



1976

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Recommended Citation

Jonathan L. Silver, *Problems in Attempting to Translate Statutory Standards into Emission Limitations under Air and Water Pollution Control Legislation*, 22 Vill. L. Rev. 1122 (1976).

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PROBLEMS IN ATTEMPTING TO TRANSLATE STATUTORY
STANDARDS INTO EMISSION LIMITATIONS
UNDER AIR AND WATER POLLUTION
CONTROL LEGISLATION

JONATHAN L. F. SILVER†

I. INTRODUCTION

THE PAST THREE DECADES have witnessed the emergence and growth of a deep national concern over the destructive environmental effects of industrial operations necessary to support the life style to which we have become addicted.¹ This concern has found expression in a body of legislation designed to control several forms of pollution, particularly the contamination of air and water. As may be true of most attempts to achieve societally oriented goals through governmental regulation of the private sector, the administration of the legislative schemes has been a source of difficulty and frustration, due to the inevitable conflict between cleaner production methods and efficient industrial processes.

Pollution control efforts seek to reduce the quantity of pollutants in the ambient environment to acceptable levels. Ultimately, achievement of such levels depends upon the government's ability to establish and enforce limits for every major producer of pollutant emissions. Thus, the ability of administrators to translate the criteria selected by the legislature into exact and enforceable emission limits serves to measure the adequacy of any such scheme. Although Congress has experimented with a variety of criteria and enforcement mechanisms in pollution control legislation, every major regulatory scheme has been either health- or technology-based.² Each type of regulation has engendered its own implementa-

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The initial research for this article was funded by the Committee on Environmental Decisionmaking of the National Academy of Sciences, whose permission to publish this article is gratefully acknowledged. The views expressed herein are solely those of the author.

1. See generally *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615 (D.C. Cir. 1973).

2. It should be noted that other pollution control programs have incorporated both a health and technology basis. See, e.g., Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. §§ 135-136y (1970 & Supp. V 1975); Safe Drinking Water Act, 42 U.S.C. §§ 300f-300j-9 (Supp. V 1975); Noise Pollution and Abatement Act of 1970, 42 U.S.C. §§ 1854-1858a (1970). These acts will not be treated in this article because, in the opinion of this author, there has not been enough regulatory activity under them upon which to evaluate their effectiveness.

tion problems. Description of those problems and exploration of their origins may help explain why pollution control efforts to date appear to have been unsuccessful, and may suggest reforms which could achieve a better environmental quality. In addition, such a discussion may help to focus debate on the cost of environmental quality, so that the country may decide if it is willing to pay the necessary price.

II. AIR POLLUTION CONTROL

A. Legislation

The extent of federal participation in efforts to control air pollution has increased steadily since the government's initial involvement in 1955.³ Historically, the methods used to control air pollution from nonmobile, stationary sources were often borrowed from a preceding water pollution control measure, with the result that, on occasion, a particular method was first used as a *water* pollution control device, and later embodied as an amendment to *air* pollution control legislation.⁴

The first significant federal air pollution legislation was the Air Quality Act of 1967 (1967 Air Act).⁵ Congress, in the 1967 Air Act, directed the federal government to segment the nation into manageable air quality control regions, develop air quality criteria, and study and recommend to the states techniques of air quality control.⁶ States were directed to file letters of intent stating that they would formulate the desired ambient air standards and implement the controls necessary to achieve them.⁷ The federal government could establish ambient standards and concomitant controls only if a state failed to fulfill the terms of its letter of intent.⁸ In practice, the 1967 Air Act proved unsuccessful because the federal government, due to the absence of statutory deadlines, failed to complete the formulation of air quality criteria and control techniques. As a

3. Air Pollution Control Act of 1955, ch. 360, 69 Stat. 322 (1955). See Trumbull, *Federal Control of Stationary Source Air Pollution*, 2 *ECOLOGY L.Q.* 283, 283 (1972). The increased federal involvement has led to a certain degree of interrelation with other pollution control efforts.

4. See Trumbull, *supra* note 3, at 283-84.

5. Pub. L. 90-148, 81 Stat. 485 (1967) (amended 1970 & 1977).

6. *Id.* § 107. For a description of the various air quality control provisions for stationary sources, see generally Trumbull, *supra* note 3, at 286-301.

7. Pub. L. No. 90-148, § 108(c)(1), 81 Stat. 485 (1967).

8. *Id.* § 108(c)(2). The Statute conditioned the authority of the federal government to fix the standards and controls that a state must use upon a lengthy hearing and appeal procedure, which would result in considerable delay. *Id.* § 108(c)(3); see Trumbull, *supra* note 3, at 288.

result, the states' obligation to file letters of intent never ripened, and no controls were ever adopted.⁹

The Clean Air Act Amendments of 1970 (1970 Amendments)¹⁰ were enacted in response to the growing public concern over public health and the ineffectiveness of the 1967 Air Act.¹¹ The 1970 Amendments altered the basic legislative scheme in two ways. First, the legislation created step-by-step deadlines to compel both federal and state implementation.¹² More importantly, they established a new framework for implementation, one which gives the federal government a larger role in the creation and enforcement of control measures, yet continues to vest considerable responsibility in the states.¹³

Under the current air pollution legislation,¹⁴ the Administrator of the federal agency, the Environmental Protection Agency (EPA),¹⁵ must perform a number of new functions in addition to many of those imposed by the 1967 Air Act. While EPA is to continue to designate air quality control regions and air quality criteria,¹⁶ the 1970 Amendments also directed it to establish national primary and secondary ambient air quality standards that would embody the acceptable minimum quality of ambient air.¹⁷ Primary standards are to set the permissible level of pollutants low enough to protect the public *health*.¹⁸ These levels are to be achieved as soon as practicable, but in no event more than three years from the date of enactment of the 1970 Amendments.¹⁹ Secondary standards are to set levels sufficient to protect the public *welfare*, which includes not only the health of persons, but also that of animals and vegetation,

9. Trumbull, *supra* note 3, at 288.

10. Pub. L. No. 91-604, 84 Stat. 1676 (codified at 42 U.S.C. §§ 1857-1858a (1970)) (amended 1977).

11. See H.R. REP. NO. 1146, 91st Cong., 2d Sess. 1 (1970); S. REP. NO. 1196, 91st Cong., 2d Sess. 1 (1970). See also *Union Electric Co. v. EPA*, 427 U.S. 246 (1976); *Train v. NRDC*, 421 U.S. 60 (1975); *Kennecott Copper Corp. v. Train*, 9 ENVIR. REP. (BNA) 1593 (D. Nev. Nov. 24, 1976). The opinion in *Kennecott* includes a particularly useful and succinct description of the inadequacies of the 1967 Air Act and how they led to the 1970 Amendments. *Id.* at 1594-95. See generally La Pierre, *Technology-Forcing and Federal Environmental Protection Statutes*, 62 IOWA L. REV. 771 (1977).

12. See 42 U.S.C. §§ 1857c-4, -5 (1970).

13. See *id.* § 1857a.

14. The current legislation is the product of the 1970 Amendments, 42 U.S.C. §§ 1857-1858a (1970), and the Clean Air Act Amendments of 1977 (1977 Amendments), Pub. L. No. 95-95, 91 Stat. 685 (to be codified in 42 U.S.C. §§ 7401-7626). For purposes of this article the current air pollution legislation will be referred to as the "Clean Air Act."

15. For purposes of this article, references to EPA will encompass both the EPA and the Administrator of EPA.

16. 42 U.S.C. §§ 1857c-2, -3 (1970).

17. *Id.* § 1857c-4(a).

18. *Id.* § 1857c-4(b)(1).

19. *Id.* § 1857c-5(a)(2)(A)(i).

as well as guarding against any known or anticipated adverse effects of a pollutant.²⁰ Secondary standards are to be attained within a reasonable time from enactment of the 1970 Amendments.²¹

Following EPA's promulgation of ambient air standards, the states were to submit, within a specified time, implementation plans.²² Such plans had to meet specified criteria, including provisions for attainment of the primary and secondary standards.²³ Using methods established by EPA, state agencies must measure the quality of the ambient air in various locations within the region.²⁴ They are then to use an EPA approved model to devise emission limitations and other control strategies to be imposed on all existing stationary sources in order to achieve the national ambient air standards.²⁵ The implementation plans must mandate that the emission limitations which have been derived be applied to existing stationary sources and must articulate other control measures as may be necessary to meet the standard.²⁶ An unsatisfactory state plan may be amended by EPA, after due notice and receipt of comments from interested parties.²⁷

In devising emission limitations for existing stationary sources, states must consider the effect that direct EPA action would have on the amount of pollutant emissions.²⁸ The 1970 Amendments gave EPA the power to formulate nationally uniform limits for emissions from mobile sources,²⁹ and for pollutants designated by it as "hazardous."³⁰ In addition, the statute required "new stationary sources"³¹ to limit their emissions to a level calculated by the EPA

20. *Id.* § 1857c-4(b)(2).

21. *Id.* § 1857c-5(a)(2)(A)(ii).

22. *Id.* § 1857c-5(a)(1). States were required to submit plans providing for the implementation of primary and secondary standards within nine months of the promulgation of such standards. *Id.*

23. *Id.* State implementation plans must also, *inter alia*, 1) provide for the establishment of a system to "monitor, compile, and analyze data on ambient air quality;" 2) contain measures that are designed to facilitate "intergovernmental cooperation;" and 3) provide "for periodic inspection and testing . . . to enforce compliance with applicable emission standards." *Id.* § 1857c-5(a)(2).

24. *See* 40 C.F.R. § 51.3 (1976).

25. *See id.* § 51.12. For a cogent and succinct review of the existing stationary source scheme, see Bleicher, *Economic and Technical Feasibility in Clean Air Act Enforcement Against Stationary Sources*, 89 HARV. L. REV. 316, 319-29 (1975); La Pierre, *supra* note 11, at 777-93.

26. 42 U.S.C. § 1857c-5(a) (1970).

27. *Id.* § 1857c-5(c) (1970 & Supp. V 1975).

28. *See* 40 C.F.R. § 51.14(a), (b) (1976).

29. 42 U.S.C. § 1857f-1 (1970 & Supp. V 1975) (amended 1977).

30. *Id.* § 1857c-7 (1970) (amended 1977).

31. A "new source" is defined as "any stationary source, the construction or modification of which is commenced after the publication of regulations . . . prescribing a standard of performance [for emissions of air pollutants] which will be applicable to such source." 42 U.S.C. § 1857c-6(a)(2) (1970).

which could be achieved by use of the "best demonstrated technology."³² However, the Clean Air Act Amendments of 1977 (1977 Amendments) have supplanted this technology requirement with a more specific one: "the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, and any non-air-quality health and environmental impact and energy requirements) has been adequately demonstrated"³³

Thus, the Clean Air Act attempts to reach desirable levels of air quality by initially determining those levels, and then using emission reduction methods and other control techniques to achieve them. The power to devise and apply the precise controls to individual pollutant sources has been divided between the states and the federal government. Although this framework may be appealing, it is not the only method available, and, as shall be subsequently discussed, the problems inherent in its application may make it an impractical choice.

B. *Difficulties Encountered in Application*

An examination of the cases that have been litigated under the statute provides the best illustration of the difficulties encountered in converting the general legislative plan into regulations for individual polluters. Those cases reveal seven topics that are relevant to an analysis of the health-based provisions of the Clean Air Act that provide for the development and imposition of limits and controls on individual sources.

1. *Selection of Control Techniques*

The ambiguous language in section 110 of the 1970 Amendments³⁴ created long unresolved controversy over whether the statute established emission *limitation* as the preferred method of pollution control, as a necessary component of every state plan, or as merely one of a number of alternative controls which each state was free to accept or reject.³⁵ Industry generally favors the use of tall

32. *Id.* § 1857c-6 (1970 & Supp. V 1975) (amended 1977).

33. Pub. L. No. 95-95, § 109, 91 Stat. 685 (1977) (to be codified in 42 U.S.C. § 7411).

34. 42 U.S.C. § 1857c-5 (1970) (amended 1977).

35. *Id.* § 1857c-5(a)(2)(B). Section 110 of the 1970 Amendments provides in pertinent part:

The Administrator shall approve . . . [a state implementation] plan . . . if he determines that . . .

(B) it includes emission *limitations*, schedules and timetables for compliance with such limitations, and such other measures as may be necessary to insure attainment and maintenance of such primary or

stacks and intermittent slowdowns or shutdowns as control methods, because they are considerably less expensive than the installation of emission reduction devices. The techniques industry prefers achieve ambient air quality by *dispersing* the quantity of a pollutant more uniformly over space — tall stacks — and/or time — intermittent slowdown or shutdown — rather than by *reducing* the total volume of a pollutant expelled in a given period of time — emission limitation.

When a method other than emission reduction was submitted to EPA for approval as part of a state implementation plan under section 110, the issue of whether it was a proper control technique occasionally arose. If EPA sanctioned an alternative method of pollution control, environmentalists frequently contested this decision; on the other hand, if EPA disapproved the technique, industry sought judicial review. Although EPA had on occasion sided with industry in determining the appropriate role for emission reduction techniques, the courts favored the position that emission limitation was the statutorily preferred control method.

In *Natural Resources Defense Council, Inc. v. EPA* (NRDC),³⁶ the Fifth Circuit examined EPA's approval of Georgia's implementation plan which authorized calculation of permissible emissions according to the dispersion effect of stack height.³⁷ The court identified two possible interpretations of section 110, a broad one that would require the use of emission limitation methods to the maximum extent feasible, and a narrow one that would mandate approval of any plan that complied with national standards, regardless of the control methods used.³⁸ Examination of the statute and its history led the court to conclude that the former approach was correct.³⁹ EPA then argued, however, that a state plan was consistent with the broad approach as long as an emission limitation existed for every emission source, even if the plan attained national standards with the help of dispersion techniques.⁴⁰ The court rejected this position, ruling that emission limitation must be used to the fullest extent possible.⁴¹ The court noted that dispersion

secondary standard, including, but not limited to land-use and transportation controls.

Id. (emphasis added).

36. 489 F.2d 390 (5th Cir. 1974), *rev'd on other grounds*, 421 U.S. 60 (1975).

37. 489 F.2d at 393, 403.

38. *Id.* at 406. The court did not engage in a discussion concerning an intermediate position, such as a requirement that a state plan or individual source must make *some* use of emission limitation.

39. *Id.* at 406-07.

40. *Id.* at 410.

41. *Id.* at 407-08.

techniques could supplement emission controls only if the maximum feasible use of the latter was insufficient to attain national standards.⁴²

The industry approach — tall stacks and intermittent slow-or-shutdowns — which met with judicial disfavor, would have achieved national ambient air standards, while minimizing the cost of pollution control and the resulting economic dislocations. Therefore, state officials, when faced with the conflict between protecting the economic health of their state or its environment, may have been tempted to condone methods of pollution control other than emission limitation. In order to justify the use of dispersion methods, state plans may, however, have exaggerated the ambient air quality attainable through the use of dispersion techniques.⁴³ Furthermore, dispersion necessarily degrades the quality of air elsewhere that is cleaner than required by national standards.⁴⁴ Although EPA regulations allowing degradation of the quality of adjacent air⁴⁵ were upheld,⁴⁶ the result may be undesirable. In addition, one may question the extent to which Congress intended a statute based upon considerations of public health and welfare to be applied on the basis of economic consequences. Given that the standards would have been met in any event, and that emission reduction would not have been demanded beyond the bounds of economic feasibility, to allow economic desirability to produce a result which permitted pollution of air that was cleaner than that mandated by national standards was inimical to the statute's health and welfare bases. On the other hand, the interpretation of section 110 which was accepted by such cases as *NRDC* would have necessitated significant expenditures to achieve an ambient air quality that may have been superior to that required by the national standards. It is not clear that this was a prudent allocation of resources, particularly when

42. See *id.* at 410. See also *Kennecott Copper Corp. v. Train*, 526 F.2d 1149 (9th Cir. 1975), *cert. denied*, 425 U.S. 935 (1976); *Big Rivers Elec. Corp. v. EPA*, 523 F.2d 10 (6th Cir. 1975). Since both of these cases involved *industry* challenges to EPA actions, EPA has apparently abandoned the statutory construction it advocated in the Fifth Circuit — that emission limitation methods need not be employed to the maximum extent feasible. See text accompanying notes 38-40 *supra*.

43. Resolution of the question of how much reduction is needed or feasible can be troublesome. See notes 54-122 and accompanying text *infra*.

44. For a discussion of the conflict between further degradation of the quality of adjacent air and the purpose of the 1970 Amendments, see notes 153-171 and accompanying text *infra*.

45. See, e.g., 39 Fed. Reg. 42,514 (1974).

46. *Sierra Club v. EPA*, 540 F.2d 1114 (D.C. Cir. 1976), *cert. denied*, 430 U.S. 959 (1977). Compare *Sierra Club v. EPA*, 540 F.2d 1114 (D.C. Cir. 1976), with *Sierra Club v. Ruckelshaus*, 344 F. Supp. 253 (D.D.C. 1972), *aff'd per curiam*, No. 72-1528 (D.C. Cir. Nov. 1, 1972), *aff'd per curiam by an equally divided court sub nom. Fri v. Sierra*

the economy was not altogether healthy; nor was it certain that Congress had made such a choice.

The difficulty of weighing the economic considerations of pollution control was an inevitable consequence of a health-based regulatory scheme which produced a severe financial impact on industry, but ignored the economic impact of the regulation. Industry will pursue courses available to avoid expenditures, and arguments that draw their unspoken but obvious premise from adverse economic effects are persuasive.⁴⁷ It may be that, in 1970, the members of Congress could not agree on this issue and, therefore, left it for the courts to resolve. Although this may be one way to reach a decision — assuming that Congress is willing to amend the legislation, if necessary, after judicial construction⁴⁸ — the excessive and prolonged litigation and the accompanying delay impeded industry's adjustment to the financial burden created by the congressional decisions to improve environmental quality, and undoubtedly retarded realization of clean air goals. Congress appears to have provided an answer to the problem in section 121 of the 1977 Amendments.⁴⁹ That section of the new legislation explicitly provides that tall stacks and other dispersion techniques may not affect the degree of emission limitation required for control of any air pollutant.⁵⁰ The Conference Report on the 1977 Amendments⁵¹ states that "dispersion technology is not an acceptable means of meeting State Implementation Plan emission limitations."⁵² However, the prohibition of the use of dispersion techniques to meet state emission requirements does not apply to those techniques that were employed prior to the date of the 1970 Amendments.⁵³ The 1977 Amendments are a commendable step in the right direction, but one which ought not to have awaited seven years of confused litigation for clarification.

Club, 412 U.S. 541 (1973), and *NRDC v. EPA*, 489 F.2d 390, 408 (5th Cir. 1974), *rev'd on other grounds*, 421 U.S. 60 (1975).

47. Indeed, it is interesting to note that EPA's position in *NRDC* seems to have been an attempt to minimize the state's economic dislocation. See text accompanying note 40 *supra*.

48. In the 1977 Amendments, Congress explicitly adopted the judicially developed construction that dispersion techniques could not be used to reduce the amount of emission limitation necessary for compliance with the Clean Air Act. See text accompanying notes 49-53 *infra*. For a detailed narration of the legislative history of this issue from 1970 to 1975, see *Kennecott Copper Corp. v. Train*, 526 F.2d 1149, 1156-60 (9th Cir. 1975), *cert. denied*, 425 U.S. 935 (1976).

49. Pub. L. No. 95-95, § 121, 91 Stat. 685 (1977) (to be codified in 42 U.S.C. § 7423).

50. *Id.*

51. H.R. REP. NO. 564, 95th Cong., 1st Sess. (1977).

52. *Id.* at 144.

53. Pub. L. No. 95-95, § 121, 91 Stat. 685 (1977) (to be codified in 42 U.S.C. § 7423).

2. *Development of Models for the Derivation of Emission Limitations from Ambient Levels*

EPA has developed models for states to follow in establishing specific emission limits once the national air quality standards have been set.⁵⁴ Thus, the structure of the model plays a significant role in determining the specific emission levels that will ultimately be tolerated from individual pollution sources. For this reason, both industry and the states have challenged the reasonableness of EPA models in court. Although the challenges have not been entirely successful,⁵⁵ these cases illustrate the factors that may form the basis of an attack.

In *South Terminal Corp. v. EPA*,⁵⁶ petitioners challenged EPA's transportation control plan for the Boston Metropolitan Area.⁵⁷ Among other grounds,⁵⁸ petitioners alleged that EPA's model had failed to consider local topography and meteorology,⁵⁹ had supplied an inaccurate relationship of secondary air pollutants to primary pollutants,⁶⁰ and had erroneously imposed the controls over a large region rather than only in heavily polluted localities.⁶¹ Although the court sustained EPA's model, the case illustrates the types of contentions that can be raised.⁶² Given the complexity of factors that EPA must consider when developing these models for states to use as guidelines in establishing emission limits,⁶³ challenges to such models will inhibit effective implementation of the Clean Air Act by promising delay and, perhaps, some victories for industry and recalcitrant states.

Similarly, in *Texas v. EPA*,⁶⁴ the state challenged EPA's revision of the state's implementation plan.⁶⁵ Determining that Texas' plan was not stringent enough to achieve the required

54. 40 C.F.R. §§51.41-.63 (1976). See notes 22-26 and accompanying text *supra*.

55. See text accompanying notes 56-62 & 64-70 *infra*.

56. 504 F.2d 646 (1st Cir. 1974).

57. Massachusetts failed to submit an implementation plan for EPA approval; therefore, EPA formulated a plan for the state pursuant to section 110(c) of the 1970 Amendments, 42 U.S.C. §1857c-5(c) (1970 & Supp. V 1975). See 504 F.2d at 654.

58. For a list of the other objections that were raised, see note 62 *infra*.

59. *Id.* at 662.

60. *Id.* In *South Terminal* the allegedly inaccurate relationship was between "photochemical oxidants," which are secondary pollutants "derived from the reaction of two primary pollutants, hydrocarbons and nitrogen," and hydrocarbons. *Id.* See note 67 *infra*.

61. 504 F.2d at 662-63.

62. *Id.* at 656-61 (procedural objections); *id.* at 662-67 (contention that emission reduction not needed); *id.* at 667-71 (assertion of lack of EPA authority); *id.* at 671-76 (argument that controls were arbitrary and capricious); *id.* at 676-80 (constitutional objections).

63. See notes 22-26 and accompanying text *supra*.

64. 499 F.2d 289 (5th Cir.), *cert. denied*, 419 U.S. 840 (1974).

65. 499 F.2d at 294.

ambient air quality⁶⁶ and rejecting the model Texas had used to derive the pollution controls set forth in the plan,⁶⁷ EPA revised the plan to align it with the results obtained through the use of a substitute model.⁶⁸ The Fifth Circuit upheld EPA's rejection of the model Texas had employed, finding it to be "unsupported by data, theory, or even meaningful explanations."⁶⁹ Although EPA's substitute model also lacked an empirical base, the court held that EPA's amendment of the Texas plan was not arbitrary or capricious.⁷⁰ Once again, then, EPA received a flexible and understanding judicial response; and the court's emphasis on the narrow scope of review suggests that EPA may continue to meet with success on the issue of whether its models for the formulation of state implementation plans are proper.⁷¹ However, EPA has had and may continue to have substantial difficulty in court on the equally significant and corollary issue of measurement accuracy.⁷²

The Second Circuit case of *National Resources Defense Council, Inc. v. EPA (NRDC v. EPA)*⁷³ arose from another problem posed by the conversion of national ambient air standards into specific emission limits. The petitioners challenged EPA's approval of New York's implementation plan on the ground that its emissions limits were inadequate to achieve the necessary ambient air quality.⁷⁴ New

66. *Id.* at 293.

67. *Id.* at 295. The type of model at issue was a reduction model. *Id.* Photochemical oxidant pollutants, or smog, can be controlled by limiting the emissions of hydrocarbons which typically occur "during the production, storage, transportation and use of a variety of petroleum products." *Id.* at 293 n.1. In determining the amount of reduction of hydrocarbon emissions necessary to maintain photochemical oxidant pollutants at the required level, reduction models are used to display the relationship between the hydrocarbon emissions and the resultant pollutants. The results derived from these models are then translated into the specific emission limitations contained in state implementation plans. *Id.* at 294-95.

68. *Id.* at 295.

69. *Id.* at 301.

70. *Id.* The court's view of the appropriate level of review was as follows: "Necessity, which has mothered the EPA's invention of this model, also protects it from a judicial insistence on greater reliability." *Id.* The court's utilization of the arbitrary and capricious standard of review was based upon section 10(e) of the Administrative Procedure Act, 5 U.S.C. § 706 (1970), which provides for judicial review of federal agency action in the absence of a specific statutory provision. 499 F.2d at 296-97.

It should be noted that although the court upheld EPA's use of a substitute model, certain regulations applicable to Texas' implementation plan were declared invalid. *Id.* at 310-18.

71. Judicial support for an EPA model does not guarantee, however, that it will be sufficiently stringent to achieve the national ambient air standards. It is possible that even EPA's model may sanction too much hydrocarbon emission, as the Fifth Circuit may have implied when it noted that EPA's substituted model was "neutral." See 499 F.2d at 301.

72. See text accompanying notes 79-122 *infra*.

73. 494 F.2d 519 (2d Cir. 1974).

74. *Id.* at 522.

York maintained that any inability to achieve the national standards was caused by prevailing winds from New Jersey which brought large quantities of the pollutant at issue — sulfur dioxide — into New York.⁷⁵ EPA defended its approval of New York's plan by claiming that the conversion from coal to oil as the energy source for power plants would alleviate the problem.⁷⁶ Finding that there was little likelihood of conversion to oil at a time when oil supplies were scarce, the court remanded the plan to EPA for further consideration.⁷⁷ *NRDC v. EPA* is nonetheless interesting because the problems of setting and implementing emission limitations encountered in the case appear to have resulted from the artificial geographic boundaries of the air quality control regions involved. New York and nearby New Jersey are really one vast industrial sprawl, which the wind helps to unify for air quality purposes. Perhaps EPA should be given the power to exercise broader authority over such interstate metropolitan complexes.⁷⁸

3. Test Procedures and Accuracy of Measurements

Before and after emission reduction models are applied, the amount of pollutant in the ambient air must be measured. Such measurement is essential for proper application of the model and for enforcement of the limitations set for individual polluters. Thus, even if a court approves EPA's model, there may be a further facet to an industry's challenge to a pollution control plan. Measurement of pollutant levels is a complex process,⁷⁹ and industry challenges to measurement have met with considerable success.

In *South Terminal Corp. v. EPA*,⁸⁰ the regulatees challenged three key measurements EPA had relied upon to formulate a transportation control plan for Boston: 1) the hydrocarbon level in the Boston region;⁸¹ 2) the carbon monoxide level in the Boston core

75. *Id.* at 525. The flow of New Jersey's sulfur dioxide emissions into New York reduced the quality of New York's air because New Jersey's limits for the pollutant were higher (.2% to .3% of ambient air) than New York's controls (.1%). *Id.*

76. *Id.*

77. *Id.* at 526.

78. See 42 U.S.C. § 1857c-2(c) (1970). Section 107(c) of the 1970 Amendments does authorize EPA to designate interstate areas as air quality control regions. *Id.* § 1857c-2(c). However, EPA may only promulgate its own implementation plan for a region after a state plan has been determined to be unsatisfactory. *Id.* § 1857c-5(c) (1970 & Supp. V 1975).

79. See Bleicher, *supra* note 25, at 325.

80. 504 F.2d 646 (1st Cir. 1974). For a prior discussion of *South Terminal*, see notes 56-62 and accompanying text *supra*.

81. 504 F.2d at 662. The level of hydrocarbons is related to the amount of photochemical oxidant pollutants — smog — in the air. See note 67 *supra*. Therefore, both the amount of photochemical oxidants and hydrocarbons must be measured in order to calculate emission limits. 504 F.2d at 662.

area; and 3) the carbon monoxide level at Logan Airport.⁸² After a review of the measurement and calculation methods and the alleged inadequacies of those methods, the First Circuit sustained all three challenges.⁸³

The hydrocarbon measurement was the result of one day's testing, during which the monitoring device recorded a number of different readings, suggesting that the equipment may have been defective.⁸⁴ The court was unwilling to affirm the accuracy of such unnecessarily suspicious key data, even though EPA argued that those readings could have resulted from other, innocent factors.⁸⁵

The court also sustained dual challenges to EPA's carbon monoxide data. EPA had based the calculations on a one-day reading in Kenmore Square taken in 1970, which was nearly twice as high as the next highest reading at that location.⁸⁶ Although even higher readings were recorded in other locations in different years, the court, relying on an EPA policy that other locations should serve as controls when there are significantly varying readings in one location, held that there was an insufficient basis upon which to affirm EPA's calculations.⁸⁷

EPA had also sought to impose controls to reduce private automobile use to and from Logan Airport (Logan) in East Boston.⁸⁸ These controls were ostensibly necessary to enable that area to meet national primary air standards. Because the evidence was meager and conflicting, the court ruled that it was not yet clear whether the air at Logan itself would meet national standards without the controls sought by EPA.⁸⁹ Based on EPA's projection that Logan traffic would affect the carbon monoxide level in the East Boston area,⁹⁰ EPA further argued that controls at Logan were required in any event if the rest of East Boston was to comply with the standards. EPA had not, however, even measured the carbon monoxide problem in East Boston, but had merely relied upon figures and formulae for the Boston core.⁹¹ Since a carbon monoxide

82. 504 F.2d at 662.

83. *Id.* at 666.

84. *Id.* at 662.

85. *Id.* EPA maintained that the irregular readings could have been caused by "instrument calibration, instrument zeroing, transmissions loss and depletion of span gas, all of which causes are unrelated to any malfunction." *Id.*

86. *Id.* at 663.

87. *Id.*

88. *Id.* at 655, 664.

89. *Id.* at 664.

90. *Id.* at 663-64. EPA had concluded that the carbon monoxide problem in the East Boston area was due to the concentration of traffic around Logan. *Id.*, citing 38 Fed. Reg. 20, 961 (1973).

91. *Id.* at 664-65.

pollutant tends to remain near the source of its emission, and because the traffic patterns at Logan are more concentrated than those of the core city, the court held that the record did not support EPA's conclusions.⁹²

Absent a thorough study of the record, it is difficult to judge whether the First Circuit ruled properly in *South Terminal*. It may well be that it is difficult to create a convincing record on issues of measurement. The opinion, however, provokes the more fundamental question of whether, regardless of the language used, the court applied a stricter standard of review than is customary.⁹³ Such a standard could have resulted from the unstated but self-evident fact that EPA's proposal was not one that would merely escalate the cost of doing business, but was one that "has been recognized from the outset to present delicate problems; inevitably it seems bound to come between the citizen and his automobile."⁹⁴ Such an articulation in judicial opinions of the tremendous conflict generated by air pollution from automobile use,⁹⁵ coupled with many cities' failure to provide adequate mass transit or to encourage people to use available mass transit services, suggest that the success of the nation's attempt to clean the air may depend on serious legislative reflection concerning more effective authority and strategies to reduce the use of the automobile or, alternatively, to impose stricter, and hence more expensive, controls on stationary sources.

Although the issue raised in *Texas v. EPA*,⁹⁶ was not strictly one of measurement, the case did present the related issue of the amount of reduction particular controls could be expected to achieve.⁹⁷ Texas challenged EPA's amended plan for the state on the ground that the EPA calculations of reactive hydrocarbon emissions⁹⁸ for the chemical processing and petroleum refining industries were too

92. *Id.* The court noted that airport traffic was confined to major arteries while center city traffic was more diffused; and, therefore, the patterns of carbon monoxide pollution resulting from vehicle exhaust systems would be different in the two areas. *Id.*

93. *Cf. Texas v. EPA*, 499 F.2d 289 (5th Cir.) *cert. denied*, 419 U.S. 840 (1974) (abuse of discretion standard); see notes 64-71 and accompanying text *supra*.

94. 504 F.2d at 654.

95. The extent of the conflict that transportation controls generate has been noted in other cases. See, e.g., *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 622 (D.C. Cir. 1973). As the court in *International Harvester* pointed out, the conflict is due not only to Americans' romance with the automobile; but also to the potentially catastrophic economic impact reduced automobile use could precipitate. *Id.* at 641.

96. 499 F.2d 289 (5th Cir.), *cert. denied*, 419 U.S. 840 (1974). For the previous discussion of this case, see notes 64-71 and accompanying text *supra*.

97. 499 F.2d at 301-02; see Bleicher, *supra* note 25, at 325-26.

98. The term reactive hydrocarbon emissions was defined by the court as "hydrocarbon emissions which react with nitrogen oxides to form oxidant pollutants." 499 F.2d at 298. See note 67 *supra*.

low.⁹⁹ To calculate the amount of reactive hydrocarbon in a given volume of hydrocarbon, it is necessary to apply to the total volume a fraction — the reactivity factor — that represents the relationship of reactive hydrocarbon to total hydrocarbon for a particular industry's types of emissions.¹⁰⁰ For both industries EPA had derived the challenged reactivity factors from empirical studies of similar industries in Los Angeles, California and Louisiana.¹⁰¹ With respect to the chemical processing industry, the court sustained EPA's reactivity factor, finding that EPA had given Texas the benefit of the doubt by applying a factor higher than the highest fraction supported by the studies.¹⁰² For petroleum refining, however, EPA used the lower of the factors from the studies without explaining why it chose the lower factor, thereby giving Texas no benefit of the doubt.¹⁰³ Therefore, the court ordered EPA to grant extensions to the petroleum refining industry for the implementation of some of the regulations that were sustained.¹⁰⁴

Texas v. EPA is a complex and cumbersome case. While some of EPA's actions were upheld, others were remanded. Further, the court ordered a delay in implementing portions of those that were sustained. From a reading of the case, it is difficult to determine whether the result was a victory or defeat for EPA, but from this perspective it appears to have been the latter. It is impossible, however, to level informed criticism at the court. The stakes were very high — quick and effective pollution control requiring an enormous capital investment likely to have an adverse impact upon the state's economy. It may be that under these circumstances judges unconsciously will insist that they be more fully convinced of the need for such an undertaking before deferring to EPA's determinations than in an ordinary review of an agency's actions. Tying emission restrictions, and hence the required capital investment, to a health, or any other ambient air or water quality standard, without also incorporating technological and economic considerations, seems to increase the judicial temptation to remain

99. 499 F.2d at 304-18. The result of the lower figure, which Texas wished to avoid, would be a requirement of greater controls for other sources of hydrocarbon emissions, specifically transportation, as in *South Terminal*. See notes 56-62, 88-94 and accompanying text *supra*.

100. 499 F.2d at 304.

101. *Id.* at 305, 308.

102. *Id.*

103. *Id.* at 308. EPA also failed to respond to the challenge that the use of the Los Angeles study for the derivation of the reactivity factor to be applied to the petroleum refining industry was invalid because that study was outdated — being based on 1955-58 data. *Id.*

104. *Id.* at 308.

unpersuaded that EPA's promulgations have been sufficiently considered.

*Portland Cement Association v. Ruckelshaus*¹⁰⁵ presented testing and measurement issues in yet another form. Here, industry challenged EPA's promulgated standards for new and modified stationary sources on a variety of grounds.¹⁰⁶ One aspect of the challenge which the District of Columbia Circuit Court accepted was that EPA's reliance upon a single test from one plant was improper because it formed an insufficient basis for concluding that all new plants could meet the standard thus derived.¹⁰⁷ In addition, the court criticized EPA's apparent use of the same test to derive a standard for plants which used a different process.¹⁰⁸ Since EPA had not complied with its own regulations with respect to the duration of the testing and the level of operation during testing,¹⁰⁹ the court upheld the petitioners' attack on EPA's sampling techniques.¹¹⁰ Petitioners also challenged the enforceability of EPA's opacity test, a regulation that defined opacity¹¹¹ and established a standard which no smoke stack plume was to exceed.¹¹² They relied upon an HEW experiment to argue that the test was unenforceable because opacity could not be objectively measured.¹¹³ Although the court did not rule the test arbitrary, it found the test's reasonableness unproven and required EPA to submit a more extensive record on remand.¹¹⁴ Apparently, the court did not specifically sustain or deny several other contentions, but indicated that EPA should address them on remand.¹¹⁵

The District of Columbia Circuit was not satisfied with the EPA actions it reviewed. Although the court did not specifically say so, it seems to have thought that EPA's decisionmaking process was

105. 486 F.2d 375 (D.C. Cir. 1973).

106. It will be recalled that the statutory standard for new sources was "the best demonstrated technology." See 42 U.S.C. § 1857c-6 (1970) (amended 1977). See also notes 31-33 and accompanying text *supra*.

107. 486 F.2d at 396.

108. *Id.*

109. *Id.* at 396-97 & n.79, citing 36 Fed. Reg. 24,876 (1971).

110. 486 F.2d at 396-99.

111. *Id.* at 401. The court took its definition of opacity from an EPA regulation, noting that "[o]pacity is defined by the regulation as 'the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.'" *Id.* at 400, quoting 36 Fed. Reg. 24,876 (1971).

112. 486 F.2d at 401, citing 36 Fed. Reg. 24,876 (1971). The regulation established that the required opacity level had to be "[g]reater than 10 percent opacity, except that where the presence of uncombined water is the only reason for failure to meet the requirements . . . , such failure shall not be a violation of this section." 36 Fed. Reg. 24,876 (1971).

113. 486 F.2d at 401.

114. *Id.*

115. See *id.* at 399-400.

hasty, haphazard, sloppy, and simply not supported by an amount of evidence commensurate with the gravity of the regulating contemplated.¹¹⁶ In this case, however, it is not possible to blame the health standard, because regulations for new sources of emissions are subject to a technology standard.¹¹⁷ Nor is it possible to blame the American desire to drive unfettered, for only stationary sources were involved. It is possible that this court, perhaps like the First and Fifth Circuits,¹¹⁸ was not fully convinced that EPA had derived its standards carefully enough to warrant the economic consequences that would follow enforcement.

It cannot be denied that the field of emission control is terribly complex and the development of standards difficult.¹¹⁹ That is why judges have been uniformly able to hold that regulations were insufficiently explained or supported. Although EPA's position can be understood, it is difficult to fault judges for pointing out that the emperor has no clothes. One solution to this difficulty may be simply for EPA to take more care and time in devising and promulgating standards;¹²⁰ but it may also be preferable to devise a system of pollution control that does not depend on such vulnerable measurement requirements.¹²¹ Although it is still unclear whether the courts will allow EPA sufficient discretion with regard to the issues of appropriate testing and measuring procedures, which are at the core of the conflict between the environment and the economy, so far EPA has experienced difficulty in producing acceptable records.¹²²

4. *Relevance of technological and economic feasibility*

The regulations governing existing stationary source emissions were the battleground for resolution of the question of whether Congress intended technological or economic infeasibility or

116. See *id.* at 402.

117. See text accompanying notes 31-33 *supra*.

118. See text accompanying notes 80-94, 96-104 *supra*.

119. See Bleicher, *supra* note 25, at 325.

120. For example, on appeal following remand of *Portland Cement*, the District of Columbia Circuit affirmed EPA's actions on the remand. *Portland Cement v. Ruckelshaus*, 513 F.2d 506, 509 (D.C. Cir. 1975).

121. For an opposing attitude concerning measurement requirements, see *Air Pollution Variance Bd. v. Western Alfalfa*, 9 ERC 1236, 1239 (Colo. 1976). In *Western Alfalfa*, the Colorado state court sustained the state board's measurements without detailed discussion. *Id.* at 1238-39. Although this case, which is more recent than the others, may indicate a shift in judicial attitudes, it is also possible that state courts are less reluctant to enforce strictures that harm the state's economy than the federal courts have been, since the state courts are not subject to criticism for federal intervention. Colorado's reputation as a state very much concerned with protecting its environmental quality may also provide a limited explanation for the court's holding.

122. For an excellent, detailed consideration of this problem, see Bleicher, *supra* note 25, at 325-27, 329-51.

impossibility to be relevant considerations in formulating emission limitations.¹²³ Industry has asserted that compliance with the requirements of some state implementation plans is too expensive to make further plant operations feasible. The National Resources Defense Council and others who seek vigorous enforcement of environmental protection legislation contend that Congress expected some plants to shut down if they could not operate within the required emission limitations.

The lower courts' responses to the feasibility issue had conflicted but the Supreme Court has recently resolved the issue. The Third, Fourth, Sixth, and Seventh Circuits had sustained industry challenges to EPA's approval of state plans. In *Buckeye Power, Inc. v. EPA*,¹²⁴ the petitioners sought review of a state plan which EPA had approved without allowing public comment.¹²⁵ The petitioners alleged that their inability to satisfy the requirements of the plan should have been taken into consideration in EPA's decision to approve the plan.¹²⁶ In a brief discussion, the Sixth Circuit rejected EPA's position that impossibility of compliance was irrelevant.¹²⁷ The court asserted that the legislative history on which EPA relied was too meager to support an interpretation that would threaten the continued operation of power plants across the country.¹²⁸ In addition, the court presented other legislative history to contradict EPA's argument.¹²⁹ Although the court purportedly rested its decision upon its version of the legislative history, its curt dismissal of EPA's position makes it likely that the court simply would not recognize a congressional intent with such far-reaching consequences without the support of an explicit statutory provision.¹³⁰

123. There can be no debate on this issue with regard to limits for new sources of emissions since the statute explicitly mandates that the standards for new sources are to be tied to considerations of infeasibility. See 42 U.S.C. § 1857c-6(a)(1) (1970); Pub. L. No. 95-95, § 109, 91 Stat. 685 (1977) (to be codified in 42 U.S.C. § 7411). See also text accompanying note 33 *supra*.

124. 481 F.2d 162 (6th Cir. 1973).

125. *Id.* at 165.

126. *Id.*

127. *Id.* at 168-69.

128. *Id.*

129. *Id.* at 168. The court noted that Congress had passed the House, rather than the Senate version of the 1970 Amendments and therefore concluded that language in the Senate Report to the effect that polluters unable to comply with the standards might be required to terminate operations was not determinative of legislative intent. *Id.*, citing S. REP. NO. 1196, 91st Cong., 2d Sess. 2-3 (1970). However, the House Report, which the court pointed out as indicating a contrary intent, dealt with sections of the bill that were deleted from the 1970 Amendments as finally enacted. See H.R. REP. NO. 1146, 91st Cong., 2d Sess. (1970). Therefore, it could be argued that the court incorrectly relied upon this substituted legislative history. See Bleicher, *supra* note 25, at 337-40.

130. See 481 F.2d at 168-69.

With a similar lack of support and perceptive discussion, the Third Circuit held, in *St. Joe Minerals Corp. v. EPA*,¹³¹ that Congress had vested in EPA authority to disapprove any state plan found to be technologically infeasible.¹³² Three years earlier, the Third Circuit had rejected EPA's initial approval of Pennsylvania's plan because EPA had not afforded St. Joe a hearing on feasibility, and had remanded the plan to EPA to conduct such a hearing.¹³³ At the conclusion of the hearing that was held on remand, EPA determined that certain provisions of the plan were technologically infeasible as applied to St. Joe,¹³⁴ but nevertheless refused to disapprove the plan, claiming that the 1970 Amendments did not authorize disapproval on that basis.¹³⁵ In holding that such authority did exist under the 1970 Amendments, the Third Circuit asserted that its present decision was implicit in its previous remand of the case.¹³⁶ As seemed to be true for the Sixth Circuit in *Buckeye Power*, however, the Third Circuit's underlying rationale appeared to be an unwillingness to endorse a state plan that would force shutdown without the existence of statutory language stating that Congress intended to produce such a result.¹³⁷

On the other hand, the Eighth Circuit in *Union Electric Co. v. EPA*,¹³⁸ expressly held that EPA must approve an otherwise proper plan regardless of its technological and economic feasibility,¹³⁹ and

131. 508 F.2d 743 (3d Cir. 1975), *vacated as moot*, 425 U.S. 987 (1976).

132. 508 F.2d at 748-49.

133. See *Duquesne Light Co. v. EPA*, 481 F.2d 1, 9 (3d Cir. 1973). In holding that the failure to provide St. Joe with a hearing was "fundamentally unfair", the court appeared to agree with St. Joe's contention that this failure constituted a denial of due process. *Id.* at 5 & 100.

134. See 508 F.2d at 745. St. Joe operated a zinc-smelting plant which emitted sulfur oxides. *Id.* at 744. The sulfur oxide controls included in the state's plan were far more stringent than the emission standard required by EPA for zinc smelters. *Id.*, citing 40 C.F.R. § 51 (1975).

135. See 508 F.2d at 745. EPA did propose, however, that Pennsylvania revise its plan and that enforcement against St. Joe be stayed. *Id.* at 745.

136. *Id.* at 747-48.

137. See *id.* at 748. In *St. Joe*, unlike *Buckeye Power*, the challenged limitation was apparently unnecessary to meet national standards. See *id.* at 745. Under the 1970 Amendments, however, states are free to adopt more restrictive standards than are essential for compliance with the national standards. 42 U.S.C. § 1857d-1 (Supp. V 1975). A Seventh Circuit case, *Indiana & Mich. Elec. Co. v. EPA*, 508 F.2d 839 (7th Cir. 1975), held that although one source's inability to comply with stricter controls would not defeat a plan, such inability could be raised as a defense in an individual enforcement action. *Id.* at 845. The Fourth Circuit aligned itself with the Third, Sixth, and Seventh Circuits on the issue of the authority of EPA to disapprove a state plan on the basis of infeasibility in *Appalachian Power Co. v. EPA*, 477 F.2d 495 (4th Cir. 1973).

138. 515 F.2d 206 (8th Cir. 1975), *aff'd*, 427 U.S. 246 (1976).

139. 515 F.2d at 215; see text accompanying notes 147-49 *infra*.

other circuits have intimated their apparent agreement.¹⁴⁰ The Eighth Circuit pointed out that the Senate version of the 1970 Amendments had prevailed in Conference,¹⁴¹ and therefore relied upon the statement in the Senate Report that “existing sources of pollution either should meet the standard of the law or be closed down.”¹⁴² The court additionally noted that the mandatory language of section 110(a)(2),¹⁴³ which imposed a duty upon EPA to approve a state plan, did not condition approval on technological or economic feasibility.¹⁴⁴

Although the Eighth Circuit was not insensitive to the effect that a shutdown would have on the economy, it was convinced that Congress had made a judgment which courts should respect. Therefore, the court concluded that if economic and technological considerations were to be evaluated in the approval of a plan, Congress would have to amend the statute.¹⁴⁵ Although this reading of the 1970 Amendments seemed to be most consonant with congressional will,¹⁴⁶ several courts rejected it thus causing considerable difficulty and delay in the enforcement of the 1970 Amendments.

The Supreme Court granted certiorari to the Eighth Circuit to resolve the conflict and uncertainty among the circuits. In *Union Electric Co. v. EPA*,¹⁴⁷ the Court reviewed the legislative history of the statute and unanimously concluded that Congress intended EPA to ignore considerations of technological and economic infeasibility when deciding to approve or reject a proposed state plan.¹⁴⁸ Two concurring justices, although agreeing that the general legislative intention was clear, questioned whether Congress really wanted to

140. See *NRDC v. EPA*, 507 F.2d 905, 914 (9th Cir. 1974); *South Terminal Corp. v. EPA*, 504 F.2d 646 (1st Cir. 1974); *Texas v. EPA*, 499 F.2d 289, 314 (5th Cir.) *cert. denied*, 419 U.S. 840 (1974); *NRDC v. EPA*, 494 F.2d 519, 527 (2d Cir. 1974). See also Bleicher, *supra* note 25, at 317 & n.7, 341 & nn.141-43.

141. 515 F.2d at 215. It should be noted that the House bill number was retained even though the text of the Senate bill prevailed. H.R. 17255, 91st Cong., 2d Sess. (1970); see 515 F.2d at 215.

142. 515 F.2d at 215, quoting S. REP. NO. 1196, 91st Cong., 2d Sess. 2-3 (1970). This report appears to supply the clear congressional intent that the circuit courts of appeals in *Buckeye Power* and *St. Joe* demanded. See text accompanying notes 130 & 137 *supra*.

The Eighth Circuit in *Union Electric* also quoted from Senator Muskie's equally explicit floor comments. 515 F.2d at 215, quoting 116 CONG. REC. 16091-96 (1970) (remarks of Sen. Muskie). The court further observed that the Senate bill had in fact prevailed in conference although the House bill number was retained. 515 F.2d at 215. See note 129 *supra*.

143. 42 U.S.C. § 1857c-5(a)(2) (1970 & Supp. V 1975).

144. 515 F.2d at 215-16.

145. *Id.* at 219.

146. *Accord*, Bleicher, *supra* note 25, at 322-25.

147. 427 U.S. 246 (1976).

148. *Id.* at 257.

force the Union Electric Company, which supplied electricity to a large portion of Missouri and neighboring states, to discontinue operations if it were unable to fulfill the requirements of the state plan.¹⁴⁹

The difficulty that the economic and technological feasibility issue has created in enforcing the 1970 Amendments is instructive and suggestive. Although the opinions of both the Eighth Circuit and the Supreme Court leave no doubt regarding the intention of Congress to preclude consideration of feasibility factors as they relate to health-based standards, a significant number of judges who faced the issue had been unwilling to take such a forceful position.¹⁵⁰ This reluctance may be due to pressures asserted by economic interest groups on the interpretation and implementation of legislation when their lobbyists have been unsuccessful in persuading Congress prior to the enactment of a statute. If the impact of economic considerations will be reflected in administrative and judicial decisions, it might be prudent to inject such considerations directly and narrowly into the deliberated statutory scheme. Moreover, even though the result that Congress apparently intended was finally reached within the judicial process, a great deal of litigation and delay preceded its achievement. And, indeed, as the concurring justices implied,¹⁵¹ the desirability of shutting down large industrial segments, if unable to comply, is dubious. Although the Eighth Circuit and the Supreme Court upheld EPA's position, both questioned the legislative judgment.¹⁵² The strictly health-based standards at issue in these cases may be admirable; but they may also be an impracticable and ultimately undesirable method of attaining a better environment.

5. *Nondegradation of Existing High-Quality Air*

Before the passage of the 1977 Amendments, a controversy had arisen over whether the nondegradation requirements of the 1970 Amendments prohibited further pollution of a region which had an air quality superior to that mandated by the primary and secondary air quality standards. This dispute emerged because the clean air legislation is founded upon ambient air quality, and provides for the

149. *Id.* at 270-72 (Powell, J. & Burger, C.J., concurring). In the 1977 Amendments, Congress does not appear to have addressed this issue, except with respect to new sources. See Pub. L. No. 95-95, § 109, 91 Stat. 685 (1977) (to be codified in 42 U.S.C. § 7411). See also text accompanying note 33 *supra*.

150. See notes 124-37 and accompanying text *supra*.

151. See text accompanying note 149 *supra*.

152. See 427 U.S. at 270-72 (Powell, J. & Burger, C.J., concurring); 515 F.2d at 219.

development of emission limitations based upon the achievement of desired air quality levels.

In *Sierra Club v. Ruckelshaus*,¹⁵³ the Sierra Club challenged an EPA regulation that stipulated that a state plan would meet the statutory criteria, even if it sanctioned the deterioration of the ambient air quality to the level specified in national secondary standards.¹⁵⁴ The District Court for the District of Columbia, the only court whose opinion was reported in this case,¹⁵⁵ relied upon language in the 1970 Amendments that stated that the purpose of the statute was to preserve and enhance the quality of air and upon an explicit statement in the Senate Committee Report that state plans would be required, to the maximum extent practicable, to maintain a quality of air superior to the minimum level.¹⁵⁶ The court decided that nondeterioration was an important goal of the statute, and held the regulation invalid.¹⁵⁷

After some delay, EPA promulgated new regulations to reflect this nondeterioration mandate,¹⁵⁸ but the issue remained sufficiently important to receive legislative attention. The 1977 Amendments attempt to resolve the nondeterioration issue. Section 127 of the statute¹⁵⁹ adds ten new provisions to the Clean Air Act.¹⁶⁰ Although the legislation is still young, some observations may be made with respect to it. In general, the new provisions seem designed to check deterioration more effectively than the EPA regulations.¹⁶¹ In

153. 344 F. Supp. 253 (D.D.C. 1972), *aff'd per curiam*, No. 72-1528 (D.C. Cir. Nov. 1, 1972), *aff'd per curiam by an equally divided court sub nom. Fri v. Sierra Club*, 412 U.S. 541 (1973).

154. 344 F. Supp. at 254.

155. The opinion of the District of Columbia Circuit Court of Appeals affirming the district court's judgment was not reported. *Sierra Club v. Ruckelshaus*, No. 72-1528 (D.C. Cir. Nov. 1, 1972) (*per curiam*). The case was affirmed by the United States Supreme Court by an equally divided court without opinion. *Fri v. Sierra Club*, 412 U.S. 541 (1973) (*per curiam*).

156. 344 F. Supp. at 255, *citing* 42 U.S.C. § 1857(b)(1) (1970), and S. REP. NO. 1196, 91st Cong., 2d Sess. 2 (1970).

157. 344 F. Supp. at 255-56.

158. 40 C.F.R. § 52.21 (1976); *see Note, Review of EPA's Significant Deterioration Regulations: An Example of the Difficulties of the Agency - Court Partnership in Environmental Law*, 61 VA. L. REV. 1115 (1975). The validity of the regulations was sustained in *Sierra Club v. EPA*, 540 F.2d 1114 (D.C. Cir. 1976), *cert. denied*, 97 S. Ct. 1610 (1977).

159. Pub. L. No. 95-95, § 127, 91 Stat. 685 (1977) (to be codified in 42 U.S.C. § 7470).

160. *See id.*

161. The regulations, for example, divided areas into three classes, and emissions permissible in Class I areas were significantly lower than those allowed in Class II areas. 40 C.F.R. § 52.21(c)(2)(i) (1976). Similarly, Class III areas were limited only by the national ambient air quality standards. *Id.* § 52.21(c)(2)(ii). The regulations placed all areas into Class II initially and then allowed for redesignation. *Id.* § 52.21(c)(3)(i). The 1977 Amendments, on the other hand, add a new section to the Clean Air Act which places some specified types of land in Class I and precludes redesignation of those areas. Pub. L. No. 95-95, § 127(a), 91 Stat. 685 (1977) (adding, *inter alia*, § 162(a)

addition to codifying the regulations with respect to new sources,¹⁶² the new sections supplement the list of pollutants for which emission control regulations must be established to prevent deterioration.¹⁶³ However, the statute now provides EPA with the authority to grant variances for the construction of new sources in federally managed Class I¹⁶⁴ regions.¹⁶⁵ The new provisions also preclude judicial review of the grant of such a variance if the President decides that a variance for the proposed facility is "in the national interest."¹⁶⁶ This lack of opportunity for judicial review seems inimical to attempts to preserve existing high-quality air. However, evaluation of the full effect of these new sections must await instances of their application.

Before the enactment of the 1977 Amendments, deterioration was inadvertently allowed in another context. The dispersion technique cases¹⁶⁷ have generally condoned the use of tall stacks, a control method that spreads the pollutant over a larger area. It seems that this technique could succeed only if the outlying areas receiving the pollutant are already in compliance with national standards. However, tall stacks undoubtedly will deteriorate the air quality in those areas. It may be that the limitations expressed in the Senate Committee Report on the 1970 Amendments — nondeterioration to the maximum extent *practicable*¹⁶⁸ — operated in the tall stack cases, since tall stacks were permitted only after the maximum feasible use has been made of emission reduction systems.¹⁶⁹ However, since these cases did not address the deterioration implications of dispersion, they clouded the boundaries of the nondeterioration policy.

to Clean Air Act) (to be codified in 42 U.S.C. § 7472(a)). In addition, the 1977 Amendments require procedures prior to redesignation which are more exacting than those required under the regulations. *Compare id.* (adding, *inter alia*, § 164 to Clean Air Act) (to be codified in 42 U.S.C. 7474), with 40 C.F.R. § 52.21(c)(3) (1976). These procedures usually will be important when industry seeks to alter a Class II designation into a Class III, a change which would permit a larger amount of emissions to occur.

162. *Compare* Pub. L. No. 95-95, § 127, 91 Stat. 685 (1977) (adding § 165 to Clean Air Act) (to be codified in 42 U.S.C. § 7475), with 40 C.F.R. § 52.21(d) (1976).

163. *See* Pub. L. No. 95-95, § 127, 91 Stat. 685 (1977) (adding § 166 to Clean Air Act) (to be codified in 42 U.S.C. § 7476).

164. *See* note 161 *supra*.

165. *See* Pub. L. No. 95-95, § 127, 91 Stat. 685 (1977) (adding § 165(d)(2)(D)(i) to Clean Air Act) (to be codified in 42 U.S.C. § 7475(d)(2)(D)(i)).

166. *See id.* (adding § 165(d)(2)(D)(ii) to Clean Air Act) (to be codified in 42 U.S.C. § 7475(d)(2)(D)(ii)).

167. *See* note 42 and accompanying text *supra*.

168. S. REP. No. 1196, 91st Cong., 2d Sess. 2 (1970); *see* text accompanying note 156 *supra*.

169. *See* notes 34-42 and accompanying text *supra*.

The stack height provisions of the 1977 Amendments¹⁷⁰ should enable the courts to clarify this problem. Since the new amendments do not permit tall stacks or other dispersion techniques to be credited toward emission reductions,¹⁷¹ implementation of that provision should eliminate, finally, deterioration occasioned by dispersion.

6. *Federalism*

The federalist structure of the United States has hampered effective enforcement of emission limitations. Any large nation requires regional and local centers of administration. In a unitarian state the officials of such outposts are generally appointed by and directly responsible to the national government. In a federation, however, the officials of state governments respond primarily to their individual states and only incidentally to the central administration.

An ambitious scheme like the Clean Air Act can succeed only if there is an operable mechanism for development and application of emission restrictions with respect to each pollution source. Although the federal government could have established local administrative bodies to perform that function, this would have needlessly duplicated existing state organizations, and could have created an undesirable friction between state and federal authority. Thus, the effort to enforce the 1970 Amendments virtually demanded a joint federal-state venture. Such a method of implementation, however, has created serious administrative problems.

State officials, whose allegiance is primarily to their states, are understandably reluctant to promulgate stringent implementation plans that will damage the local economy. Some states have refused to devise politically unpopular plans,¹⁷² while others have attempted to use models or test methods which reduce the need for expensive controls.¹⁷³ Although EPA possesses the power to substitute its own provisions when necessary, a decision to do so entails some delay and more significantly, may result in excessively rapid decisionmaking that is vulnerable to attack in the courts.¹⁷⁴

The federal structure of the United States has also restricted EPA's power to require the states to adopt measures necessary for the enforcement of national air quality standards. Although the

170. Pub. L. No. 95-95, § 121, 91 Stat. 685 (1977) (to be codified in 42 U.S.C. § 7423).

171. See text accompanying notes 49-53 *supra*.

172. See, e.g., *South Terminal Corp. v. EPA*, 504 F.2d 646 (1st Cir. 1974). For a discussion of *South Terminal*, see notes 56-62, 80-94 and accompanying text *supra*.

173. See, e.g., *NRDC v. EPA*, 489 F.2d 390 (5th Cir. 1974). For a discussion of *NRDC*, see text accompanying notes 36-42 *supra*.

174. See, e.g., *South Terminal Corp. v. EPA*, 504 F.2d 646 (1st Cir. 1974).

issue may arise in other contexts as well, in particular, EPA has suffered several defeats in its attempts to require states to impose and enforce transportation controls. In the transportation control cases,¹⁷⁵ EPA had determined that certain state implementation plans could not achieve national air quality standards because those plans failed to include methods of controlling and reducing automobile use.¹⁷⁶ EPA promulgated plans for the affected states and, because the federal government had no authority to implement those plans,¹⁷⁷ insisted that the states adopt legislative and administrative machinery to enforce the federally created controls.¹⁷⁸ Federal sanctions against state governments and officials were to accompany any failure to adopt such machinery.¹⁷⁹ The affected states and private parties argued that EPA's action was not authorized by the statute and, even if authorized, was unconstitutional as beyond the scope of the Commerce Clause.

Three circuits that have faced the issue of EPA's authority to compel the states to adopt the machinery necessary to enforce federally promulgated controls have upheld the states' challenges.¹⁸⁰ Those courts began with the premise that the constitutional question should not be reached if resolution of the statutory issue disposed of the case, and all three held that the 1970 Amendments did not authorize EPA to require the states to adopt legislation and

175. See, e.g., *Maryland v. EPA*, 530 F.2d 215 (4th Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977); *District of Columbia v. Train*, 521 F.2d 971 (D.C. Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977); *Alaska v. EPA*, 521 F.2d 842 (9th Cir. 1975); *Brown v. EPA*, 521 F.2d 827 (9th Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977); *Arizona v. EPA*, 521 F.2d 825 (9th Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977). See also *Friends of the Earth v. Carey*, 552 F.2d 25 (2d Cir. 1977); *Pennsylvania v. EPA*, 500 F.2d 246 (3d Cir. 1974).

176. It could be argued that EPA's assertion of the inability of a state plan to achieve national air quality standards was inaccurate in the New York case, *Friends of the Earth v. Carey*, 552 F.2d 25 (2d Cir. 1977). The court there stated that New York's plan was approved by EPA with certain revisions, but did not indicate what the revisions were. *Id.* at 30. The body of the opinion, however, implies that the transportation controls were developed by the state and New York City rather than by EPA. *Id.* at 33-39.

177. For a statement of EPA's position that the 1970 Amendments did not contemplate direct federal enforcement of state transportation control plans, see 38 Fed. Reg. 30, 632-33 (Nov. 6, 1973).

178. See, e.g., *Pennsylvania v. EPA*, 500 F.2d 246, 254-59 (3d Cir. 1974).

179. 40 C.F.R. § 52.53 (1976); see *Brown v. EPA*, 521 F.2d 827, 831 (9th Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977); *Pennsylvania v. EPA*, 500 F.2d 246, 254-56 (3d Cir. 1974).

180. *Maryland v. EPA*, 530 F.2d 215 (4th Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977); *District of Columbia v. Train*, 521 F.2d 971 (D.C. Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977); *Alaska v. EPA*, 521 F.2d 842 (9th Cir. 1975); *Brown v. EPA*, 521 F.2d 827 (9th Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977); *Arizona v. EPA*, 521 F.2d 825 (9th Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977). The Ninth Circuit decided three of the five decisions. Both *Arizona* and *Alaska* are brief decisions, relying upon *Brown*. 521 F.2d at 826; *id.* at 844.

administrative tools to enforce federally promulgated state plans.¹⁸¹ Only the Third Circuit held that Congress intended that EPA direct state enforcement activity and found such an intent to be constitutional.¹⁸²

The merits of the transportation control cases aside, the posture of their results could have considerably, if not insurmountably, impaired the effectiveness of the entire 1970 Amendments. Nothing in the decisions appeared to limit their application to transportation control plans; thus, recalcitrant states could have, if pressures had become severe enough,¹⁸³ refused to perform any of the administrative and enforcement functions required of them under the 1970 Amendments. Although legally competent to do so, it would be difficult for the federal government to devise and enforce nationwide controls. While limiting their holdings to the statutory issue, all three circuits strongly implied that any statutory attempt to compel the states to legislate and administer pollution control programs at the decree of the federal government would be unconstitutional.¹⁸⁴ Thus, an argument that Congress could explicitly overrule those decisions, thereby forcing the constitutional issue, seems useless. There is, however, little likelihood that the states would stage a general insurrection against pollution control which would go unreflected in national legislation. Thus, the result of EPA's defeats in the transportation control cases might have become a compromise plan which the states could have, politically speaking, accepted and enforced. Nevertheless, because pollution control depends on enforced emission limitations, which in turn depend on effective local administration, and since there are legal as well as political

181. *Maryland v. EPA*, 530 F.2d 215 (4th Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977); *District of Columbia v. Train*, 521 F.2d 971 (D.C. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977); *Alaska v. EPA*, 521 F.2d 842 (9th Cir. 1975); *Brown v. EPA*, 521 F.2d 827 (9th Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977); *Arizona v. EPA*, 521 F.2d 825 (9th Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977). It should be noted that EPA does have the authority to invoke sanctions against states that fail to comply with the substantive features of a plan. 42 U.S.C. § 1857c-8 (1970 & Supp. V. 1975).

182. *Pennsylvania v. EPA*, 500 F.2d 246, 259, 263 (3d Cir. 1974). In *Friends of the Earth v. Carey*, 552 F.2d 25 (2d Cir. 1977), the court stated that it need not and would not reach the question treated in the other cases because the state and city, and not EPA, had developed the plan. *Id.* at 39.

183. It is reasonable to believe that state resistance over transportation control is not accidental. As has been previously noted, the conflict between a clean environment and a stable economy and lifestyle is particularly acute in this context. See notes 94-95 and accompanying text *supra*.

184. See, e.g., *District of Columbia v. Train*, 521 F.2d 971, 972 (D.C. Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977). This case appears to have reached and decided the constitutional issue, although it held earlier in its opinion that the statute did not authorize EPA's actions. *Id.* at 986. See also *Brown v. EPA*, 521 F.2d 827, 837-42 (9th Cir. 1975), *vacated and remanded*, 97 S. Ct. 1635 (1977).

limitations on the extent to which the central government may mandate state and local action in our federation, a difficult enforcement problem exists which may hamper achievement of national goals.¹⁸⁵

The 1977 Amendments seem to have responded, albeit to a limited degree, to the enforcement difficulty presented. Section 111¹⁸⁶ commands EPA to institute civil actions for injunctions and penalties in cases of violation by "major stationary source[s]."¹⁸⁷ The 1970 Amendments had permitted, but did not require, such action.¹⁸⁸ The new provision, however, seems a weak response, one which may not have an impact sufficient to produce adequate enforcement. The provision is weakened further because the same section allows a defendant to recover litigation expenses in cases where the court determines that EPA brought suit unreasonably.¹⁸⁹

7. *Impossibility of Deriving a Health-based Emission Standard*

With respect to at least two hazardous air pollutants,¹⁹⁰ EPA found it impossible to meet the 1970 Amendments' requirement that emission standards be based on public health and welfare ramifications.¹⁹¹ Faced with this impossibility, EPA promulgated regulations based on available control techniques,¹⁹² an unauthorized retreat to a technological standard. This phenomenon, which may become more widespread, illustrates one of the problems engendered by a pollution control statute that mandates health-based emission standards: the data necessary to support promulgation of a particular emission level may be unavailable due to the present level of medical knowledge. EPA's retreat to a technological base was probably appropriate, but the need for such an *ex post facto*

185. *Friends of the Earth v. Carey*, 552 F.2d 25 (2d Cir. 1977), does not disturb this conclusion. On the contrary, taken in conjunction with the other cases, *Friends of the Earth* suggests that as long as any state is sufficiently recalcitrant to compel EPA to draft a plan for that state, a state may escape the requirement that it enforce the plan. See *id.* at 38-39; notes 176 & 182 *supra*.

186. Pub. L. No. 95-95, § 111, 91 Stat. 685 (1977) (to be codified in 42 U.S.C. § 7413).

187. *Id.* § 111(a) (amending § 113(a)(5) of Clean Air Act) (to be codified in 42 U.S.C. § 7413(a)).

188. See 42 U.S.C. § 1857c-8(a)(1) (1970).

189. Pub. L. No. 95-95, § 111(b)(3), 91 Stat. 685 (1977) (amending § 113(b) of Clean Air Act) (to be codified in 42 U.S.C. § 7413(b)).

190. The two hazardous air pollutants are asbestos and vinyl chloride. 2 POLL. CON. GUIDE (CCH) ¶ 3223, *citing* EPA BACKGROUND INFORMATION ON DEVELOPMENT OF NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS — ASBESTOS, BERYLLIUM, AND MERCURY (Air Pollution Technical Data Series, No. APTD-1503, March 1973) (asbestos); 40 Fed. Reg. 59,531, 59,534 (1975) (vinyl chloride).

191. See 2 POLL. CON. GUIDE (CCH) ¶ 3223, *citing* EPA BACKGROUND INFORMATION ON DEVELOPMENT OF NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS — ASBESTOS, BERYLLIUM, AND MERCURY (Air Pollution Technical Data Series, No. APTD-1503, March 1973); 40 Fed. Reg. 59,531, 59,534 (1975).

192. 40 Fed. Reg. 59,531, 59,534 (1975).

modification of the statute suggests that Congress legislated without sufficient knowledge and/or thought about the impossibility of fulfilling this and possibly other administrative responsibilities imposed by the 1970 Amendments. Significantly, the 1977 Amendments authorize EPA to order adoption of a specific technology if EPA concludes that technological or economic considerations preclude a health-based requirement.¹⁹³

C. Summary

The Clean Air Act Amendments of 1970 and 1977 were enacted in large part to accelerate the pace of the implementation of effective air pollution controls.¹⁹⁴ Yet, indications are that the pace has not quickened. Difficulties spring from the alleged impossibility of achieving national ambient air quality standards based upon health and welfare factors, because of a lack of sophisticated technology and the prohibitive costs of the technology that is available.¹⁹⁵ Although prior to the 1977 Amendments¹⁹⁶ there was little support in the Clean Air Act or its legislative history for the view that economic and technological feasibility factors were to limit the health-based standards, the endorsement of this position in some of the circuits¹⁹⁷ caused considerable delay in enforcing pollution controls until the Supreme Court held to the contrary.¹⁹⁸ It may be that the economic impact of health-based regulations will always find a way, as hydras grow heads, to inhibit enforcement. If Congress is committed to a health-based air quality, a tougher declaration of congressional policy, such as that contained in portions of the 1977 Amendments,¹⁹⁹ might help to destroy industrial, local, and judicial resistance to its realization. It may be worth asking and discussing, however, whether the Congress and the country are committed to such a course, and whether such a course is prudent, given the extent of economic dislocation which industry asserts would ensue.

Furthermore, pollution control, even if possible to achieve, is expensive both in terms of dollars and the inevitable restraints on individual activities, notably automobile use. It is far from apparent that our society has decided to sacrifice either its standard of living

193. Pub. L. No. 95-95, § 110, 91 Stat. 685 (1977) (adding § 112(e)(1) & (2) to Clean Air Act) (to be codified in 42 U.S.C. § 7412(e)(1) & (2)).

194. See note 11 and accompanying text *supra*.

195. See notes 123-152 and accompanying text *supra*.

196. See text accompanying note 33 *supra*.

197. See notes 124-137 and accompanying text *supra*.

198. See notes 147-149 and accompanying text *supra*.

199. *E.g.*, Pub. L. No. 95-95, § 121, 91 Stat. 685 (1977) (to be codified in 42 U.S.C. § 7423) (stack heights).

or its luxuries not to mention both, for the sake of its descendants. Although dissatisfaction with the present air pollution control program is manifested in several ways — challenges to measurement accuracy,²⁰⁰ states' refusal to adopt and enforce transportation controls,²⁰¹ and contests over permissible control strategies²⁰² — the root of each manifestation is probably a basic unwillingness to make the necessary sacrifice.

III. WATER POLLUTION CONTROL

A. Legislation

As with the effort to control air pollution, the federal interest in water pollution control is nearly thirty years old.²⁰³ The first serious federal involvement, however, occurred under the Water Quality Act of 1965 (1965 Water Act),²⁰⁴ which required the states to develop water quality standards and submit them to the Secretary of Health, Education and Welfare (Secretary) for federal approval.²⁰⁵ To fulfill their statutory obligations, the states had to designate water body use, develop ambient water quality criteria based upon the particular use, and formulate a plan to implement and enforce the criteria.²⁰⁶ The Secretary was authorized to promulgate water quality standards for uncooperative states, but only after a lengthy procedure not unlike that involved in the 1967 Air Act.²⁰⁷ Federal enforcement of federal standards could occur only after notice and with the consent of the state governor, unless an interstate effect was shown.²⁰⁸ Several years' experience with the use-based statute and minimal federal involvement created a sense that not only should the federal role be increased but also that technological feasibility should replace use as the basis for effluent limitations.²⁰⁹

In response to the perceived shortcomings of the 1965 Water Act,²¹⁰ the amendments of 1972 attempted to alter the statutory

200. See notes 80-119 and accompanying text *supra*.

201. See notes 175-182 and accompanying text *supra*.

202. See text accompanying notes 36-42 *supra*.

203. See Water Pollution Control Act of 1948, ch. 758, 62 Stat. 1155 (1948); Zener, *The Federal Law of Water Pollution Control*, in FEDERAL ENVIRONMENTAL LAW 682, 683 (E. Dolgin ed. 1974).

204. Pub. L. No. 89-234, 79 Stat. 903 (1965) (amended 1972); see Zener, *supra* note 203, at 715.

205. Pub. L. No. 89-234, § 5(c)(1), 79 Stat. 903 (1965); see Zener *supra* note 203, at 715-19.

206. Pub. L. No. 89-234, §§ 5(c)(1)(A), (B), (c)(2), 79 Stat. 903 (1965).

207. *Id.* § 5(c)(2), (4); see note 8 *supra*.

208. Pub. L. No. 89-234, § 6, 79 Stat. 903 (1965); see Zener, *supra* note 203, at 715.

209. Zener, *supra* note 203, at 718-19.

210. *Id.* at 719. For an excellent and thorough description of the 1965 Water Act, see La Pierre, *supra* note 11, at 807-12, 826-28.

scheme of water pollution control. Under the present Federal Water Pollution Control Act (FWPCA),²¹¹ dischargers must meet the effluent limitations imposed by the original use-based water quality criteria or those imposed by the newly enacted technology-based standards, whichever is more stringent.²¹² The establishment of a national discharge permit system²¹³ had made the enforcement of these effluent limitations more likely.

For the first time under any air or water pollution control legislation, the federal agency, EPA, is to develop the new effluent limitations on the basis of plant categories.²¹⁴ For dischargers other than publicly owned treatment works, EPA, taking into account a variety of factors,²¹⁵ was to establish limitations for 1977 commensurate with the effluent purity achievable through the use of the "best practicable control technology currently available."²¹⁶ EPA is to promulgate effluent purity standards for 1983 equal to that attainable by use of the "best available technology economically achievable."²¹⁷ The 1977 standard for publicly owned treatment facilities in existence on July 1, 1977 or approved for federal financing at least three years earlier is "secondary treatment."²¹⁸ By 1983 all publicly owned facilities must reach the level that can be achieved with the "best practicable water treatment technology."²¹⁹ Standards for new pollution sources are to be based on "best available demonstrated control technology, processes, operating methods, or other alternatives."²²⁰ EPA is required to define each of the statutory terms to be used as a standard in accordance with the legislative intent.²²¹ Direct dischargers are prohibited from expelling any pollutant for which a limitation within their plant category has been established unless they obtain a permit from EPA, specifying a precise discharge limit for the particular plant.²²² If they satisfy the

211. 33 U.S.C. §§ 1251-1376 (Supp. V 1975).

212. *Id.* § 1313.

213. *Id.* §§ 1341-1345.

214. *Id.* § 1311(b). Manufacturing and refining processes are grouped together in the statute as plant categories on the basis of the process involved. *Id.* § 1316(b)(1)(A). Such categories include, *inter alia*, petroleum refining, leather tanning and finishing, rubber processing, dairy product processing, and textile mills. *Id.*

215. *Id.* § 1314(b)(1)(B).

216. *Id.* § 1311(b)(1)(A).

217. *Id.* § 1311(b)(2)(A).

218. *Id.* § 1311(b)(1)(B).

219. *Id.* § 1311(b)(2)(B).

220. *Id.* § 1316(a)(1). The term "new source" is defined in the statute as any source which is constructed after the effluent standards applicable to such sources have been promulgated. *Id.* § 1316(a)(2). A "source" includes "any building, structure, facility, or installation from which there is or may be the discharge of pollutants." *Id.* § 1316(a)(3).

221. *Id.* §§ 1311(b), 1314.

222. *Id.* § 1311(a).

statutory requirements governing state-administered permit programs, each state is authorized to issue permits,²²³ subject to an EPA veto power over each permit.²²⁴ If this elaborate framework for water pollution control fails to maintain use-based ambient water quality standards, the FWPCA provides for the downward adjustment of effluent restrictions to meet those standards.²²⁵

Thus the hallmarks of the FWPCA, as compared to earlier water legislation and the Clean Air Act, are 1) centralization in the federal government of direct control over effluent limitations,²²⁶ and 2) establishment of effluent limitations based primarily on the pragmatic consideration of what can be done, relegating the standards that should be achieved to a secondary, albeit important, position.²²⁷

B. Establishing Effluent Guidelines

EPA has engaged private consultant firms to study and analyze the various control technologies that are applicable to each industry.²²⁸ EPA began the process by preliminarily dividing industry into categories.²²⁹ The reports of the consultants were then expected to fully define industrial categories for which separate effluent limitations needed to be developed.²³⁰ If establishment of the appropriate effluent limitations required further subdivision of the categories, the consultants were to establish subcategories on the basis of such factors as raw materials used, product produced, and manufacturing process employed.²³¹ The reports were also to identify the various technologies available to each subcategory, determine

223. *Id.* § 1342(b). In order to qualify as a permit issuer a state must submit to EPA "a full and complete description of the program it proposes to establish" and must demonstrate that it has adequate authority to implement the program. *Id.* In order to approve a state permit system EPA must be satisfied that the program provides for the issuance of permits in compliance with the FWPCA's requirements. *Id.* § 1342(b)(1)-(9).

224. *Id.* § 1342(a)(5).

225. *Id.* § 1313.

226. *See* E.I. duPont de Nemours & Co. v. Train, 528 F.2d 1136, 1137-38 (4th Cir. 1975), *aff'd*, 430 U.S. 112 (1977).

227. *See* Zener, *supra* note 203, at 718-19.

228. United States Environmental Protection Agency, Request for Proposals for Effluent Guidelines Contracts (1973) [hereinafter cited as Request for Proposals]. The authority to engage private consultants is found in EPA's power to make such rules and regulations as it deems necessary to perform its functions under the FWPCA. 33 U.S.C. § 1361(a) (Supp. V 1975). *See* American Frozen Food Inst. v. Train, 539 F.2d 107, 133-34 (D.C. Cir. 1976); American Meat Inst. v. EPA, 526 F.2d 442, 446 (7th Cir. 1975).

229. Request for Proposals, *supra* note 228, pt. II, at 4.

230. *Id.*

231. *Id.* In fact, such subcategorization occurred with respect to almost every category. *See* 40 C.F.R. §§ 405.10-460.12 (1976).

which technologies were those identified under the FWCPA for each subcategory, and propose effluent limitations.²³² Since the purpose of these reports was to provide the information necessary for EPA to promulgate regulations,²³³ consultants were instructed to supply strong corroborating data to substantiate their conclusions.²³⁴

This federally controlled, technology-based, method of formulating effluent limitations provides a striking contrast to the system used to control air pollution. Under the Clean Air Act, EPA is directed to propose emission control systems to the states, and to provide them with models to be used in achieving the amount of emission reduction deemed necessary.²³⁵ However, since a state can comply with the Clean Air Act by accumulating sufficient reductions to equal the total required,²³⁶ adherence to EPA's models is unnecessary if the state can devise a satisfactory alternative to achieve emission reduction.²³⁷ The FWPCA avoids this problem by centralizing effluent limit decisionmaking in the EPA; thus, a state does not perform any function that can serve as a mechanism to challenge EPA's model.²³⁸ The accuracy of EPA's models under the Clean Air Act has been especially vulnerable to challenge because precise measurement is a difficult art, which must consider a variety of factors.²³⁹ The FWPCA's use of technological standards, however, may suggest a way to avoid the measurement problems encountered under the Clean Air Act, because the FWPCA eliminates the need for much of the measurement and prediction of the ambient quality of the water²⁴⁰ that has proven so troublesome under the Clean Air Act.²⁴¹ The technology-based approach has not, however, eliminated the enforcement problems created by measurement difficulties. Persuading courts that certain technologies are practicable or

232. Request for Proposals, *supra* note 228, pt. II, at 1-2. See La Pierre, *supra* note 11, at 810-11.

233. Request for Proposals, *supra* note 228, pt. II, at 2.

234. *Id.*

235. See notes 22-26 and accompanying text *supra*.

236. 42 U.S.C. § 1857c-5(a)(2) (1970).

237. See, e.g., *Texas v. EPA*, 499 F.2d 289 (5th Cir.), *cert. denied*, 419 U.S. 840 (1974). For a discussion of this case, see notes 64-72 and accompanying text *supra*.

238. For a discussion of the centralization of decisionmaking in EPA under FWPCA, see notes 214-221 and accompanying text *supra*. In contrast, under the Clean Air Act, individual states are responsible for developing plans to implement the federal ambient air quality standards. 42 U.S.C. § 1857c-5(a)(1) (1970). The state plans are subject to industrial challenge on a variety of grounds. See notes 36-42, 124-130 and accompanying text *supra*.

239. See, e.g., *South Terminal Co. v. EPA*, 504 F.2d 646 (1st Cir. 1974); *Texas v. EPA*, 499 F.2d 289 (5th Cir.), *cert. denied*, 419 U.S. 840 (1974).

240. See notes 214-221 and accompanying text *supra*. The FWCPA directs EPA to establish effluent limitations based upon a technological standard, rather than upon the quality of the ambient water. 33 U.S.C. §§ 1311(b)(1)(A), (2)(A), (B) (Supp. V 1975).

241. See notes 79-122 and accompanying text *supra*.

achievable is fraught with difficulties, and sustaining precise effluent limitations based upon such technologies has not regularly met with success. Therefore, it is not possible at this point to draw a firm conclusion concerning the utility of the technological foundation of the FWPCA.

C. *Difficulties In Administration*

The FWPCA has given rise to litigation in two significant areas relating to the creation of effluent quality restrictions and their application to individual polluters. Questions concerning the nature and scope of the centralization of authority in EPA to control effluent quality have been resolved,²⁴² but administrative difficulties arising from the technology base of the statute remain.

1. *Centralization of Authority to Apply Discharge Limits to Point Sources*

The heart of the FWPCA's attempt to regulate pollution lies in the requirement that the discharge of any pollutant must be authorized by permit.²⁴³ Recognizing that if the permit system were not capable of administration, or were subject to subversion, the framework of the statute would collapse, EPA attempted to avert those contingencies by asserting 1) that it had the power to prescribe exact effluent criteria for classes or categories of effluent source points, and 2) that the permit issuer²⁴⁴ must apply the effluent criteria established for a class of dischargers to each point source within the class.²⁴⁵ The first proposition would permit EPA to create a sufficiently small number of point source categories to enable it to devise effluent criteria effectively. EPA's second proposition would prevent state authorities from routinely granting variances in order to appease local industry and would avoid the impossible burden that permit issuers, be they the states or EPA, would inevitably face if the individual circumstances of every point source had to be considered before restrictions could be imposed upon its effluent.²⁴⁶ Acting on these positions, EPA issued regulations that established specific effluent limits on a category basis,²⁴⁷ and industry challenged EPA's authority to promulgate these rules.²⁴⁸

242. See notes 243-278 and accompanying text *infra*.

243. 33 U.S.C. § 1311(a) (Supp. V 1975).

244. See text accompanying notes 222-224 *supra*.

245. See *E.I. duPont de Nemours & Co. v. Train*, 430 U.S. 112, 119-20 (1977).

246. *Id.* at 126-27.

247. See, e.g., 40 C.F.R. §§ 405.10-460.12 (1976).

248. See notes 249-253 and accompanying text *infra*.

In a series of cases in the lower federal courts, industry claimed that the scope of EPA's power was limited to publishing guidelines for the permit issuer, and, further, that only the permit issuer was authorized to establish the precise restrictions for individual pollution sources, using EPA's regulations as flexible guides.²⁴⁹ Industrial groups presented the question²⁵⁰ to seven of the circuits in 1975 and 1976.²⁵¹ Those courts resolved the issue in a variety of ways,²⁵² before the Supreme Court addressed the conflict in 1977.²⁵³

In *CPC International, Inc. v. Train (CPC I)*²⁵⁴ the Eighth Circuit reviewed the statutory language and legislative history of the FWPCA provisions that mandated the creation and implementation of effluent restrictions.²⁵⁵ The court determined that Congress intended those states electing to establish permit-issuing systems in conformity with FWPCA's requirements to retain a measure of control over the specific limitations imposed by the permits.²⁵⁶ Therefore the court concluded that Congress had not vested in EPA the authority over the effluent control program which had been exercised in issuing the regulations.²⁵⁷ The court supported its conclusion with a narrow construction of the language of section 301 which declares unlawful the discharge of any pollutant in violation

249. See note 251 *infra*.

250. The substantive issue of EPA's authority to promulgate national effluent guidelines has been raised as a jurisdictional question on occasion because § 509 of the FWPCA authorizes review of action taken under § 301 by the local circuit court of appeals, but not of § 304 action. See 33 U.S.C. § 1369 (Supp. V 1975); *E.I. duPont de Nemours & Co. v. Train*, 430 U.S. 112, 124-25 (1977). See also note 255 *infra*.

251. *E.I. duPont de Nemours & Co. v. Train*, 541 F.2d 1018 (4th Cir. 1976), *aff'd*, 430 U.S. 112 (1977); *Hooker Chemicals & Plastics Corp. v. Train*, 537 F.2d 620 (2d Cir. 1976); *American Frozen Food Inst. v. Train*, 539 F.2d 107 (D.C. Cir. 1976); *American Petroleum Inst. v. EPA*, 540 F.2d 1023 (10th Cir. 1976); *CPC Int'l, Inc. v. Train*, 515 F.2d 1032 (8th Cir. 1975); *American Meat Inst. v. EPA*, 526 F.2d 442 (7th Cir. 1975); *American Iron & Steel Inst. v. EPA*, 526 F.2d 1027 (3d Cir. 1975); *American Petroleum Inst. v. Train*, 526 F.2d 1343 (10th Cir. 1975).

252. Compare *CPC Int'l, Inc. v. Train*, 515 F.2d 1032 (8th Cir. 1975), with *American Iron & Steel Inst. v. EPA*, 526 F.2d 1027 (3d Cir. 1975). See note 271 and accompanying text *infra*.

253. *E.I. duPont de Nemours & Co. v. Train*, 430 U.S. 112 (1977); see notes 274-278 and accompanying text *infra*.

254. 515 F.2d 1032 (8th Cir. 1975).

255. *Id.* at 1038-42. The provisions under review are contained in §§ 301, 304, and 402 of the FWPCA. 33 U.S.C. §§ 1311, 1314, 1342 (Supp. V 1975). Section 402 establishes a system for issuing permits that prescribes the effluent limitations for individual sources. *Id.* § 1342; see notes 222-224 and accompanying text *supra*. Section 304 authorizes EPA to develop guidelines to be used to determine the degree of effluent restrictions possible. 33 U.S.C. § 1314 (Supp. V 1975). Section 301 declares the discharge of any pollutant unlawful unless it is in compliance with the effluent limits contained in a permit issued pursuant to § 402. *Id.* § 1311.

256. 515 F.2d at 1042.

257. *Id.* at 1039-42. The Eighth Circuit appears to be the only circuit to accept industry's position. See *id.* at 1037; notes 263-278 and accompanying text *infra*.

of the prescribed effluent limits.²⁵⁸ Specifically, the Eighth Circuit rejected the contention that this language augmented EPA's power to issue guidelines for the establishment of effluent limits pursuant to section 304.²⁵⁹ The court's interpretation of section 301 would have impeded enforcement of the FWPCA,²⁶⁰ because its holding seemed to require the establishment of individualized effluent limitation determinations for each point source, and EPA review of every state-issued permit, including determination of whether to veto them or not.²⁶¹ In addition, the court's construction allowed judicial review of each EPA veto.²⁶² Such a system of administering the FWPCA would be cumbersome and result in delays which would impede the congressional objectives underlying the statute.

Although the Third Circuit's analysis in *American Iron & Steel Institute v. EPA*²⁶³ led it to a conclusion different from the Eighth Circuit's, the decision could have been as troublesome for EPA as the one rendered in *CPC I*. The *American Iron* court concluded that EPA was empowered under section 301 of the FWPCA to promulgate effluent limitations, but construed the statutory language narrowly to restrict the type of limitations that EPA could establish.²⁶⁴ Under the Third Circuit's construction of the statute, EPA was authorized only to issue effluent limitation ranges that prescribed the maximum permissible emissions for each category.²⁶⁵ Therefore, the court determined that it was the responsibility of permit issuers rather than EPA to develop and apply precise single-number limitations within the guidelines set by EPA for each point source.²⁶⁶ As a result, the Third Circuit remanded the regulations at issue for reconsideration in light of its holding that EPA was to set the range of permissible limitations, rather than the specific limitation itself.²⁶⁷

258. 33 U.S.C. §1311 (Supp. V 1975); see note 255 *supra*. See also 515 F.2d at 1038-39.

259. 515 F.2d at 1038-39; see note 255 *supra*.

260. The Eighth Circuit's conception of the role that the guidelines to be promulgated pursuant to §304 were to play is unclear at best. The court indicates that uniformity of limitations would be achieved and that guidelines must be complied with. 515 F.2d at 1039. However, what constitutes compliance is not explained. At most, the court states that Congress resolved the policy issues relating to a §301 power to promulgate effluent limitations against the granting of such a power. *Id.* at 1037.

261. See *id.* at 1039-42.

262. *Id.* at 1038-39.

263. 526 F.2d 1027 (3d Cir. 1975).

264. *Id.* at 1036-37, 1042-45.

265. *Id.* at 1042-45; see notes 214-21 and accompanying text *supra*. The Third Circuit's statutory interpretation meant that EPA was not authorized to set effluent limits for individual pollution sources.

266. 526 F.2d at 1045; accord, *American Frozen Food Inst. v. Train*, 539 F.2d 107 (D.C. Cir. 1976).

267. 526 F.2d at 1066.

The Third Circuit recognized that the FWPCA vested in EPA the power to prescribe maximum effluent limitations, but the court's position diminished the value of a centralized administration in at least two ways. First, the court's opinion strongly intimates that maximum limits should allow a higher level of emissions than would be permitted if the regulations were transposed directly into the discharge permits.²⁶⁸ Second, by authorizing permit issuers to establish specific restrictions for each point source, the decision would necessitate EPA review of every permit, with the possibility that any veto would culminate in litigation and accompanying delay. The only difference between the Third Circuit's view and that of the Eighth Circuit is that, under the former, EPA is assured that permit emission limitations cannot exceed the maximum prescribed in the regulations. Thus, both courts resolved against EPA the issues of whether individual determinations had to be made for each point source and how restrictive EPA could be in establishing effluent criteria.

Four circuits have accepted EPA's position that the purpose of the FWPCA was to centralize the power to set effluent limitations in order to ensure effective implementation of pollution-control objectives.²⁶⁹ Two propositions basic to successful administration of the statute arose from these four decisions. First, the courts sustained EPA's power to issue national uniform single-number effluent limitations.²⁷⁰ Second, although they used a variety of routes to arrive at their decisions, all four courts held that the statute required permit issuers to incorporate EPA's effluent limitations into all discharge permits.²⁷¹ The courts reached these results as a consequence of their interpretations of the legislative history and purposes of the FWPCA, and in at least one case, a realization that limiting

268. *See id.* at 1045.

269. *E.I. duPont de Nemours & Co. v. Train*, 541 F.2d 1018 (4th Cir. 1976), *aff'd*, 430 U.S. 112 (1977); *American Petroleum Inst. v. EPA*, 540 F.2d 1023 (10th Cir. 1976); *Hooker Chemicals & Plastics Corp. v. Train*, 537 F.2d 620 (2d Cir. 1976); *American Meat Inst. v. EPA*, 526 F.2d 442 (7th Cir. 1975).

270. *E.I. duPont de Nemours & Co. v. Train*, 541 F.2d 1018, 1029 (4th Cir. 1976), *aff'd*, 430 U.S. 112 (1977); *American Petroleum Inst. v. EPA*, 540 F.2d 1023, 1031 (10th Cir. 1976); *Hooker Chemicals & Plastics Corp. v. Train*, 537 F.2d 620, 630 (2d Cir. 1976); *American Meat Inst. v. EPA*, 526 F.2d 442, 448-52 (7th Cir. 1975). *See notes 265-266 and accompanying text supra.*

271. *E.I. duPont de Nemours & Co. v. Train*, 541 F.2d 1018, 1028 (4th Cir. 1976) *aff'd*, 430 U.S. 112 (1977); *American Petroleum Inst. v. EPA*, 540 F.2d 1023, 1031 (10th Cir. 1976); *Hooker Chemicals & Plastics Corp. v. Train*, 537 F.2d 620, 630 (2d Cir. 1976); *American Meat Inst. v. EPA*, 526 F.2d 442, 452 (7th Cir. 1975). For a slightly different interpretation of these cases, *see E.I. duPont de Nemours & Co. v. Train*, 430 U.S. 112, 125 n.15 (1977).

EPA's authority would substantially undermine its ability to enforce the statute.²⁷²

The litigation concerning EPA's role under the FWPCA had created confusion concerning its authority to promulgate and, more importantly, enforce precise effluent limitations. Since EPA's ability to administer the statute effectively depended on the manageability of EPA's role,²⁷³ no national water pollution control effort could be fully mobilized until the Supreme Court resolved the conflict among the circuits over the interpretation of the FWPCA.

In *E. I. duPont de Nemours & Co. v. Train*,²⁷⁴ the Supreme Court sustained EPA's interpretation of the FWPCA. Initially, the Court outlined the statutory provisions²⁷⁵ and then properly observed that the issue was whether the statute authorized EPA to establish effluent limitations for categories of dischargers, which permit issuers were then required to place in the permits issued for individual sources within the category.²⁷⁶ The Court analyzed the language and legislative history of the statute, and then concluded that EPA possessed the authority it asserted.²⁷⁷ In reaching its conclusions, the Court added this crucial observation:

The petitioner's view of the Act [FWPCA] would place an impossible burden on EPA. It would require EPA to give individual consideration to the circumstances of more than 42,000 dischargers who have applied for permits . . . , and to issue or approve all these permits well in advance of the 1977 deadline in order to give industry time to install the necessary pollution control equipment. We do not believe that Congress would have failed so conspicuously to provide EPA with the authority needed to achieve the statutory goals.²⁷⁸

The issue, therefore, appears to have been resolved in a manner that will facilitate the administration of a water pollution control program. Nevertheless, inferior drafting and incomplete legislative history caused considerable delay in implementing the statute by

272. See, e.g., *E.I. duPont de Nemours & Co. v. Train*, 541 F.2d 1018, 1027 (4th Cir. 1976), *aff'd*, 430 U.S. 112 (1977). The District of Columbia Circuit also recognized the importance of centralized authority in *American Frozen Food Inst. v. Train*, 539 F.2d 107, 129, 132 (D.C. Cir. 1976), but does not seem to have followed the concept through.

273. See text accompanying notes 243-246 & 272 *supra*.

274. 430 U.S. 112 (1977).

275. *Id.* at 116-21.

276. *Id.* at 124. EPA's position that the effluent limitations it promulgated were to be incorporated directly into the permits issued for individual sources did provide for a minor variance procedure. See *id.*

277. *Id.* at 136.

278. *Id.* at 132-33 (citations omitted).

fostering a statutory interpretation issue which could have been easily averted.

2. *Review of Effluent Limitations*

As under the air pollution control legislation,²⁷⁹ judicial review of EPA's attempts to specify effluent limitations has often prevented enforcement of those restrictions. The FWPCA cases illustrate the two types of administrative actions that have been the focus of industry challenge: 1) the selection of a specific technological process or method for a given category to satisfy the statutory requirements; and 2) determinations of the specific effluent quality that can be attained once the proper technology is agreed upon.

In a group of early cases, EPA encountered a series of setbacks with little accompanying success.²⁸⁰ Although EPA has continued to suffer judicial reprimand in more recent decisions, it has been more successful than in the previous cases.²⁸¹ In addition, examination of the cases indicates that some circuits have been more inclined than others to sustain the propriety of EPA's determinations.²⁸² The emergence of this judicial pattern legitimately causes one to ask whether the difficulties encountered in transforming the FWPCA standards into specific effluent limitations for individual dischargers stem from the statute, EPA's performance, individual judges' perceptions of the proper scope of review, socioeconomic considerations that may vary among circuits, or the societal impact, as perceived by the courts, of the imposition of controls on a particular industry.

a) *Judicial Resistance*

The Eighth Circuit's disposition of the jurisdictional issue in *CPC I*,²⁸³ the first major case brought under the FWPCA, left that court with only the EPA promulgated new source standards²⁸⁴ to review on the merits.²⁸⁵ EPA had fixed effluent standards for three pollutants discharged by plants in the corn wet milling industry.²⁸⁶

279. See text accompanying notes 54-78 *supra*.

280. See text accompanying notes 283-293 & 307-327 *infra*.

281. See text accompanying notes 328-373 *infra*.

282. See text accompanying notes 328-337 & 339-351 *infra*.

283. For a prior discussion of *CPC I*, see notes 254-262 and accompanying text *supra*. See also note 250 *supra*.

284. See note 220 and accompanying text *supra*.

285. 515 F.2d at 1043.

286. *Id.* at 1034. EPA regulations describe the activity in the corn wet milling industry as a "process in which shelled corn is steeped in a dilute solution of sulfurous acid and then processed by wet means into such products as animal feed, regular and modified starches, corn oil, corn syrup, and dextrose." 40 C.F.R. § 406.10 (1976).

Industry claimed that the technology required to achieve the EPA standards did not coincide with the technology articulated under the statute for new sources.²⁸⁷

The court explained that EPA had arrived at the new source standards by supplementing the technological processes available to implement the 1977 limitations, and by calculating the improvement in effluent quality that would result.²⁸⁸ Therefore, the court concluded that the validity of the new source standards depended upon the validity of four premises: 1) that the technological methods selected for the 1977 effluent standards were within that contemplated by the statute; 2) that these processes would perform as predicted; 3) that the supplemental technological process was within that contemplated by the statute for new sources; and 4) that the added method would perform as predicted.²⁸⁹ Thus, the two types of challenges to the FWPCA suggested earlier — to the consistency of the chosen technology with the statute and to the achievable performance level of a given technology — were ripe in *CPC I*.

Industry conceded that the 1977 technological methods were within the parameters of the statute, but challenged the performance ability of that technology.²⁹⁰ Although the Eighth Circuit rejected industry's challenge,²⁹¹ it refused to endorse EPA's position that additional technology could be applied to the corn wet milling industry.²⁹² The court noted EPA's conclusory, unsupported statements in the record to the effect that the supplemental technological process could be used in the industry as evidence that EPA had failed to demonstrate that the new source standards had been reasonably set.²⁹³

The court's conclusion in *CPC I* that the record EPA presented did not offer substantial support for the new source standards was justified; but new source standards will be for naught if they do not motivate industry to invest capital in the development of technologies capable of providing a better effluent quality. The Eighth Circuit did not consider this purpose, much less balance it against

287. 515 F.2d at 1045; see text accompanying note 220 *supra*.

288. 515 F.2d at 1045.

289. *Id.* at 1046.

290. *Id.*

291. *Id.* It must be recalled that the court's approval of EPA's action was in the context of a step-by-step analysis of the validity of the *new source* regulations, not the 1977 regulations. For the different standards applicable to each effluent limit, see text accompanying notes 216 & 220 *supra*.

292. 515 F.2d at 1047.

293. *Id.* at 1048-50. In addition, the court declared that EPA had not sufficiently considered the costs to individual sources of implementing the new source standards in developing these standards. *Id.* at 1050-51.

the incompleteness of the administrative record. It is difficult to understand how EPA is to translate the statute's technology-based standards into precise and stringent effluent limits without such an approach.

In *American Meat Institute v. EPA*,²⁹⁴ the petitioners challenged several of EPA's 1977 and 1983 standards for the meat packing industry.²⁹⁵ After deciding that EPA had the power to issue nationally applicable effluent criteria,²⁹⁶ the Seventh Circuit examined EPA's choice of technologies and the effluent limits EPA derived from them.²⁹⁷ Although industry seemed to concede that the 1977 technologies were consistent with FWPCA requirements,²⁹⁸ the petitioners asserted that those processes would be unable to achieve the effluent quality that EPA prescribed.²⁹⁹ The court considered industry's challenges based upon the effect of seasonal changes on the performance of the technological processes involved and upon industry's claim that the record did not demonstrate that the identified technology could reduce the effluent to the required level.³⁰⁰ After a detailed review of the data, the court sustained all but one of EPA's effluent limitations.³⁰¹

In addition, industry contended that the 1983 technology was not within the statutory framework.³⁰² The court reviewed the record prepared by EPA and concluded that a sufficient number of antipollution devices had been suggested by EPA to refute the industry's complaint that the required effluent criteria were unattainable.³⁰³ Thus, the court sustained both EPA's choice of technologies and the effluent limits derived. Curiously, despite industry's position "that EPA's standards . . . are unattainable by the 1983 technology designated by EPA . . . ,"³⁰⁴ the court did not discuss whether the technologies selected and upheld could in fact achieve the effluent performance mandated.³⁰⁵

294. 526 F.2d 442 (7th Cir. 1975).

295. *Id.* at 444. The standards under review limited the quantities of various pollutants that were discharged by meat packing plants during the production process. *Id.*

296. *Id.* at 448-52; see notes 269-271 and accompanying text *supra*.

297. 526 F.2d at 453-66.

298. *Id.* at 454.

299. *Id.* at 454-62.

300. *Id.* at 454-56.

301. *Id.* at 466.

302. *Id.* at 463-64.

303. *Id.* at 464.

304. *Id.* at 463.

305. See *id.* at 462-64. The Seventh Circuit appeared to have been satisfied that EPA had suggested several sources of limitations and merely assumed that they would perform as required. *Id.* at 464. In contrast, the court did hold that EPA had failed to demonstrate the feasibility of the proposed technology for the implementation of the 1983 ammonia standards. *Id.* at 464-66.

It is difficult to determine from the opinions alone in *CPC I* and *American Meat* whether the two circuits assumed different roles as reviewers of EPA's regulations.³⁰⁶ The Eighth Circuit in *CPC I* quoted conclusory statements of EPA that were probably insufficient to withstand attack, while the Seventh Circuit relied upon more specific data. Regardless of the specificity of the record that EPA presents to the courts, however, the results still may be left to judicial discretion, because the complexity of the esoteric technological data that must be reviewed allows courts to construe the facts in accordance with individual judges' preconceptions as to the desired results. The present statutory scheme, therefore, can be implemented only through the sufferance of the courts.

Examination of other litigation tends to strengthen this hypothesis. On March 10, 1976, a panel of the Fourth Circuit disposed of a number of petitions for review of EPA discharge regulations. In *E. I. duPont de Nemours & Co. v. Train*,³⁰⁷ the court considered challenges brought by several companies producing inorganic chemicals, and in *Tanners' Council of America, Inc. v. Train*,³⁰⁸ review of limitations established for the leather tanning and finishing industry was sought. In both cases, the court was not convinced that EPA had proven that the technologies it had selected were within the statutory meaning, and vacated and remanded nearly all of the challenged regulations.³⁰⁹

In *Tanners' Council*, EPA had determined that the existing waste treatment technology throughout the leather industry was thoroughly inadequate and had decided to adopt technology from the meat packing industry.³¹⁰ The court upheld EPA's authority to transfer technologies, but set aside the 1977 effluent limitations on the ground that the record offered no evidence to support the effluent limitations that had been transferred from the meat packing industry to the leather tanners.³¹¹ Since EPA had derived new source standards from the 1977 limitations, the court vacated them as well.³¹² Although the court did not remand the 1983 effluent

306. It can be questioned whether it is coincidental that the Eighth Circuit in *CPC I* denied EPA the power to set administrable effluent limits in addition to remanding the new source standards, while the Seventh Circuit in *American Meat* recognized the grant of the general power to establish effluent limits as well as sustained most of the specific regulations that were challenged. Compare 515 F.2d at 1045-46, with 526 F.2d at 464.

307. 541 F.2d 1018 (4th Cir. 1976), *aff'd*, 430 U.S. 112 (1977). For a prior discussion of the Supreme Court's treatment of this case, see text accompanying notes 274-278 *supra*.

308. 540 F.2d 1188 (4th Cir. 1976).

309. 541 F.2d at 1039; 540 F.2d at 1196.

310. 540 F.2d at 1192.

311. *Id.* at 1192-94.

312. *Id.* at 1194.

standards, they were sustained only after lengthy comments indicating that EPA had not, in fact, adequately demonstrated the appropriateness of the selected technology and that EPA would be required to do so in the future.³¹³ The court further suggested that it sustained the regulations only because there was no substantial ground not to do so, since further review of those regulations would be available as their effective date approached.³¹⁴

If the *Tanners' Council* decision was a setback for EPA, *duPont* appears to have been a disaster. The circuit court in *duPont* reviewed eleven specific types of pollutants, vacating and remanding nearly all the regulations.³¹⁵ Although varying reasons formed the foundation for the court's actions in *duPont*, the overall tone of the court's opinion revealed great annoyance, perhaps anger, with EPA's regulatory processes. In several instances the court found insufficient support for the technologies selected by EPA.³¹⁶ Additional regulations were set aside because EPA failed to justify its derivation of effluent limits.³¹⁷ The court remanded other regulations, stating that the record was too confused to provide a basis for judicial review.³¹⁸ Viewed more broadly, however, the tone and tenor of the opinion suggest that the court simply was exasperated with what it perceived as EPA's ad hoc, slipshod and insensitive attitude and procedures.³¹⁹

As was true with *CPC I*³²⁰ and *American Meat*,³²¹ one cannot be sure that the *Tanners' Council* and *duPont* decisions reveal a particular judicial attitude toward EPA's attempts to enforce an important and administratively burdensome national policy. Nevertheless, however seriously EPA may have neglected to prepare and present adequate support for its regulations, the Fourth Circuit's language suggests neither sympathy nor understanding for the difficult task that the FWPCA imposed upon EPA.

313. *Id.* at 1196.

314. *Id.* at 1195-96.

315. 541 F.2d at 1039.

316. *Id.* at 1034-35.

317. *Id.* at 1034, 1036-37.

318. *Id.* at 1033-34, 1036-38. It should be noted that with regard to some of the regulations, even EPA conceded that a remand was necessary. *Id.* at 1035.

319. The court's attitude is revealed in its following remarks:

The strained effort in the EPA brief to justify agency action leaves us in a state of extreme confusion. We have examined every record reference made by EPA. They are cryptic, mystic, and enigmatic. If there is to be any worthwhile judicial review of agency action, the action must be presented and supported in a manner capable of judicial understanding.

Id. at 1037.

320. See notes 283-293 and accompanying text *supra*.

321. See notes 294-305 and accompanying text *supra*.

The same Fourth Circuit panel that decided *Tanners' Council and duPont* displayed a similar attitude toward EPA's regulations of heat discharges from steam electric generating plants in *Appalachian Power v. Train*.³²² The steam electric generating industry produces excess heat which must be eliminated.³²³ Since the thermal pollution accompanying discharges of heat into waters that contain aquatic life may destroy the ecological balance there, EPA's regulations sanctioned only the use of methods of heat release that did not damage the waters.³²⁴ Industry challenged these regulations on several grounds.

The court reaffirmed EPA's power to establish nationally uniform standards, but simultaneously emasculated that power in holding EPA's requirements for obtaining a variance from compliance with the 1977 standards to be excessively rigid, vacating the variance clause, and ordering EPA to devise a more flexible one.³²⁵ The effect of this decision may be to frustrate the statutory purpose of centralized effluent control because the less stringent a variance provision is, the greater is the discretion vested in the permit issuer.³²⁶

Numerous portions of the *Appalachian Power* opinion illustrate the court's apparent displeasure with EPA's performance.³²⁷ Once again the language, tone, and disposition of the case suggest that the Fourth Circuit paid little deference to EPA's decisions. Although the court's finding that the administrative record was woefully inadequate may have been justified, an analysis of these early cases readily leads to the conclusion that, when reviewing challenged EPA

322. 545 F.2d 1351 (4th Cir.), *modified*, 545 F.2d 1380 (4th Cir. 1976).

323. 545 F.2d at 1355.

324. *Id.* at 1357.

325. *Id.* at 1359.

326. Industry's challenges to EPA's specific effluent levels were also generally upheld. One challenged requirement was the use of thermal backfit devices, which prevent large quantities of heat from escaping into the waters. *Id.* at 1361. The court invalidated EPA's thermal backfit requirements on the ground that the record failed to show any relationship between the cost of heat discharge reduction to the extent required and the benefit to the aquatic environment and to demonstrate sufficiently that this requirement was economically achievable. *Id.* at 1363-66.

The court also reviewed EPA's restriction on the use of a "cooling lake", defined as a "manmade water impoundment which impedes the flow of a navigable stream and which is used to remove waste heat from . . . water prior to recirculating the water . . .," 40 C.F.R. § 423.11(n) (1976), to achieve effluent limits through the utilization of the best available technology. 545 F.2d at 1367-71. In overturning EPA's restriction on the use of cooling lakes, the court noted that no consideration of the effect of that technology on water supplies in several arid sections of the country appeared in the record. *Id.* at 1369-71. Some of the court's language on this point implies impatience with EPA and is reminiscent of the Fourth Circuit's annoyance in *duPont*. *Id.* at 1370-71; see note 319 *supra*.

327. See, e.g., 545 F.2d at 1371-77.

regulations, the courts tended to overlook the congressional objective of improving the quality of water.

b) *The Pro-EPA Trend*

EPA has experienced more favorable judicial treatment in four recent decisions concerning its prescribed effluent limitations. In *American Paper Institute v. Train*³²⁸ several manufacturers of paper products challenged EPA's regulations on a number of familiar grounds. The District of Columbia Circuit dismissed the industry's contentions that EPA had not properly considered the cost of implementing the regulations.³²⁹ The court explained that the record presented by EPA contained a detailed analysis of the costs involved and that EPA's conclusion that industry could readily bear those costs was reasonable.³³⁰ The contrast between this court's discussion of the cost issue and the Fourth Circuit's discussion of the same issue in *Appalachian Power* is striking.³³¹ The *American Paper* court did not stress that EPA had failed to assess the expected environmental benefit in relation to its cost; indeed, it scarcely alluded to this point.³³² The dissimilarities in the two industries may explain and justify the results reached by the courts;³³³ however, the possible existence of different judicial premises may provide a sounder explanation for the wholly different emphases in the courts' opinions.

The same deferential attitude pervaded the *American Paper* court's consideration of the validity of specific effluent limitations.³³⁴ The District of Columbia Circuit upheld EPA's 1977 effluent limitation guidelines for the industry's pollutants after only a brief review of the challenges.³³⁵ In addition, the court determined that

328. 543 F.2d 328 (D.C. Cir. 1976).

329. *Id.* at 339.

330. *Id.*

331. 545 F.2d at 1363-65; see note 326 *supra*.

332. See 543 F.2d at 338-39. In contrast, the Fourth Circuit in *Appalachian Power* noted:

Industry challenges EPA's reliance upon those [cost] figures on the ground that they do not indicate whether the regulations will result in reasonable further progress toward the national goal. We agree. EPA's study merely establishes . . . cost-effectiveness It in no way indicates whether, in light of the associated costs, application of such systems will result in reasonable effluent reduction levels.

545 F.2d at 1363.

333. The process of paper, pulp, and paperboard production, by which chemical pollutants are released into waterways, was involved in *American Paper*. 543 F.2d at 332. However, in *Appalachian Power* the concern was the operation of steam electric generating plants that caused the discharge of heat into the waters. 545 F.2d at 1355.

334. 543 F.2d at 345.

335. *Id.* at 340-46.

there was a sound basis in the record presented by EPA to support the 1983 effluent limitation standards.³³⁶ In disposing of these issues, the court focused on the fulfillment of the purpose of the FWPCA — “the *complete* elimination of pollution discharges to the Nation’s waters by 1985.”³³⁷ Thus, a court, emphasizing the broad purpose of the statute rather than scrutinizing the administrative record for inconsistencies and ambiguities, probably will engage in a type of judicial review that will be more deferential to EPA’s actions than previously examined FWPCA cases have been.³³⁸

Three cases subsequent to *American Paper* have apparently embraced its type of review. In *American Petroleum Institute v. Train*³³⁹ the Tenth Circuit reviewed EPA regulations challenged by the petroleum refining industry. The court, in contrast to the Fourth Circuit cases, rejected industry’s general attack on EPA’s 1977 variance clause.³⁴⁰ The Tenth Circuit concluded that it would be inappropriate to reject the variance provision on its face and that the courts should await a specific complaint about EPA’s application of the clause.³⁴¹ Such a judicial response not only preserves EPA’s independent authority, but also facilitates implementation of the FWPCA. Rather than being compelled to draft a variance provision perhaps several times, in response to judicial reviews of the clause on its face, and then responding to inevitable challenges over specific applications of the approved provision, EPA’s variance regulations will be subject to judicial review only at the latter stage.

The petroleum institute also challenged EPA’s limitations for 1977, 1983, and new sources. The court endorsed EPA’s requirement for 1977 in-plant modifications, both in principle, as had all other circuits,³⁴² and specifically as applied to the petitioners.³⁴³ Moreover, even where the court perceived an error in EPA’s effluent limitations, it avoided a remand. For example, industry asserted that EPA’s requirements were gross, as opposed to net, limitations.³⁴⁴ A

336. *Id.* at 346-54.

337. *Id.* at 346 (emphasis in original).

338. See notes 283-327 and accompanying text *supra*.

339. 540 F.2d 1023 (10th Cir. 1976).

340. *Id.* at 1032-33. Judge Breitenstein, the author of the *American Petroleum* opinion, had dissented from the Fourth Circuit’s rejection of the variance clause at issue in *Appalachian Power* while sitting on the Fourth Circuit by designation. 545 F.2d at 1379-80 (Breitenstein, J., dissenting); see notes 307-327 and accompanying text *supra*.

341. 540 F.2d at 1033.

342. See *id.* at 1033-34.

343. *Id.*

344. *Id.* at 1034-35. The court defined the scope of these types of limitations as follows: “Net limitations apply only to the excess of pollutants discharged over the pollutants, if any, in the intake water. Gross limitations apply to the total amount of pollutants discharged regardless of pollutants in the intake water.” *Id.* at 1034.

gross limitation meant that a particular point source would have to cleanse water taken in, not merely refrain from additional pollution.³⁴⁵ The court agreed with industry's position that a permit holder could not be charged with the responsibility to clean intake water if the source's facilities for processing waste water were not designed to do both jobs.³⁴⁶ The court nevertheless sustained EPA's use of gross limitations,³⁴⁷ ruling that a particular permit holder could obtain appropriate relief by seeking a permit adjustment in a specific proceeding for that purpose.³⁴⁸

Although the Tenth Circuit rejected some of EPA's positions, it recognized the extraordinary administrative difficulties encountered by EPA in attempting to implement the FWPCA.³⁴⁹ Such an approach seems substantively different from the attitude displayed in earlier decisions³⁵⁰ and is closer to the *American Paper* tone.³⁵¹

In *CPC International, Inc. v. Train (CPC II)*,³⁵² the Eighth Circuit again reviewed standards for new plants in the corn wet milling industry on petitions for review of EPA's action on remand from *CPC I*.³⁵³ On remand, EPA was directed to establish new standards or furnish support for those that had been remanded.³⁵⁴ EPA chose to resubmit the same standards after administrative proceedings were held, and industry then challenged the standards once again.³⁵⁵ At the outset, the court cautiously approved EPA's general proceedings upon remand.³⁵⁶ It therefore refused to vacate the regulations in their entirety, as it had in *CPC I*, and then proceeded to conduct a more detailed and specific review of particular standards for new plants and of industry's claim that EPA had given improper consideration to the costs of compliance.³⁵⁷

The Eighth Circuit sustained one of the two challenged standards.³⁵⁸ In *CPC I* the court had noted that EPA's performance

345. *See id.* at 1034.

346. *Id.* at 1034-35.

347. *Id.* at 1035.

348. *Id.*

349. *Id.* at 1038. Despite the court's awareness of the administrative obstacles EPA had encountered under the FWPCA, it was compelled to set aside the 1983 regulations because the technology on which they were based was not shown to be available. *Id.*

350. *See* notes 283-327 and accompanying text *supra*.

351. *See* notes 328-332 and accompanying text *supra*.

352. 540 F.2d 1329 (8th Cir. 1976).

353. *Id.* at 1331; *see* 515 F.2d at 1050-51. *See also* text accompanying notes 283-293 *supra*.

354. 515 F.2d at 1050.

355. 540 F.2d at 1332.

356. *Id.*

357. *Id.* at 1334-44.

358. *Id.* at 1338. The court upheld EPA's new source standard for BOD₅, a pollutant measurement of a five-day biochemical oxygen demand, on the grounds that EPA had not acted arbitrarily or capriciously in setting the standard. *Id.* at 1334 n.5, 1338. However, the court concluded that the new source standard for TSS, a pollutant

projections for a particular plant were unsubstantiated.³⁵⁹ In response, apparently during the interval between *CPC I* and the administrative proceedings on remand, EPA assembled considerable data regarding the plant; therefore, EPA's record in *CPC II* provided detailed information of the plant's actual performance. The court's analysis of that information produced the conclusion that EPA had demonstrated that its standards could be met.³⁶⁰ A similar examination of the other challenged EPA limitation³⁶¹ however, led the court to a contrary conclusion. According to the court, the evidence showed that the pollutant readings taken at several corn wet milling plants did not support the standard EPA had set.³⁶² Moreover, it was unpersuaded by evidence of pollutant readings from other industries which EPA introduced to justify its action with respect to the corn wet milling industry.³⁶³ Rather than remand, however, the court stated that time pressures compelled it to approve a less stringent limit.³⁶⁴ Thus, even though the court could not uphold EPA's regulations, its action eliminated a potentially endless series of administrative actions and judicial remands.

Finally, the court sustained EPA's analysis of the costs of implementing the standards.³⁶⁵ The court initially stated that a cost-benefit analysis did not have to be undertaken but that a determination affirming industry's ability to reasonably bear the costs would be sufficient.³⁶⁶ The Eighth Circuit then upheld EPA's projection of the additional costs,³⁶⁷ rejecting as unsupported and conclusory the figures that industry offered. The court believed that EPA's consideration of two other cost issues was inadequate but again did not order a remand. Rather, the court said: "Based on a careful review of a generally unsatisfactory record, we reluctantly conclude that the EPA has not abused its discretion. . . ."³⁶⁸

Despite the court's dissatisfaction with some of EPA's actions on remand, it upheld EPA's position on all but one issue.³⁶⁹ There is a

measurement of the total amount of inorganic and organic solids suspended in wastewaters, could not pass the arbitrary and capricious level of review. *Id.* at 1338 n.9, 1340.

359. 515 F.2d at 1049.

360. 540 F.2d at 1335.

361. The other new source standard that was under review was TSS. *Id.* at 1338-40; see note 358 *supra*.

362. 540 F.2d at 1338-39.

363. *Id.* at 1339.

364. *Id.* at 1340.

365. *Id.* at 1344.

366. *Id.* at 1341-42.

367. *Id.* at 1343.

368. *Id.* at 1344.

369. It is especially noteworthy that, with respect to the new source standards for TSS, the court actively assisted EPA to avoid ordinarily applicable remand proceedings. See notes 361-364 and accompanying text *supra*.

substantial likelihood that the record EPA presented to the court in *CPC II* was superior to the one offered in *CPC I*. Nevertheless, the court's attitude toward EPA, its responsibilities, and the congressional objective underlying the FWPCA seems more deferential than the tone of the opinion in *CPC I*.

The Eighth Circuit displayed a similar attitude in *National Renderers' Association v. EPA*.³⁷⁰ In that case, the rendering industry challenged EPA's new source regulations on the ground that the cost of the technology that would be required to implement the standards was unreasonable, and hence the standards were inconsistent with the statute.³⁷¹ Although the court agreed with the industry that the record did not verify the reasonableness of the additional costs and remanded the matter to EPA for further proceedings, it attempted to facilitate EPA's task on remand by explaining the specific errors that EPA had made in its methods of calculation.³⁷² The court's language does not contain the animosity that seems to have pervaded the earlier decisions.³⁷³

The cases reflecting this more favorable judicial attitude toward EPA³⁷⁴ were based on a premise of EPA's role that differed markedly from the one that other courts had accepted³⁷⁵ only a few weeks earlier.³⁷⁶ Unexpectedly, the courts suddenly found EPA's actions to be thorough and reasonable³⁷⁷ rather than arbitrary and capricious.³⁷⁸ Regardless of the propriety of either approach, this transformation highlights that dissimilar judicial premises probably result in different levels of judicial review.³⁷⁹

c) Summary

A number of points emerge from this review of the decisions concerning EPA's performance in promulgating water effluent controls. One explanation for the pattern of decisions would posit that there has been a significant improvement in EPA's administration of the FWPCA.³⁸⁰ Exploration of this theory would, however,

370. 541 F.2d 1281 (8th Cir. 1976).

371. *Id.* at 1286. The court described the rendering industrial process as the conversion of "inedible animal raw materials into salable by-products for commercial use." *Id.* at 1284.

372. *Id.* at 1286-89.

373. See text accompanying notes 283-327 *supra*.

374. See notes 328-373 and accompanying text *supra*.

375. See notes 283-327 and accompanying text *supra*.

376. For a list of the decision dates, see note 385 *infra*.

377. See notes 330, 336, 360 & 366 and accompanying text *supra*.

378. See notes 293, 311, 316-318 & 327 and accompanying text *supra*.

379. See text following note 333 *supra*.

380. See text accompanying notes 328-373 *supra*.

entail a thorough examination of the administrative records and is beyond the scope of this article. It may also be possible that the courts became more reluctant to order wholesale remands as statutory deadlines began to approach and pass.³⁸¹

The cases also suggest that the results may depend upon which circuit is reviewing EPA's actions. It will be noted that the Fourth Circuit has been particularly hostile to EPA,³⁸² while the Tenth and District of Columbia Circuits have been more deferential,³⁸³ and the Seventh and Eighth Circuits have stood somewhere in between.³⁸⁴ However, this hypothesis cannot be properly tested at this point, because the Fourth Circuit did not render a decision after the Eighth, Tenth, and District of Columbia Circuit cases were decided.³⁸⁵ The time gap, however, was minimal, and hence this theory may be credible.

IV. CONCLUSION

Whatever the explanation for the courts' differing decisions may be, it is by no means clear that a technology-based statute is significantly easier to translate successfully into direct control of pollutant discharges than is a health-based statute. Although the health-based statute forces courts squarely to confront the issue of whether to uphold EPA action that would force the termination of some enterprises, the technology-based statute requires the same decision disguised as questions of whether a given technology or effluent standard is economically feasible. The FWPCA cases reinforce the conclusion that, the congressional objective notwithstanding, the country simply may not be prepared to make the necessary sacrifices to achieve an acceptable environment.³⁸⁶ If that is the explanation for judicial reluctance to support EPA under both the Clean Air Act and the FWPCA, the particular statutory basis — health or technology — may not be important.

On the other hand, if Congress is seriously determined to achieve an effective pollution control system, there are several ways in which it could facilitate EPA's attempt to realize that goal. First,

381. See, e.g., *National Renderers' Ass'n. v. EPA*, 541 F.2d 1281, 1292 (8th Cir. 1976); *CPC Int'l, Inc. v. EPA*, 540 F.2d 1329, 1340 (8th Cir. 1976).

382. See text accompanying notes 307-327 *supra*.

383. See text accompanying notes 328-351 *supra*.

384. See text accompanying notes 283-305, 352-373 *supra*.

385. The last Fourth Circuit decision was entered on July 16, 1976. *Appalachian Power v. Train*, 545 F.2d 1351 (4th Cir. 1976). Cf. *National Renderers' Ass'n. v. EPA*, 541 F.2d 1281 (8th Cir. 1976) (August 30); *CPC Int'l, Inc. v. Train*, 540 F.2d 1329 (8th Cir. 1976) (August 18); *American Petroleum Inst. v. EPA*, 540 F.2d 1023 (10th Cir. 1976) (August 11); *American Paper Inst. v. Train*, 543 F.2d 328 (D.C. Cir. 1976) (August 6).

386. See text accompanying notes 94-95 *supra*. See also note 183 *supra*.

improved drafting would reduce the likelihood of extensive litigation.³⁸⁷ A centralization of the power to enforce the Clean Air Act, such as was finally achieved through litigation under the FWPCA,³⁸⁸ would promote control of air pollution.³⁸⁹ Further, a narrower scope of judicial review of EPA action might help to insulate EPA's regulations from repeated attack. Courts, however, often find ways to do as they please even under narrow standards of review,³⁹⁰ and one may legitimately hesitate before granting the EPA too loose a rein.³⁹¹ In addition, tying federal programs, like the funding of highways, to compliance with related pollution control measures such as transportation control plans, would alleviate some of EPA's enforcement problems and would insulate state and local officials from local political pressure to impede compliance. Finally, a larger administrative staff probably would enable EPA to produce more detailed and satisfactory administrative records for the courts to examine.

387. See text following note 278 *supra*.

388. See, e.g., *E.I. duPont deNemours & Co. v. Train*, 430 U.S. 112 (1977).

389. It does not appear that Congress has followed this course in the 1977 Amendments.

390. See, e.g., *Bracey v. Rundle*, 494 F.2d 566 (3d Cir. 1974), *rev'g* 356 F. Supp. 673 (E.D. Pa. 1973) (§ 1983 of the Civil Rights Act, 42 U.S.C. § 1983 (1970)).

391. Section 305 of the 1977 Amendments alters the scope of judicial review in form only. See Pub. L. No. 95-95, § 305, 91 Stat. 685 (1977) (to be codified in 42 U.S.C. § 7607). The Conference Report statement that Congress intends the courts to continue the "thorough, comprehensive review which has characterized judicial proceedings under the Clean Air Act thus far," H.R. REP. No. 564, 95th Cong., 1st Sess. 178 (1977), evidences that this change is cosmetic only.