250 tons per year.<sup>36</sup> As noted in the applicable Conference Committee Report,<sup>37</sup> the House concurred in the adoption of the Senate provision contained in the eventual first sentence of section 169(1) "with a requirement that . . . a major emitting facility will also include fa-

---

<sup>35</sup> See S. REP. NO. 717, 94th Cong., 2d Sess. 221 (1976); S. REP. NO. 127, 95th Cong., 1st Sess. 219 (1977).

<sup>36</sup> See H.R. REP. NO. 1175, 94th Cong., 2d Sess. 358 (1976); H.R. REP. NO. 294, 95th Cong., 1st Sess. 439 (1977).

<sup>37</sup> This is the Conference Committee Report of 1976, which explained language later adopted into the Clean Air Act Amendments of 1977. See H.R. REP. NO. 1742, 94th Cong., 2d Sess. (1976).

cilities which have the capacity to emit 250 tons per year or more [of any air pollutant]"<sup>38</sup>—the language subsequently adopted in the second sentence. The Report does not suggest that those entities subject to size limitations in the definitional sentence borrowed from the Senate bill were to be excluded from the term "facilities," as defined by the sentence from the House.

We conclude that the definition from the House bill adopted by the Conference Committee as the second sentence of section 169(1) retains its universal character, thus comprehending *all* sources that meet the sole qualification specified in that sentence: that they have the "potential to emit two hundred and fifty tons per year or more of any air pollutant."<sup>39</sup> We therefore uphold EPA's extension of PSD to *all* sources with potential emissions of 250 tons or more per year.

## II. "MAJOR MODIFICATION" AND "BUBBLE"

We consider in this part of the opinion two questions relating to the applicability of the Clean Air Act's PSD provisions to the "modification" (as opposed to the initial construction) of "major emitting facilities."

### A. EPA's Regulatory Definition of "Modification"

Standards for PSD review of construction of facilities apply also to the "modification" of any source or facility,<sup>40</sup> as defined by section 111(a)(4). That section of the Act defines "modification" as "any physical change in, or

---

<sup>38</sup> *Id.* at 46.

<sup>39</sup> Clean Air Act § 169(1), 42 U.S.C. § 7479(1) (Supp. I 1977).

<sup>40</sup> See Clean Air Act § 169(2)(C), 42 U.S.C. § 7479(2)(C) (Supp. I 1977).

change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.”<sup>41</sup>

By regulation EPA has limited PSD review to only those modifications deemed “major” within the following definition:

“Major modification” means any physical change in, change in the method of operation of, or addition to a stationary source which increases the potential emission rate of any air pollutant regulated under the act . . . *by either 100 tons per year or more for any source category identified in [the first sentence of Clean Air Act § 169(1)], or by 250 tons per year or more for any stationary source.*<sup>42</sup>

This definition incorporates the same 100 or 250-ton per year threshold that Congress established for the term “major emitting facility.”<sup>43</sup> The regulation differs from the statute by exempting from PSD review any modification that does not exceed this threshold.

For this departure in regulation language, no reasonable basis can be found in the statute. The Act requires PSD review for any construction of a major emitting facility;<sup>44</sup> the same PSD review requirement applies for any modification of a major emitting facility;<sup>45</sup> and the term “modification” is nowhere limited to physical

---

<sup>41</sup> Clean Air Act § 111(a)(4), 42 U.S.C. § 7411(a)(4) (Supp. I 1977).

<sup>42</sup> 40 C.F.R. §§ 51.24(b)(2), 52.21(b)(2) (1978) (emphasis added).

<sup>43</sup> Clean Air Act § 169(1), 42 U.S.C. § 7479(1) (Supp. I 1977).

<sup>44</sup> See Clean Air Act § 165(a), 42 U.S.C. § 7475(a) (Supp. I 1977).

<sup>45</sup> See Clean Air Act § 169(2)(C), 42 U.S.C. § 7479(2)(C) (Supp. I 1977).

changes exceeding a certain magnitude.<sup>46</sup> There is some indication in the legislative history to suggest that at least one Senator intended some such limit.<sup>47</sup> But the language of the statute clearly did not enact such limit

---

<sup>46</sup> To exempt modest increases in pollution emissions, however, Congress did provide in § 165(b) of the Act for a 50-ton per year minimum for certain substantive elements of PSD review of "modification of a major emitting facility" in class II clean air areas. Clean Air Act § 165(b), 42 U.S.C. § 7475(b) (Supp. I 1977). As noted in the Senate report:

Section 110(g)(4)(C) exempts smaller, well-controlled sources which are expansions of existing facilities from having to demonstrate compliance with class II increments. Many such sources which are small and relatively insignificant with respect to air quality would otherwise be brought under the requirements of section 110(g) by the "major emitting facility" definition of 100 tons per year potential emissions of any pollutant.

S. REP. NO. 127, 95th Cong., 1st Sess. 33 (1977). We find nothing to indicate that a substantial additional exemption, applicable for all clean air areas, was implicit in the statute's definition of "modification" itself.

<sup>47</sup> Describing the scope of the Senate bill, Senator Buckley stated, " 'No significant deterioration' is a policy that has no effect on existing sources, unless a source undertakes a major expansion program. It requires the States to study the impact on air quality resulting from the siting of new major sources of pollution . . . ." 122 CONG. REC. 23,833 (1976). Senator Buckley was ranking minority member of the Subcommittee on Environmental Pollution at the time the bill was drafted, and took a leading role in its drafting and in explaining it on the floor of the Senate. When this debate took place, the statutory language did not apply PSD preconstruction review to source "modification." In November 1977, the Senate and House passed technical amendments, one of which had the effect of defining "construction" to include "modifications." It was this new language that had the effect of overriding Senator Buckley's interpretation of the meaning of "no significant deterioration."

into law. We are constrained here to follow the clear language.

EPA does have discretion, in administering the statute's "modification" provision, to exempt from PSD review some emission increases on grounds of *de minimis* or administrative necessity. The exemption in question, however, has not been so justified, and thus cannot stand. We discuss EPA's discretion to define *de minimis* in Part III below.

Implementation of the statute's definition of "modification" will undoubtedly prove inconvenient and costly to affected industries; but the clear language of the statute unavoidably imposes these costs except for *de minimis* increases. The statutory scheme intends to "grandfather" existing industries; but the provisions concerning modifications indicate that this is not to constitute a perpetual immunity from all standards under the PSD program. If these plants increase pollution, they will generally need a permit. Exceptions to this rule will occur when the increases are *de minimis*, and when the increases are offset by contemporaneous decreases of pollutants, as we discuss below. These two exceptions, we believe, will allow for improvement of plants, technological changes, and replacement of depreciated capital stock, without imposing a completely disabling administrative and regulatory burden.

#### B. *EPA's Qualified Application of the "Bubble" Concept of PSD*

An important issue under the Act arises from the problem of determining what types of industrial changes will be construed as "modifications" subject to PSD review requirements. Under the Act, the PSD permit and review process applies to construction and modification of major emitting facilities. As discussed in the previous section, the Act defines "modification" as any physical

or operational change in a stationary source which "increases the amount of any air pollutant emitted by such source."<sup>48</sup> There are two possible ways to construe the term "increases." First, one can look at any change proposed for a plant, and decide whether the net effect of all the steps involved in that change is to increase the emission of any air pollutant—this is commonly termed the "bubble" concept. Second, one can inspect the individual units of a plant, which are affected by an operational change, and determine whether any of the units will consequently emit more of a pollutant. In its regulations, EPA has adopted a qualified form of the "bubble" concept for defining modifications subject to PSD review.

Congress did not, in any pertinent part of legislative history, specify which of these two constructions was to be controlling;<sup>49</sup> but an analysis of the implications of the two possible interpretations shows the second to be unreasonable and contrary to the expressed purposes of the PSD provisions of the Act. It is important first to recognize that alterations of almost any plant occur continuously; whether to replace depreciated capital goods, to keep pace with technological advances, or to respond to changing consumer demands. This dynamic aspect of American industry was not disputed by the parties. To apply the second instruction of "increases," however, would require PSD review for many such routine alterations of a plant; a new unit would contribute additional pollutants, these increases could not be set off against the

---

<sup>48</sup> Clean Air Act § 111(a)(4), 42 U.S.C. § 7411(a)(4) (Supp. I 1977).

<sup>49</sup> The definition of "modification" was incorporated into the PSD provisions by technical amendment, Pub. L. No. 95-190, § 14(a)(54), 91 Stat. 1393, 1402 (1977), which was not intended to resolve any substantive issues. See 123 CONG. REC. H11,957 (daily ed. 1 Nov. 1977).

decrease resulting from abandonment of the old unit, and thus the change would become a "modification" subject to PSD review. Not only would this result be extremely burdensome, it was never intended by Congress in enacting the Clean Air Act Amendments.

The intent of the relevant portion, Part C, of the Clean Air Act as amended in 1977, is succinctly stated by the title of that part: "Prevention of Significant Deterioration of Air Quality"—in areas that currently attain air quality standards.<sup>50</sup> According to their stated purposes, the PSD provisions seek "to assure that any decision to permit *increased* air pollution in *any area* to which this section applies is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decisionmaking process."<sup>51</sup>

Congress wished to apply the permit process, then, only where industrial changes might increase pollution in an area, not where an existing plant changed its operations in ways that produced no pollution increase. It is true that Congress intended to generate technological improvement in pollution control, but this approach focused upon "rapid adoption of improvements in technology as new sources are built,"<sup>52</sup> not as old ones were changed without pollution increase. The interpretation of "modification" as requiring a net increase is thus consistent with the purpose of the Act; while the other interpretation is not. The EPA has properly exempted from best available control technology (BACT) and ambient air quality review those "modifications" of a source that do not

---

<sup>50</sup> See Clean Air Act § 160, 42 U.S.C. § 7470 (Supp. I 1977).

<sup>51</sup> Clean Air Act § 160(5), 42 U.S.C. § 7470(5) (Supp. I 1977) (emphasis added).

<sup>52</sup> S. REP. NO. 127, 95th Cong., 1st Sess. 18 (1977).

produce a net increase in any pollutant.<sup>53</sup> Within the terminology of the Act, of course, industrial changes meeting this standard are not "modifications" at all.

The "bubble" regulation for PSD must be compared with an earlier EPA regulation, which applied the bubble concept to the new source performance standards of the Act,<sup>54</sup> and which was struck down by this court in *ASARCO Inc. v. Environmental Protection Agency*.<sup>55</sup> That regulation stated that a modification of a source for NSPS purposes "shall not be deemed to occur if an existing facility undergoes a physical or operational change where . . . the total emission rate of any pollutant has not increased from all facilities within the stationary source . . . ." <sup>56</sup>

The *ASARCO* case struck down that regulation because it expanded the definition of "source," within which offsets were allowed, to include combinations of facilities, contrary to the statutory definition of "source."<sup>57</sup> Here we start with the same premise as *ASARCO*, that the Agency may not define "source" to include a combination of facilities.<sup>58</sup> Several factors prevent us, however, from drawing the same conclusion. First is a difference between the two regulations. The present EPA regulation allows offsets within a "source"; it does not, in light of our decision in this case, allow offsets within any "combination of facilities." Thus it does not suffer from the

---

<sup>53</sup> See 40 C.F.R. §§ 51.24, 52.21 (1973).

<sup>54</sup> See *id.* §§ 60.2(h), 60.14 (1976). The Act's new source performance standards are set forth in Clean Air Act § 111, 42 U.S.C. § 7411 (Supp. I 1977).

<sup>55</sup> 578 F.2d 519 (D.C. Cir. 1973).

<sup>56</sup> 40 C.F.R. § 60.14(d) (1976).

<sup>57</sup> See *ASARCO Inc. v. EPA*, 578 F.2d at 329.

<sup>58</sup> See Part I *supra*.

defect on which the *ASARCO* decision turned. Second, *ASARCO* did not rule out the interpretation of "increases" in pollution as net increases. The case stated that a bubble concept would be contrary to the intent of the NSPS provisions, but such is clearly not the case with regard to the PSD provisions. Third, the PSD provisions express a purpose of ensuring that economic growth occurs in a manner consistent with preservation of clean air.<sup>59</sup> The bubble concept is precisely suited to preserve air quality within a framework that allows cost-efficient, flexible planning for industrial expansion and improvement. Finally, it is relevant that EPA had its NSPS bubble concept in effect at the time Congress enacted the 1977 Clean Air Act Amendments. Though we are reluctant to assume that Congress expressly endorsed the specific bubble regulation, the Conference Committee approved the congressional policy as enacted at that time in existing EPA regulations.<sup>60</sup> *ASARCO*, in short, dealt with a significantly different regulation and statutory purpose. Its holding is therefore not inconsistent with our decision today, upholding the bubble concept for the PSD regulations.

The Agency retains substantial discretion in applying the bubble concept. First, any offset changes claimed by industry must be substantially contemporaneous. The agency has discretion, within reason, to define which changes are substantially contemporaneous. Second, the offsetting changes must be within the same source, as defined by EPA. In light of the statutory intent to treat modification the same as construction,<sup>61</sup> EPA's definition of "statutory source" for the PSD provisions will

---

<sup>59</sup> 42 U.S.C. § 7470 (3) (Supp. I 1977).

<sup>60</sup> See 123 CONG. REC. H8665 (daily ed. 4 Aug. 1977).

<sup>61</sup> See Clean Air Act § 169 (2) (C), 42 U.S.C. § 7479 (2) (C) (Supp. I 1977).

govern both the definition of "modification" and the coverage of section 169(1).

The Agency's regulations, however, impose on the use of the bubble concept an additional limitation, which is challenged in this case. The regulations define "major modification" by means of accumulated increases in potential emissions after 7 August 1977, with no offset allowed for contemporaneous emission decreases.<sup>62</sup> The effect of this definition is to subject major changes to PSD review, even when they are offset by contemporaneous reductions. The only effect of the EPA's bubble concept then is to exempt the facility from certain substantive review standards when there are such offsetting changes, leaving the facility subject to all procedural PSD requirements.<sup>63</sup> The most important procedural requirement is that a permit be issued, under section 165 of the Act, before construction begins. Under the Act, however, PSD procedural requirements, just like substantive ones, apply only to construction and modification of sources. We must therefore resolve the question whether EPA has authority to impose procedural requirements where there is no net increase of any pollutant from contemporaneous changes.

The Agency concedes that a literal reading of the Act would allow exemption from all PSD review requirements for offsetting changes. But it argues that a total exemption from section 165 requirements would contravene the basic purpose of the 1977 Amendments. We disagree.

There is no basis in the Act for establishing two different definitions of "modification," one that looks only

---

<sup>62</sup> See 40 C.F.R. §§ 51.24(b)(2), 52.21(b)(2) (1978).

<sup>63</sup> Since we have rejected the limitation of modifications to only "major" ones, this provision, when revised in accordance with our opinion, would bring many more offsetting changes within the PSD procedural review requirements.

at net increases for substantive requirements, and a second that looks at all increases, without allowing offsets, for procedural requirements. If a particular set of industrial alterations is not a "modification" within the terms of the Act, then it is subject to neither procedural nor substantive PSD requirements.

The Act gives the EPA Administrator authority "to prescribe such regulations as are necessary to carry out his functions" under the Act.<sup>64</sup> The Agency argues that the permit process is necessary to ensure that it receives information about industrial plans, so that it can decide whether proposed emission increases are in fact offset. But the PSD provisions set several thresholds, below which Agency review authority does not extend. The 100 and 250-ton per year limit for "major emitting facilities" is one such threshold. The logic of the Agency's argument would justify permit requirements for any industrial action that falls below any of the thresholds. Rather than allow such an extension of Agency review authority, Congress has set clear limits outside which PSD review does not apply. If industries falsely claim to be below the thresholds for PSD applicability, there exist means to uncover and penalize such abuses. An extension of PSD permit requirements beyond the wording of the Act is therefore neither necessary nor appropriate to carry out EPA's functions under the Act. Such extension would seriously delay and impede industrial changes that Congress did not intend to regulate. Where there is no net increase from contemporaneous changes within a source, we hold that PSD review, whether procedural or substantive, cannot apply.

---

<sup>64</sup> Clean Air Act § 301(a)(1), 42 U.S.C. § 7601(a)(1) (Supp. I 1977).

### III. POLLUTANTS SUBJECT TO PSD REGULATION AND THE "MAJOR EMITTING FACILITY" THRESHOLD

Several sections of the Clean Air Act apply PSD review and best available control technology to emissions by major emitting facilities of each pollutant subject to regulation under the Clean Air Act. In this part we review two regulations of EPA that define which pollutants are subject to PSD and BACT review. One regulation exempts from PSD and BACT each pollutant not emitted in sufficient amounts to qualify a source as a major emitting facility. The other applies PSD and BACT immediately to each type of pollutant regulated for any purpose under any provision of the Act, not limited to sulfur dioxide and particulates. We reverse EPA on the first regulation and affirm on the second.

#### A. *Statutory and Regulatory Background*

Section 165 of the Act provides in pertinent part:

(a) No major emitting facility on which construction is commenced after [7 August 1977] may be constructed . . . unless—

(3) the owner or operator of such facility demonstrates that emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of any (A) maximum allowable increase or maximum allowable concentration *for any pollutant in any area to which [PSD] applies* more than one time per year, . . . or (C) *any other applicable emission standard or standard of performance under this Act*;

(4) the proposed facility is subject to the best available control technology *for each pollutant subject to regulation under this Act* emitted from, or which results from, such facility . . . . .

(e) (1) The review provided for in subsection (a) shall be preceded by an analysis . . . of the ambient air quality at the proposed site . . . *for each pollutant subject to regulation under this Act*, which will be emitted from such facility.

(3) The Administrator shall . . . promulgate regulations . . . which . . . —

(B) shall require an analysis of the ambient air quality, climate and meteorology, terrain, soils and vegetation, and visibility at the site of the proposed major emitting facility . . . *for each pollutant regulated under this Act* which will be emitted from . . . such facility . . . .<sup>65</sup>

Also section 169(3), for the purposes of PSD, defines BACT as “an emission limitation based on the maximum degree of reduction of *each pollutant subject to regulation under this Act* emitted from or which results from any major emitting facility.”<sup>66</sup>

The italicized language in the above sections would not seem readily susceptible to misinterpretation. In each instance, any source that qualifies with regard to any applicable pollutant as a “major emitting facility” under the statute’s definition of such a source,<sup>67</sup> is subject to “any . . . applicable emission standard” or “standard of performance” under the Act, and to pollution controls for “any pollutant in any [geographic] area” subject to PSD and for “each pollutant subject to regulation” under the Act. The only administrative task apparently reserved to the Agency in executing these pro-

<sup>65</sup> Clean Air Act § 165, 42 U.S.C. § 7475 (Supp. I 1977) (emphasis added).

<sup>66</sup> Clean Air Act § 169(3), 42 U.S.C. § 7479(3) (Supp. I 1977) (emphasis added).

<sup>67</sup> See Clean Air Act § 169(1), 42 U.S.C. § 7479(1) (Supp. I 1977).

visions is to identify those emission standards, standards of performance, and pollutants subject to regulation under the Act which are thereby comprehended by the statute. The language of the Act does not limit the applicability of PSD only to one or several of the pollutants regulated under the Act, establish any special timetable for the regulation of particular pollutants, or set high thresholds for potential emissions of each pollutant before a major emitting facility becomes subject to PSD for that pollutant.

The first regulation states that PSD requirements, including BACT, "shall apply to a proposed source or modification only with respect to those pollutants for which the proposed construction would be a major stationary source or major modification."<sup>68</sup> This provision exempts from PSD all pollutants not emitted in quantities of at least 100 tons per year by a major emitting facility of one of the twenty-eight types specified in the first sentence of section 169(1), and 250 tons per year by all other sources.<sup>69</sup> The Agency thus adopted a BACT "*de minimis*" criterion to coincide with the 100 and 250-ton emission thresholds for major emitting facilities. It did this on grounds that the "BACT *de minimis* level should be made consistent" with the overall PSD emission threshold.<sup>70</sup>

The petition of the District of Columbia challenges this regulation. We find the regulation to be contrary to clear statutory language. Section 165 states that no major emitting facility may be constructed unless it is subject to BACT "for each pollutant subject to regulation under this Act emitted from . . . such facility."<sup>71</sup> The statute,

<sup>68</sup> 40 C.F.R. § 51.24(i)(1) (1978). See *id.* § 52.21(i)(1).

<sup>69</sup> Clean Air Act § 169(1), 42 U.S.C. § 7479(1) (Supp. I 1977).

<sup>70</sup> 43 Fed. Reg. 26,380, 26,381-82 (1978).

<sup>71</sup> Clean Air Act § 165(a)(4), 42 U.S.C. § 7475(a)(4) (Supp. I 1977).

then, does *not* exempt pollutants emitted at quantities of less than 100 tons per year by the twenty-eight types of sources specified in the first sentence of section 169(1), or less than 250 tons per year by any other source. There is no statutory basis for applying the 100 and 250-ton thresholds directly to the BACT requirement for all pollutants from a major emitting facility. This clear error of statutory interpretation by EPA is analogous to its exemption for non-major modifications. We strike down both for similar reasons.

We understand that the application of BACT requirements to the emission of all pollutants from a new facility, no matter how miniscule some may be, could impose severe administrative burdens on EPA, as well as severe economic burdens on the construction of new facilities. But the proper way to resolve this difficulty is to define a *de minimis* standard rationally designed to alleviate severe administrative burdens, not to extend the statutory 100 or 250-ton threshold to a context where Congress clearly did not apply it. Just as for the applicability of PSD to modifications, the *de minimis* exemption must be designed with the specific administrative burdens and specific regulatory context in mind. This the Agency has failed to do. We do not hold that 100 tons per year necessarily exceeds a permissible *de minimis* level; only that the Agency must follow a rational approach to determine what level of emission is a *de minimis* amount.

A rational approach would consider the administrative burden with respect to each statutory context: what level of emission is *de minimis* for modification, what level *de minimis* for application of BACT. Concerning the application of BACT, a rational approach would consider whether the *de minimis* threshold should vary depending on the specific pollutant and the danger posed by increases in its emission. The Agency should look at the degree of administrative burden posed by enforce-

ment at various *de minimis* threshold levels. It is relevant that our decision requires the Agency, in its evaluation of emissions of facilities, to take into account the facility's air pollution controls. It may also be relevant, though it is certainly not controlling, that Congress made a judgment in the Act that new facilities emitting less than 100 or 250 tons per year are not sizeable enough to warrant PSD review.

#### B. *Types of Pollutants to be Regulated Under PSD*

Industry Groups argue that the Act's provisions which apply PSD to each pollutant subject to regulation under this Act, require that controls be imposed immediately for only two types of pollutants: sulfur dioxide and particulates. The argument is made that PSD pre-construction review under section 165 is qualified by section 166, which requires EPA to conduct a study and to promulgate regulations to prevent the significant deterioration of air quality resulting from emissions of "hydrocarbons, carbon monoxide, photochemical oxidants, and nitrogen oxides" (the "automotive pollutants"), as well as "pollutants for which national ambient air quality standards are promulgated."<sup>72</sup> Although there is no statutory language which so provides, Industry Groups contend that the effective date of the PSD permit and review framework in section 165 must be delayed in the case of each pollutant until studies and regulations required in section 166 have been set forth. Only sulfur dioxide and particulates are said to be exempt from this requirement, since these pollutants alone were covered by EPA's pre-1977 PSD regulations;<sup>73</sup> thus the requisite studies have already been conducted and the applicable

---

<sup>72</sup> Clean Air Act § 166(a), 42 U.S.C. § 7476(a) (Supp. I 1977).

<sup>73</sup> The first set of proposed PSD regulations was published in 1974, see 39 Fed. Reg. 42,510, 42,514 (1974), and later codified in 40 C.F.R. §§ 52.01(d) (5), 52.21 (1977).

standards set,<sup>74</sup> and any PSD review not premised on the studies and standards required by section 166 thus must be arbitrary and invalid. Industry Groups also argue that an undue burden will be imposed on affected facilities by the Agency's immediate application of section 165 to all pollutants subject to regulation under the Act. In line with their reading of the statute and in order to lessen the regulatory burden, Industry Groups argue that PSD regulation of the four "automotive pollutants" should be delayed for at least three years and seven months following the enactment of the 1977 Amendments, and other pollutants even longer.<sup>75</sup>

These arguments, however, are contradicted by the plain language of section 165. Section 165, in a litany of repetition, provides without qualification that each of its major substantive provisions shall be effective after 7 August 1977 with regard to each pollutant subject to regulation under the Act, or with regard to any "applicable emission standard or standard of performance under" the Act.<sup>76</sup> As if to make the point even more clear, the definition of BACT itself in section 169 applies to each

---

<sup>74</sup> Industry Groups also point out that § 163(a) of the Act expressly requires that state plans contain measures assuring that maximum allowable increases over baseline concentrations not be exceeded "in the case of sulfur oxide and particulate matter," and that § 163(b) establishes specific sulfur dioxide and particulate increments for class I, II, and III areas to be implemented in state plans. Clean Air Act § 163(a)-(b), 42 U.S.C. § 7473(a)-(b) (Supp. I 1977). No mention is made in these sections of other pollutants to be reached by PSD.

<sup>75</sup> See Brief for Industry Petitioners on Regulation of Pollutants Other Than Sulfur Dioxide and Particulates at 14 [hereinafter cited as Industry Brief on Other Pollutants].

<sup>76</sup> See Clean Air Act § 165(a) (3)-(4), (e) (1), 42 U.S.C. § 7475(a) (3)-(4), (c) (1) (Supp. I 1977).

such pollutant.<sup>77</sup> The statutory language leaves no room for limiting the phrase "each pollutant subject to regulation" to sulfur dioxide and particulates.

We find no implied or apparent conflict between sections 165 and 166; nor, as Industry Groups contend, must the requirements of section 165 be "subsumed" within those of section 166.<sup>78</sup> As we noted in our earlier *per curiam* opinion, section 166 has a different focus from section 165: "the development of maximum allowable increments or equivalent limitations for those pollutants (other than sulfur dioxide and particulate matter) for which NAAQSs [national ambient air quality standards] have been or will be established."<sup>79</sup> Though Congress could have decided to delay the applicability of PSD for such pollutants until all studies and regulations required by section 166 have been completed, Congress apparently chose not to do so, and it emphasized its decision on that point in at least five statutory provisions.<sup>80</sup> What legislative history there is on this point supports that view.<sup>81</sup> Therefore we

---

<sup>77</sup> Clean Air Act § 169(3), 42 U.S.C. § 7479(3) (Supp. I 1977).

<sup>78</sup> See Industry Brief on Other Pollutants, *supra* note 75, at 19.

<sup>79</sup> See *Alabama Power Co. v. EPA*, No. 78-1006, slip op. at 29 (D.C. Cir. 18 June 1979) (*per curiam*). —

<sup>80</sup> See notes 76-77 *supra*.

<sup>81</sup> Though the legislative history is not entirely unambiguous, we note, for example, that the House specifically rejected an amendment offered to restrict PSD coverage to sulfur oxides and particulates. See 122 CONG. REC. 29,568-69 (1976). In the Senate, the clearest statement of intention in late 1977 may have been made by Senator Muskie, the principal Senate sponsor of the 1977 Clean Air Act Amendments:

The committee did not extend the use of nondegradation increments to pollutants other than sulfur oxides or particulates. The lack of adequate information on

uphold this Agency regulation."<sup>2</sup>

---

the implications of covering other criteria pollutants precluded such a requirement. *The committee did, however, agree that the best available control technology requirements should be applicable to all pollutants emitted from any new major emitting facility so that the maximum degree of emission reduction would be achieved in order to minimize potential deterioration.* And the committee did authorize a study by EPA of increments applicable to other pollutants in order to establish a basis for future congressional action.

123 Cong. Rec. S9162, S9170 (daily ed. 8 June 1977) (emphasis added). The final bill passed by the Senate after conference applied BACT to "each pollutant subject to regulation" under the Act, just as other PSD requirements were so applied. See Clean Air Act § 165, 42 U.S.C. § 7475 (Supp. I 1977).

<sup>82</sup> We have considered, but cannot give great weight to, petitioners' "feasibility" and "economic impact" argument against immediate PSD regulation of pollutants other than sulfur dioxide and particulates. See Industry Brief on Other Pollutants, *supra* note 75, at 31-37. We find that EPA acted reasonably in balancing these costs against the goal of protecting clean air areas.

Of greater interest is the detailed economic and scientific study presented to this court in support of Industry Groups' petitions for rehearing. See Impact of the Court of Appeals Decision on the PSD Permit Process, prepared by Environmental Research & Technology, Inc. (July 1979), Exhibit A, Industry Petitioners' Petition for Rehearing on the Application of PSD Requirements to Pollutants Other Than Sulfur Dioxide and Particulates. It is not the role of this court, however, to engage in a technical review of policy decisions made by Congress where those decisions are clearly stated. We also note that the impact study nowhere takes into account the *de minimis* exemptions that EPA has authority to allow in the case of individual pollutants emitted by a major facility. Some of the dire effects feared by petitioners therefore may be relieved to some degree. These arguments are more appropriately presented to Congress, which (in light of the

#### IV. DEFINITION OF BACT TO INCLUDE A VISIBLE EMISSION STANDARD

One of the principal substantive prerequisites to obtaining a PSD permit for construction of a major emitting facility in clean air areas under the Act is utilization by that facility of the "best available control technology" for each pollutant subject to regulation under the Act to be emitted from that facility.<sup>83</sup> In this part of the opinion we consider whether EPA had authority to include a visible emission standard among other emission limitations to be considered by the PSD permitting authority in applying BACT. For reasons stated herein, we conclude that EPA had such authority.

Clean Air Act section 169(3) defines BACT as:

*an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this Act emitted from . . . any major emitting facility, which the permitting authority . . . determines is achievable . . . through application of production processes and available methods, systems and techniques . . .*<sup>84</sup>

Section 302(k) of the Act, in turn, defines "emission limitation" (and also "emission standard") as:

unambiguous language of the statute) apparently has adopted a different position.

We also are not convinced by petitioners' procedural objections. See Industry Brief on Other Pollutants, *supra* note 75, at 23-30. In light of the unambiguous legislative command at issue, we believe that the Administrator adequately explained the basis for his action and responded to significant comments raised during the rulemaking proceedings. See 43 Fed. Reg. 26,330, 26,397 (1978).

<sup>83</sup> See Clean Air Act § 165(a)(4), 42 U.S.C. § 7475(a)(4) (Supp. I 1977).

<sup>84</sup> Clean Air Act § 169(3), 42 U.S.C. § 7479(3) (Supp. I 1977) (emphasis added).

a requirement established by the State or the [EPA] Administrator which *limits the quantity, rate, or concentration* of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction.<sup>85</sup>

In its final regulations, EPA defined BACT essentially as in section 169(3) of the statute, except for the parenthetical inclusion that BACT means "an emission limitation (*including a visible emission standard*)."<sup>86</sup> The central question for review is thus whether a "visible emission standard" may be considered an "emission limitation" or "emission standard" within the meaning of section 302(k) and in the context of BACT.

A petitioning Industry Group<sup>87</sup> contends that EPA's parenthetical inclusion of a "visible emission standard" as a type of emission limitation expands the scope of BACT beyond that intended by Congress. The Group argues that Congress provided explicitly and exclusively for visibility protection of certain clean air areas in section 169A<sup>88</sup> of the Act, and that therefore such visibility standards cannot be incorporated into other PSD provisions. These contentions are without merit.

Under the language of the statute, a visible emission standard to be incorporated into BACT must constitute a "requirement . . . which limits the *quantity, rate, or concentration*" of pollutant emissions.<sup>89</sup> An emission

<sup>85</sup> Clean Air Act § 302(k), 42 U.S.C. § 7602(k) (Supp. I 1977) (emphasis added).

<sup>86</sup> 40 C.F.R. §§ 51.24(b)(10), 52.21(b)(10) (1973) (emphasis added).

<sup>87</sup> This Group is the American Iron and Steel Institute.

<sup>88</sup> Clean Air Act § 169A, 42 U.S.C. § 7491 (Supp. I 1977).

<sup>89</sup> Clean Air Act § 302(k), 42 U.S.C. § 7602(k) (Supp. I 1977) (emphasis added).

standard pertaining to air opacity is one such means of measuring and limiting emissions; such a standard sets limits on the emission of pollutants according to their density in ways that are apparent to the human eye and that therefore affect, for example, human vision. EPA's regulation on the point thus does no more than amplify one ordinary and reasonable meaning of the statutory term "emission standard"; even without the parenthetical amplification, we believe that PSD permitting authorities could fairly have construed the term "emission standard" to comprehend a "*visible* emission standard."

Opacity standards are not novel; they are used, for example, by a number of states in their attempts to control air pollution.<sup>90</sup> Opacity standards have been upheld previously by this court under closely analogous circumstances involving the Clean Air Act's NSPS program.<sup>91</sup> Congress also has expressed concern for opacity values in measuring air pollution under the Clean Air Act, and specifically under PSD. As noted by Senator Muskie, chief Senate sponsor of the Clean Air Act Amendments of 1977, with regard to the need for nondegradation provisions to protect against harmful environmental effects not anticipated by the Clean Air Act's secondary standards:

[I]f the [Act's] secondary standards were the only restraint on new sources in clean air regions, visibility which is now 100 miles or more in some areas could deteriorate to 12 miles. If humidity is high, visibility would be reduced even further. While visibility may not be important in dirty air

<sup>90</sup> See, e.g., CAL. HEALTH AND SAFETY CODE § 41701 (West); COLO. REV. STAT. § 25-7-1-2, and Regulation No. 1A promulgated thereunder; ARIZ. REV. STAT. § 36-779, and Regulation R 9-3-301 promulgated thereunder.

<sup>91</sup> *Portland Cement Ass'n v. Train*, 513 F.2d 506 (D.C. Cir. 1975), cert. denied, 423 U.S. 1025 (1976).

*areas, it has high public value in many clean air regions . . . .*<sup>92</sup>

Finally, we note that EPA's inclusion of visible emission standards (among others) to be used to determine compliance with BACT sets no single standard that all PSD permittees must meet. Instead, the regulations contemplate only the factoring of an opacity standard into other BACT considerations such as "energy, environmental, and economic impacts and other costs" to be applied on a "case-by-case basis" to emitting facilities.<sup>93</sup> As such the regulation is far from oppressive or unduly expansive; it merely defines with some specificity an area in which the permitting authority, which in most cases will be a state, may exercise reasonable discretion.

#### V. "COMMENCED CONSTRUCTION" FOR PHASED CONSTRUCTION PROJECTS

Section 165 of the Clean Air Act states that no major emitting facility, on which construction is commenced after 7 August 1977, may be constructed in any clean air area unless PSD permitting requirements are met. For an industrial project that is to be constructed in stages, as over a period of years, the meaning of the phrase "construction is commenced" may determine whether and to what extent PSD preconstruction review applies. EPA has developed the practice of issuing a single, comprehensive PSD permit for an entire project with special conditions pertaining to each phase of construction.

<sup>92</sup> 123 CONG. REC. S9170 (daily ed. 8 June 1977) (emphasis added) (prepared statement on final version of Senate version of Amendments). See also 123 CONG. REC. S9241 (daily ed. 9 June 1977) (statements of concern for air visibility in national parks).

<sup>93</sup> Clean Air Act § 169(3), 42 U.S.C. § 7479(3) (Supp. I 1977).

In this part, we review regulations of EPA that condition the granting of a comprehensive PSD permit for a phased construction project on: (1) independent BACT review of each phase of the project, (2) actual commencement of construction of each phase within eighteen months of the target date specified in the original application, with a variance procedure available only for the commencement date of the first phase of the project, and (3) avoidance of any interruption in the course of construction of any particular phase for longer than eighteen months. EPA's regulations also suggest, very specifically, that power company multi-boiler construction projects will not be eligible under any circumstances for a comprehensive, multi-phase PSD permit. EPA's regulations allow a comprehensive permit for construction projects that are to be completed in phases, thus avoiding a separate permit proceeding for each phase.

The important statutory section for our evaluation of these regulations is Clean Air Act section 169(2)(A), which provides:

The term 'commenced' as applied to construction of a major emitting facility means that the owner or operator has obtained all necessary preconstruction approvals or permits required by . . . air quality laws or regulations and either has (i) begun . . . a continuous program of physical on-site construction of the facility or (ii) 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 within a reasonable time.<sup>84</sup>

This section provides little guidance concerning the meaning of commencing construction, in the case of a multi-phase construction project, for which on-site con-

---

<sup>84</sup> Clean Air Act § 169(2)(A), 42 U.S.C. § 7479(2)(A) (Supp. 1 1977).

struction may have begun, and contractual obligations may have been assumed, for only one of several phases of the entire project. EPA has sought to provide guidance on this issue in its PSD regulations. The pertinent regulation reads:

Approval to construct [a major emitting facility] shall become invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Administrator may extend the 18-month period upon a satisfactory showing that an extension is justified. *This provision does not apply to the time period between construction of the approved phases of a phased construction project; each phase must commence construction within 18 months of the projected and approved commencement date.*<sup>95</sup>

The preamble to the final regulations adds the significant qualification that a comprehensive PSD permit for multi-phase construction projects will be issued only where the phases are "mutually dependent."<sup>96</sup>

As an exception, EPA regulations cite a power company's "three-boiler project" as an instance in which a second construction phase would be subject to renewed PSD review if construction on that phase were not com-

---

<sup>95</sup> 40 C.F.R. § 52.21(s) (2) (1978) (emphasis added).

<sup>96</sup> 43 Fed. Reg. 26,388, 26,396 (1978). The preamble states:

In general, if the phases of the major facilities involved are mutually dependent and one of the major facilities has, by an applicable grandfather date, commenced construction, then all other dependent facilities specifically approved for construction at the same time will also hold such status. Conversely, each independent facility must individually commence construction by the prescribed grandfather date(s).

*Id.* (footnote omitted).

menced within eighteen months of issuance of the original permit, even if "there may be a phased construction process at the same general site" of all three boilers.<sup>97</sup> Similarly, a footnote to this preamble appears to single out power company boilers for special treatment:

The dependence of facilities within a source will be determined on an individual basis. Two or more facilities will generally be considered dependent if the construction of one would necessitate the construction of the other facility(ies) at the same site in order to complete a given project or provide a given type (not level of) service. A kraft pulp mill is an example of a source with dependent facilities, whereas a *three-boiler power plant is a typical example of a source with major independent facilities.*<sup>98</sup>

Petitioning utility companies object to their apparent exclusion from EPA's special provision for multi-phase permitting and charge that such exclusion is arbitrary. These petitioners also object to EPA's refusal to consider granting specific exemptions from the eighteen-month commencement deadline for construction of all but the first phase of a multi-phase project. With regard to EPA's rules for phased construction aside from these two points, however, petitioners concede that in general EPA has taken a rational approach.<sup>99</sup>

We find EPA's regulations on these matters to be within the Agency's statutory authority. The conditions imposed by EPA on the granting of a multi-phase construction permit are reasonable. Finally, the ineligibility of utility company multi-boiler projects for multi-

---

<sup>97</sup> *Id.*

<sup>98</sup> *Id.* n.6 (emphasis added).

<sup>99</sup> See Reply Brief of Alabama Power Company, et al. on Stack Height and Commenced Construction at 9.

phase PSD permits is consistent with the reasoning behind the multi-phase PSD program and has not, on this record, been shown to be arbitrary or capricious.

As described in Part I, the Agency has considerable discretion to define the terms "source" and "major emitting facility." Within the limits of the statutory language, EPA could define each phase of a multi-phase construction project as a separate source—so long as each phase could reasonably be termed a structure, building, facility, or installation—or it could define the entire project as a single source, so long as it was reasonably one facility, or installation, etc. If a particular phase is deemed a separate source, then EPA has statutory authority to require for it a separate permit. But EPA also has statutory authority to issue a single permit covering all phases of the project. If the Agency deems the project to be a single source, then a single permit would of course be appropriate; if it considers each phase to constitute a separate source, it may still issue a single permit covering all phases, so long as the permit prerequisites are satisfied as to each phase.

We find that the Agency reasonably exercised its discretion by providing for a comprehensive PSD permit for any project on a common site the phases of which are mutually dependent. This is a wise measure to reduce regulatory burdens and facilitate construction. It is valid whether or not the whole project can be deemed a single "source" in light of Part I of this opinion.

The limitations on the use of the comprehensive permit are also valid. To require mutual dependence is a reasonable threshold standard. While it might be economically preferable to issue a comprehensive permit whenever economies of scale are achievable through a comprehensive project, the Act leaves EPA discretion to issue separate permits for phases that can be deemed separate sources; and the Agency's action here does not

amount to an abuse of that discretion. The time limits for commencement of construction<sup>100</sup> are reasonable, in order to prevent construction projects from reserving, for too long in the future, a disproportionate share of available pollution increments. The same rationale amply supports the restriction on gaps in construction progress exceeding eighteen months, and the refusal to grant variances except for the commencement date of the first phase. There is no need for EPA to re-propose these rules, as they represent reasonable revisions of the originally proposed rules in light of comments received.<sup>101</sup>

Finally, utility companies object specifically to the statement, in the preamble to these regulations, that a three-boiler power plant is a typical example of a source with major independent facilities.<sup>102</sup> Where multi-boiler plants can utilize shared water, cooling, and other facilities, there is certainly an economy of scale, and EPA's regulation will reduce the certainty of industry that future boiler construction will pass PSD review. But EPA balanced this interest against the danger that comprehensive permits for multiple boiler units would preempt available pollution increment into the future. There is support in the legislative history for giving this adverse treatment to construction of multiple boiler units; the Senate Committee Report stated that most contracts for construction of multiple utility boiler units do not meet the statutory standard for "commenced construction."<sup>103</sup> Therefore EPA's treatment of utility boilers is not an abuse of discretion.

---

<sup>100</sup> See 43 Fed. Reg. 26,388, 26,396 (1978).

<sup>101</sup> See *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 632 & n.51 (D.C. Cir. 1973).

<sup>102</sup> See 43 Fed. Reg. 26,388, 26,396 n.6 (1978).

<sup>103</sup> S. REP. NO. 127, 95th Cong., 1st Sess. 33 (1977).