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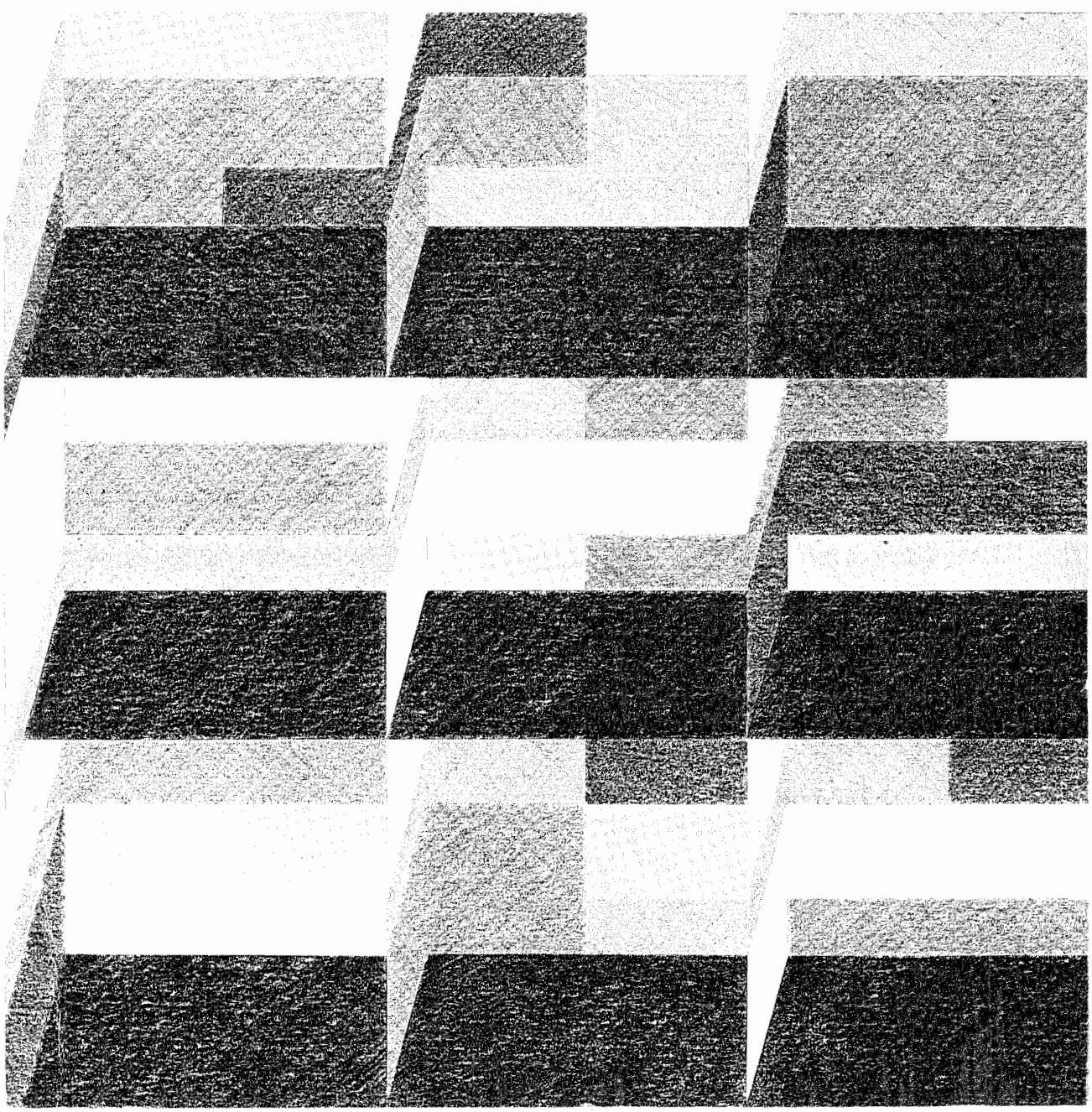

EROSION OF THE CLEAN AIR ACT OF 1970: A STUDY IN THE FAILURE OF GOVERNMENT REGULATION AND PLANNING

Richard Walker & Michael Storper***

I. INTRODUCTION 190
II. THE CLEAN AIR ACT AND AIR QUALITY: GOALS AND FAILURES 192
III. EROSION OF THE CLEAN AIR ACT AS LAW 197
A. Establishing a Foundation For Air Quality Control: Setting Standards and Preparing State Plans 198
1. EPA Standards 198
a. Criteria Pollutants 198
b. Hazardous Substances 200
2. Balancing—An Erosion of the Act 202
3. State Plans—Failure and Fragmentation 203
B. Controlling Industrial Emissions: Non-Compliance 206
1. The Variance Loophole 206
2. Coal Conversion, Tall Stacks and Electric Utilities—Special Dispensation 209
3. Steel and Smelters—More Dispensations 211
4. Continued Non-Compliance—Retreating Deadlines 213
C. Controlling Motor Vehicle Emissions 214
1. New Automobile Emissions—Ever-Receding Deadlines 214
2. Fuel Additives 218
D. Transportation and Urban Growth: Early Planning Strategies 219
1. Land Use and Transportation Controls—An Introduction 222
2. Transportation Controls 222
3. Indirect Source Controls 226
E. Accommodating Industrial Growth: Current Approaches 229
1. New Source Performance Standards 229
2. Non-Degradation 234
3. Non-Attainment and Air Trade-Offs 235
F. Summation: Stages of Erosion 239

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IV. THE ROLE OF GOVERNMENT IN THE FAILURE OF REGULATION ... 240
V. POLITICAL-ECONOMIC BARRIERS TO IMPLEMENTING THE CLEAN AIR ACT ... 243
A. Industry Resistance ... 244
B. Threat of Dislocation of Particular Industries ... 245
C. Regional Dislocation and Competition for Investment ... 245
D. Fixed Character of Urban and Regional Patterns ... 246
E. Threat of Halting New Growth ... 247
F. The Energy Crisis ... 249
G. Declining Maintenance of Existing Pollution Sources ... 249
H. Recession ... 250
I. Unanticipated Circumstances and Technological Change ... 251
VI. CONCLUSION: WHY GOVERNMENT CANNOT REGULATE AND PLAN FOR CLEAN AIR ... 252
POSTSCRIPT ... 255

I. INTRODUCTION

The Clean Air Act Amendments of 1970[1] (Clean Air Act), passed by Congress at the apex of the environmental movement, is undoubtedly the seminal piece of legislation in air pollution control. Its success or failure has obvious consequences for the quality of the air we breathe. Moreover, since the 1970 Act is a model of well-written environmental legislation, any subsequent failure to achieve its explicit goals must necessarily cast doubt on the Nation's whole strategy of controlling pollution by means of government regulation.[2]

The fate of the Clean Air Act is a subject much discussed but little understood. Although it is generally conceded that the Act, to date, has failed to achieve its goals,[3] even the most critical treatments of the Act's checkered fate have been inadequate. By simply attributing the Act's lack of success to either a failure of logic on

[1] 42 U.S.C. §§ 1857-1858a (1970) (present version at 42 U.S.C. §§ 7401 *et seq.*). The Clean Air Act Amendments of 1977, Pub. L. No. 95-95, 91 Stat. 685 (1977) completely revised the Act. The Act was transferred and reclassified to 42 U.S.C. §§ 7401 *et seq.* However, since this article is primarily concerned with the version of the statute in effect from 1970-77, the citation to the 1970 edition of U.S.C. will be used. The 1977 Amendments will be referred to as the "Amendments" to distinguish the present version from the 1970 version.

[2] Regulation by independent agency is a long-standing method dealing with social problems in America. *See generally* M. BERNSTEIN, REGULATION OF BUSINESS BY INDEPENDENT COMMISSION (1955). This tradition — the wisdom of which is questioned in this article—was continued almost blindly during the peak years of the environmental movement. It is embodied not only in the Clean Air Act, 42 U.S.C. §§ 1857-1858a (1970), but in other pollution control measures such as the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. §§ 1288 *et seq.* (1976) and the Toxic Substances Control Act of 1976, 15 U.S.C. §§ 2601 *et seq.* (1976), as well.

[3] *See, e.g.*, text at notes 44-46, *infra.*

the part of those who designed the program, or a failure of nerve on the part of those in government entrusted with carrying out the "popular will" embodied in the legislation,[4] critics have ignored the fundamental question surrounding the Act's future: whether government regulation and planning can bring about as profound a change in the economy and social practice as the rapid improvement of air quality, or, indeed, whether clean air can be realized at all under American capitalism as it is presently constituted.

This article presents a negative answer to the preceding question. Such a conclusion is reached by first outlining the essential provisions and goals of the Clean Air Act and showing that, despite the enactment of the statute in 1970, air quality has not improved significantly and is nowhere near the goals established in the Act. The legal erosion of the Act is explained in the following section by documenting the non-enforcement, concessions and revisions by the Environmental Protection Agency (EPA), the President and the state and national legislatures. Next, the article discusses the workings of the American government as it presently exists, and adopts the view that the government is not a self-constitutive, neutral body which is independent of the social formation that it is intended to govern. Instead, the government is subject to many of the internal contradictions of which society itself is comprised, and which can be observed through an examination of the structure of government and the external pressures applied to government. The next section examines some of the societal forces outside the control of any single agent which form political and economic barriers to the implementation of the Act, despite the original intentions of the agencies or legislatures. The article concludes that, although anti-pollution efforts have had some effect, government in its present form lacks the power necessary to overcome the inherent barriers which are impeding the attainment of clean air.[5]

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[4] *E.g.*, Kramer, *Economics, Technology, and the Clean Air Amendments of 1970: The First Six Years*, 6 ECOLOGY L.Q. 161 (1976). Kramer summarizes his own article as follows:

> This Article examines a fundamental defect in the implementation of the Clean Air Act: namely, that it has taken longer to establish the meaning of its programs than the time allotted for their accomplishment.
>
> The responsibility for this defect is shared by Congress, EPA, the state and the federal courts.

Id. at 163.

[5] Since the focus of this article is a case study of the Clean Air Act as legal policy, rather than an examination of the technical questions surrounding air quality and its health effects or the general question of state planning, most attention centers on the analysis of the legal erosion of the Act. Other issues are dealt with less extensively since, in each such instance,

II. The Clean Air Act and Air Quality: Goals and Failures

Federal air pollution control legislation in the United States is relatively new.[6] In 1955, Congress enacted the first Air Pollution Control Act which focused entirely on providing research and technical assistance for air pollution control.[7] Subsequent legislation included the 1963 Clean Air Act,[8] a weak initial effort to regulate air pollution, the 1965 Motor Vehicle Air Pollution Control Act[9] and the Air Quality Act of 1967.[10] However, popular sentiment against air pollution and frustration with the near complete futility of these regulatory efforts[11] culminated in a demand for the total revision of prior legislation. As a result, the 1970 Act, passed as amendments to the 1963 Clean Air Act, was so far-reaching that it effectively established a new beginning in air pollution control.

The purpose of the 1970 Act is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population . . . ."[12] The Act has two major goals: the protection of public health and the broader goal of enhancement of public welfare. To these ends, Congress directed that national ambient air quality standards be estab-

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the full scope of theory and presentation of all the evidence needed to defend the article's position lie outside the feasible range of a single paper.

A reason for the detailed treatment of the legal erosion of the Act is that no one has provided an up-to-date and comprehensive review of such erosion, although the evidence is easily available. Furthermore, issues of growth control and planning, which are currently in the forefront of clean air controversy and which reveal most clearly the limits of single-purpose regulation, are highlighted in the discussion of the legal erosion of the Act.

[6] For a historical review, *see* J.C. Davies & B. Davies, The Politics of Pollution (1975); J. Esposito, Vanishing Air (1970); Comment, *A History of Federal Air Pollution Control*, 30 Ohio S. L.J. 516 (1969).

[7] The Act of July 14, 1955, Pub. L. No. 84-159, 69 Stat. 322 (1955).

[8] Pub. L. No. 88-206, 77 Stat. 392 (1963).

[9] Pub. L. No. 89-272, 79 Stat. 992 (1965).

[10] Pub. L. No. 90-148, 81 Stat. 485 (1967). The 1967 Air Quality Act was, in fact, composed of extensive amendments to the 1965 Act.

[11] *See* J. Esposito, *supra* note 6. The regulatory failure preceding the enactment of the 1970 Clean Air Act is significant to the analysis of the regulatory failure following the Act. Under a conventional view, good law will produce the desired results. *See, e.g.*, T. Lowi, The End of Liberalism (1969). Hence the struggle up to 1970 was to secure a good, strong law, which should then succeed. This article, on the other hand, adopts the position that political-economic structural forces underlie regulatory failure and, therefore, the more legislation attempts to defy these forces, the more resistance will be encountered. Thus an apparently strong law will frequently achieve little more than a weak one.

[12] 42 U.S.C. § 1857(b)(1)(1970). This language was taken from the Clean Air Act of 1963, Pub. L. No. 88-206, 77 Stat. 392, 393 (1963) which stated that the purpose of the 1963 Act was "to protect the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population. . . ."

lished for certain designated "criteria pollutants."[13] These pollutants were viewed as the basic measure of air quality, providing both targets for improvements and indices of the success of pollution control efforts. *Primary* standards for the criteria pollutants were to be set at levels which would protect public health,[14] while more stringent *secondary* standards served the more ambitious goal of promoting public welfare.[15] Ambient air quality was expected to meet primary standards by May 31, 1975[16] (with allowance for possible delay to 1977),[17] while secondary standards were to be met within a reasonable time thereafter.[18]

The Act created a cooperative state-federal framework as the means for implementation.[19] EPA was given direct authority to establish national ambient air quality standards,[20] limits on a special category of "hazardous air pollutants,"[21] standards for emissions from new stationary sources[22] and standards for new motor vehicles which would achieve a ninety percent reduction in carbon monoxide and hydrocarbons by 1975 and a ninety percent reduction in nitrogen oxides emissions by 1976.[23] States were given primary responsibility for achieving and maintaining ambient air quality standards.[24] They were to adopt their own strategies to meet this responsibility and to submit an implementation plan (State Plan)[25] to be reviewed by EPA.[26] However, if EPA determined that a State Plan were inadequate, it could promulgate regulations setting forth all, or part, of an implementation plan for that state.[27]

Finally, to complete the statutory framework the Act expressly allowed judicial review of EPA action with respect to the promulga-

[13] 42 U.S.C. § 1857c-3 (1970). There are currently six criteria pollutants: particulates, sulfur oxides, hydrocarbons, carbon monoxide, nitrogen dioxide and photochemical oxidants (chiefly ozone). 40 C.F.R. §§ 50.4-50.11 (1977).

[14] 42 U.S.C. § 1857c-4(b)(1)(1970).

[15] *Id.* § 1857c-4(b)(2).

[16] The State Implementation Plans were due on January 31, 1972, four months were allowed for EPA review and three years for compliance. *See* W. RODGERS, ENVIRONMENTAL LAW 237 (1977).

[17] *See* 42 U.S.C. § 1857c-5(e)(1970).

[18] *See id.* § 1857c-5(a)(2)(A)(ii).

[19] *Id.* § 1857c-5.

[20] *Id.* §§ 1857c-3(a), 1857c-4.

[21] *Id.* § 1857c-7.

[22] *Id.* § 1857c-6.

[23] *Id.* § 1857f-1(b)(1).

[24] *Id.* § 1857c-2(a).

[25] *Id.; see also id.* § 1857c-5(a)(1).

[26] *Id.* § 1857c-5(a)(2).

[27] *Id.* § 1857c-5(c).

tion of standards or the approval or promulgation of any implementation plans,[28] and gave private citizens a right of action in federal courts against violators of emission standards or to compel EPA to perform its statutory duties.[29]

In order to achieve national ambient air quality standards, emissions limitations were to be imposed on two main classes of polluters: *stationary* sources (chiefly industrial plants)[30] and *mobile* sources (chiefly automobiles).[31] Existing sources were to be brought into compliance almost entirely by efforts at the state level. State Plans were to include "emissions limitations, schedules, and timetables for compliance" for existing stationary sources, as well as "such other measures as may be necessary to insure attainment and maintenance of such primary or secondary standards, including, but not limited to, land-use and transportation controls."[32] EPA was given a direct hand in controlling new sources of pollution through its powers over motor vehicle emissions[33] and new source performance standards,[34] but the states were also to play an important role.[35] The State Plans had to include a procedure for "preconstruction review" of new sources which might prevent the attainment or maintenance of ambient air standards[36] and to which EPA performance standards would apply.[37] Furthermore, actual implementation of performance standards could be (and has been) delegated to the states.[38]

The Clean Air Act is a nearly unequivocal mandate for the attainment and maintenance of air quality standards to protect public health and welfare. It is an unusually powerful and uncompromising piece of legislation because it sets relatively specific goals,[39] establishes a definite and short-term timetable for implementation[40] and

[28] *Id.* § 1857h-5.
[29] *Id.* § 1857h-2.
[30] *E.g., id.* § 1857c-6.
[31] *Id.* § 1857f-1.
[32] *Id.* § 1857c-5(a)(2)(B).
[33] *See id.* § 1857c-6.
[34] *Id.* § 1857f-1.
[35] *See* Ferguson, *Direct Federal Controls: New Source Performance Standards and Hazardous Emissions*, 4 ECOLOGY L.Q. 645, 648-49 (1975).
[36] 42 U.S.C. § 1857c-5(a)(4)(1970).
[37] *Id.* § 1857c-5(a)(2)(D).
[38] *Id.* § 1857-6(c)(1). A state may undertake implementation and enforcement of standards for new stationary sources if it submits a plan to EPA and EPA finds the plan adequate and delegates its authority to implement and enforce the standards to the state. *Id.*
[39] *E.g., id.* § 1857f-1(b)(1).
[40] *See, e.g., id.* § 1857c-5(a).

authorizes the use of broad strategies of regulation and planning to attain its goals.[41] Furthermore, the statutory mandate is subject to little modification by such provisions as those requiring the balancing of health benefits against economic costs and technological or political feasibility.[42] The Act is thus a classic piece of single-purpose legislation, containing the (probably unanticipated) potential to generate far-reaching political and economic changes in American society.

Regulation under the Clean Air Act has had a positive effect. Air quality indices have shown modest improvement since 1970, and comparative figures indicate a reversal of the previously unchecked increase in pollutant levels in all but one category.[43] However, such progress should not be confused with success in protecting the public health. The air pollution control program has failed in virtually every instance to attain its air quality goals. A recent EPA report states that the majority of Americans still are breathing air that is harmful to their health.[44] As of 1977, only one major metropolitan area, Honolulu, did not violate any of EPA's primary standards for the six "criteria" pollutants,[45] while two of the three largest metropolitan areas, Los Angeles and Chicago, violated all six.[46]

Notwithstanding the failure to meet primary standards by 1975, or even 1977, the Council on Environmental Quality has taken an optimistic view of what the reduction in pollution levels presages:[47] but extrapolation to a pollution-free future is not very meaningful. The reductions so far attained are the ones most easily achieved. The initial installation of pollution control equipment on cars and smoke stacks, a changeover to low-sulfur fuels, the regulation of trash-burning and the least drastic industrial process changes have been used to accomplish the reduction; however, more complex and expensive methods will be necessary in the future.[48] Also, the re-

[41] *Id.* § 1857c-5(a)(2)(B).

[42] *See* Kramer, *supra* note 4, at 168-70.

[43] Nationally, between 1970 and 1975, levels of sulfur dioxide dropped 27 percent, carbon monoxide 20 percent and particulates 12 percent. Nitrogen oxides, however, have been more resistant, actually rising 10 percent since 1970. *See* San Francisco Chronicle, Feb. 24, 1978, at 1, col. 1 (EPA figures); U.S. COUNCIL ON ENVIRONMENTAL QUALITY, SIXTH ANNUAL REPORT 44 (1975); U.S. COUNCIL ON ENVIRONMENTAL QUALITY, SEVENTH ANNUAL REPORT 239 (1976). However, the trend of improved air quality has been reversing in recent years. See note 50, *infra* for a more detailed analysis of the trend.

[44] *Cited in* San Francisco Chronicle, Feb. 24, 1978, at 1, col. 1.

[45] *Id.*

[46] *Id.*

[47] U.S. COUNCIL ON ENVIRONMENTAL QUALITY, SEVENTH ANNUAL REPORT 239 (1976).

[48] *See, e.g.*, Mills & Wright, *Government Policies Toward Automotive Emissions Control,*

duced levels manifest themselves at a time of seriously retarded economic growth, when all economic indices, including pollution, are depressed.[49] Moreover, some initial gains may be slipping away: sulfur dioxide and particulate pollution have reversed the earlier trend and increased since 1975,[50] probably because of increased coal-burning.

Furthermore, undue attention to achieving primary standards for the six designated criteria pollutants has diverted public attention from other health threats. Various air pollutants besides the criteria pollutants are of equal, if not greater, danger to human life. These include the heavy metals, synthetic organics and other products and by-products of industrial processes, from asbestos to micro-particulates.[51] Environmental legislation has only just begun to acknowledge and deal with pervasive exposure to toxic and carcinogenic substances in the environment.[52] The idea that a mere handful of pollutants could be taken as the crux of the air quality and public

in APPROACHES TO CONTROLLING AIR POLLUTION 348-421 (A. Friedlander ed. 1978). The only progress toward reducing emissions levels that will come easily in the future will be the continuing retirement of pre-catalytic converter automobiles. Industrial and power plant dispersal may contribute to a redistribution of pollution from cities to rural areas, but dispersal does not reduce net national pollution. Further progress toward clean air will be impeded by rising costs (since the least costly changes have already been effected), continued growth in industrial output and automobile usage and the impact of a national energy policy which encourages the use of coal.

[49] The most serious recession since the 1930's struck the United States economy in 1974-75. This sharp setback was but the nadir of a longer period of economic difficulties beginning about 1965, worsening after 1970 and still continuing to the present despite some economic improvement in 1976-78. *See* U.S. CAPITALISM IN CRISIS (Union of Radical Political Scientists ed. 1978); E. MANDEL, THE SECOND SLUMP (1978); P. SWEEZY & H. MAGDOFF, THE END OF PROSPERITY (1977); THE ECONOMIC CRISIS READER (D. Hermelstein ed. 1975). *See also* Sweezy, *The Present Stage of the Global Crisis of Capitalism*, 29 MONTHLY REV. 1 (1975) on the slowness of the recovery.

[50] A comparison of EPA statistics for 1975 and 1977 shows that while SO_2 levels in 1975 were reduced 27 percent from 1970 levels, 1977 figures indicate that SO_2 levels were only 17 percent lower than the 1970 levels. Particulates registered a 12 percent reduction in 1975 but were only 8 percent lower in 1977 than the 1970 levels. Carbon monoxide levels were the same in 1977 as in 1975 (down 20 percent from 1970). Nitrogen dioxide levels were above 1970 levels for both 1975 and 1977. Ozone pollution showed no decrease between 1970 and 1977, except in California (although 30 percent more cars were on the road). San Francisco Chroncile, Feb. 5, 1979, at 1, col. 5.

[51] *See generally* L. LAVE & E. SESKIN, AIR POLLUTION AND HUMAN HEALTH (1977), *see also* U.S. COUNCIL ON ENVIRONMENTAL QUALITY, EIGHTH ANNUAL REPORT 11 (1977); S. EPSTEIN, THE POLITICS OF CANCER (1978).

[52] *E.g.*, Resource Conservation and Recovery Act of 1976, 42 U.S.C. §§ 6901-6987 (1976); Toxic Substances Control Act, 15 U.S.C. §§ 2601-2629 (1976); Federal Environmental Pesticide Control Act of 1972, Pub. L. No. 92-516, 86 Stat. 973 (1972) (codified in scattered sections of 15, 21 U.S.C).

safety problems seems sadly naive in light of the advances in national awareness since 1970 of the dangers of toxic substances.

III. Erosion of the Clean Air Act as Law

The goals of the Clean Air Act, along with the legal tools to implement these goals, have been seriously eroded in form and in fact since the Act's passage in 1970. Due to this erosion of law, air quality improvements have not been as dramatic as Congress and public supporters of clean air legislation anticipated in 1970. Prospects for further substantial improvement of air quality are even less encouraging than they were nine years ago. This section examines a process of policy adaptation and compromise, reflected in law, which has been underway virtually from the outset of the regulatory effort.

Each of the following subsections deals with a major programmatic area which has arisen in the process of implementing the Clean Air Act. Since some of these areas were not anticipated by Congress and thus were not included as programs in the 1970 Act, it is not possible to organize a discussion of the Act simply around the categories established therein. However, all the following areas of law have been defined in practice by case law, administrative policy or subsequent legislation.

Part A discusses the erosion of the basic tools for regulating ambient air quality: standards and State Plans. Parts B and C deal with the narrower implementation problems of controlling the two major categories of emissions: stationary sources (industrial) and mobile sources (automotive). The two parts are not, however, strictly parallel since Part B deals with bringing existing sources into compliance with standards through state efforts under State Plans, while Part C deals chiefly with EPA-implemented controls on emissions from new motor vehicles. Parts D and E focus on the problems involved in a broader type of implementation strategy than emissions controls—strategies which involve planning of one sort or another, for example, in transportation, land use and industrial location. All of the planning strategies involve aspects of the urbanization process, and all fall under State Plans. Part D treats the early planning initiatives, which grew mainly out of efforts to restrict vehicle use. These efforts have largely been abandoned, while attention has turned to the problem of accommodating industrial growth, the topic discussed in Part E. Part F provides a brief chronological summary and analysis of events in the recent history of clean air legislation.

A. Establishing A Foundation For Air Quality Control: Setting Standards and Preparing State Plans

The Clean Air Act established a basic two-tiered procedure for regulating ambient air quality. First, EPA was to set various ambient air and emissions standards and then the states were to submit State Plans outlining procedures for achieving those standards. Despite the seeming simplicity of this procedure, numerous obstacles have arisen which have precluded effective regulation of air pollution and have led to an erosion of the Act's goals of protecting the public health and enhancing the public welfare.

1. EPA Standards

a. Criteria Pollutants

Compared to implementation and enforcement of the remainder of the Act, the process of setting ambient air standards was carried out with dispatch by EPA in 1971, and suffered little direct challenge from industry.[53] A probable explanation for the lack of additional industry pressure on EPA regarding specific standards was "the existence of opportunities to exert such pressure further down the line in implementing and enforcing the standards."[54] Another probable reason for the dearth of industry challenges was that the connection between an ambient air standard and any one company's operations is rather tenuous. Consequently, standards for emissions and timetables in the State Plans—regulations which directly affect industry—have borne the brunt of corporate resistance.[55]

Although the standards set by EPA for criteria pollutants have

[53] Kennecot Copper Corp. v. EPA, 462 F.2d 846 (D.C. Cir. 1972) was the only challenge to an ambient air standard in court. Kramer, *supra* note 4, at 74. The plaintiff challenged EPA's secondary standard for sulfur oxides on the ground that EPA had insufficient scientific support for the standard. 462 F.2d at 847. After the court remanded the standard to EPA for a statement explaining the medical basis for the standard, *id.* at 850, EPA did not reissue the standard. Kramer, *supra* note 4, at 174.

Secondary standards have not generally fared very well. EPA set secondary standards identical with primary standards for four of the six criteria pollutants. 40 C.F.R. §§ 50.8-50.11 (1977). EPA relaxed the sulfur dioxide standard in 1973 by withdrawing annual exposure limits. 39 Fed. Reg. 25,678 (1973) (*amending* 40 C.F.R. § 50.5). Concern with achieving secondary standards has subsequently faded away in light of the difficulty of reaching even primary standards.

[54] Kramer, *supra* note 4, at 174.

[55] *See* English, *State Implementation Plans and Air Quality Enforcement*, 4 ECOLOGY L.Q. 595, 601 (1975).

withstood subsequent scrutiny reasonably well,[56] knowledge about the effects of air pollution remains imperfect and value judgments of acceptable risk vary according to interests. In the absence of conclusive evidence, reason and politics become an inherent part of standard setting.[57]

While EPA primary and secondary air standards may be too stringent, there is good reason to believe that they are not strict enough.[58] Increased scientific knowledge and public awareness of health hazards due to low-level exposure to pollutants make the 1971 standards suspect. A House Committee has stated that "there is more and more evidence indicating that there are significant health effects at or below the National Air Quality Standards."[59]

The 1977 Amendments to the Clean Air Act provide for an independent commission to study and report on the validity of all national ambient air standards every five years, beginning in 1980.[60] While this provision for review and revision of the standards in order to incorporate new scientific knowledge appears reasonable, it also creates new opportunities for industry to challenge the standards, and may result in their unwarranted weakening since conclusive medical evidence to support them may not exist. The outcome will probably depend on whether business chooses to initiate challenges. Such an industry decision is itself at least partially dependent on whether the existing enforcement of air standards is successful—the mere establishment of stricter standards has no real detrimental effect on businesses as long as measures to attain even the weaker standards are not enforced. Regardless of the ultimate effect, the standards' review process at least provides industry with a new forum for resistance and delay which it may exploit if its interests are threatened. A similar review board appointed under the Federal Water Pollution Control Act[61] recommended relaxing the water pol-

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[56] *See, e.g.*, NAT'L ACADEMY OF SCIENCES, PROCEEDINGS OF CONFERENCE ON HEALTH EFFECTS OF AIR POLLUTANTS (1973); NAT'L ACADEMY OF SCIENCES, AIR QUALITY AND AUTOMOBILE EMISSION CONTROL 6 (1974).

[57] *See generally* J.C. DAVIES & B. DAVIES, *supra* note 6, at 175-97; W. LOWRANCE, OF ACCEPTABLE RISK (1976). Kennecot Copper Corp. v. EPA, 462 F.2d 846 (D.C. Cir. 1972) demonstrates the difficulty of justifying a pollution standard when medical evidence either does not exist or is not conclusive. See note 53, *supra*.

[58] H.R. REP. No. 94-1175, 94th Cong., 2d Sess. 146 (1976).

[59] *Id.*

[60] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 106, 91 Stat. 691 (1977) (to be codified in 42 U.S.C. § 7409).

[61] 33 U.S.C. § 1363 (1976).

lution control program.[62] Given a current political atmosphere antagonistic to the Clean Air Act[63] and the lack of scientific proof of pollution effects, the establishment of a review process which provides the opportunity for interested parties to exert political pressure during the review of the standards must be regarded as an erosion of the 1970 law.

b. Hazardous Substances

The establishment of standards for hazardous substance emissions under the 1970 Act has been much less successful than standard setting for criteria pollutants.[64] First, EPA could have added certain toxic substances to its list of criteria pollutants for *ambient* air quality, but chose not to do so.[65] Under the law EPA could then designate *emissions* standards from industrial facilities for a separate category called "hazardous substances," regarded as more dangerous than the criteria pollutants.[66] EPA had ninety days to publish a list of such substances.[67] The list issued included only three names, however: mercury, beryllium and asbestos.[68] Moreover, the agency subsequently proposed very weak standards, such as limiting its regulation of asbestos to the elimination of visible emissions only, and had to be compelled after the statutory deadline had passed to make the standards final.[69]

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[62] Quarles, *National Water Quality: Assessing the Mid-Course Correction*, SIERRA CLUB BULLETIN (Feb. 14, 1977).

[63] *See, e.g.*, [SAN FRANCISCO] BAY AREA COUNCIL, BAY AREA COUNCIL BULLETIN 2-4 (No. 17, Feb. 1979) (excerpts from speeches delivered at conference hosted by the California Council for Economic and Environmental Balance held in San Francisco, Cal., Jan. 1979).

[64] Although hazardous substance regulation does not fall strictly within the basic framework comprised of federal ambient air quality standards and state implementation plans, it is discussed here for three reasons: (1) the significance of toxic substances to public health, see text at notes 51 & 52, *supra;* (2) the failure of government to take action with respect to toxic substances counterbalances the apparent success in setting criteria pollutant primary standards, see text at notes 53-63, *supra;* and (3) the delegation by EPA of its authority to the states to implement hazardous substance emissions standards under their planning and permit procedures pursuant to 42 U.S.C. § 1857c-7(d)(1)(1970). Thus, in practice, there is no difference between ambient air standards enforcement and hazardous substances enforcement.

[65] W. RODGERS, *supra* note 16, at 225. EPA did not include florides, polynuclear organics or lead, although inclusion was suggested by the Senate Subcommittee on Air and Water Pollution. *See* S. REP. No. 1196, 91st Cong., 2d Sess. 9 (1970).

[66] 42 U.S.C. § 1857c-7(b)(1970)(establishment of standards); *see also id.* § 1857c-7(a)(definition of hazardous substances).

[67] *Id.* § 1857c-7(b).

[68] 36 Fed. Reg. 5931 (1971).

[69] Environmental Defense Fund v. Ruckelshaus, 3 ENVIR. L. REP. 20173 (D.D.C. 1973).

Since 1972 only three more toxic substances have been added to EPA's list.[70] Efforts to establish a lead standard encountered vigorous resistance from the oil industry and EPA had to be forced to act by an environmentalist suit in *NRDC v. Train.*[71] Similarly, the Environmental Defense Fund forced EPA to adopt a "zero emissions" goal for vinyl chloride production, after a weak standard had been put forth in 1976.[72] A preliminary standard for benzene was finally issued in 1977.[73] In one area where EPA had actually sought greater jurisdiction and improved standards—radioactive emissions—its efforts had been unsuccessful until 1977.[74]

Congress recognized the need to extend EPA's meagre list of hazardous substances in the 1977 Clean Air Amendments, but its mandate is not extraordinarily vigorous. For example, with regard to radioactive pollutants, cadmium, arsenic and polycyclic organic matter emissions, the Amendments direct EPA to conduct a study within one year (two years for radioactive pollutants) to determine whether such emissions endanger public health[75] and, *if appropriate,* to include any such substance in the list of criteria pollutants or hazardous pollutants.[76] These Congressional initiatives are to be applauded, but by returning the responsibility to EPA, an agency which has been so reluctant to act in the past, it is very likely that the new standards may never be promulgated or enforced.[77]

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[70] Rodgers observes that "It is fair to say that the EPA is more than a little reluctant to expand the list of criteria pollutants." W. RODGERS, *supra* note 16, at 230.

[71] 411 F. Supp. 864 (S.D.N.Y. 1976), *aff'd* 545 F.2d 320 (2d Cir. 1976).

[72] Environmental Defense Fund v. Train, No. 76-2045 (D.C. Cir., filed Nov. 19, 1976), *dismissed after settlement* (June 24, 1977). *See also* 42 Fed. Reg. 28,154 (1977). The vinyl chloride standard applies only to vinyl chloride production itself and not to plants fabricating polyvinyl chloride plastics — a serious oversight. S. EPSTEIN, *supra* note 51, at 362.

[73] 42 Fed. Reg. 22,516 (1977).

[74] In 1974 EPA announced its intention to issue standards for radiation emissions from the normal operations of the nuclear fuel cycle. 39 Fed. Reg. 16,906 (1974). But this initiative was never carried through.

[75] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 120, 91 Stat. 720 (1977)(to be codified in 42 U.S.C. § 7422). EPA would thereby establish standards for such emissions.

[76] *Id.* EPA also has the alternative of including each category of stationary source emitting such substance in significant amounts in the list of categories subject to new source performance standards. *Id.* For a discussion of new source performance standards see notes 288-301, *infra.*

[77] Enforcement of hazardous emissions standards by the states and by EPA ran into a serious obstacle in Adamo Wrecking Co. v. United States, 434 U.S. 275 (1978). The Supreme Court held that EPA could not impose criminal sanctions for violations of work-practice rules. In his dissent, Justice Stevens wrote that the Court's opinion "has effectively made the asbestos standard, and any other work-practice rule as well, unenforceable." *Id.* at 306. *But see* Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 110, 91 Stat. 703 (1977)(to be

2. Balancing—An Erosion of the Act

Congress made little provision in the Clean Air Act for the balancing of interests, either in the process of setting primary standards or in the methods for meeting those standards by the statutory deadline;[78] a balancing approach is significant only in the process of establishing standards for new stationary sources.[79] In fact, the introduction of a "balancing test" between the Act's goal of protecting the public health and other factors such as cost of compliance, economic disruption and technological feasibility of attainment would seriously impair the Act's purposes.[80] Nearly every action to achieve cleaner air creates some economic costs. If each particular action must be evaluated by some principle of balancing clean air "benefits" against the economic "costs," then such action is vulnerable to challenges which are easily presented, but difficult to assess concretely.

Nevertheless, only after five years of conflicting judicial rulings did the United States Supreme Court settle the balancing issue by upholding the "no balancing" approach regarding EPA's review of State Plans in *Union Electric Co. v. EPA*.[81] The effect of this long controversy over the balancing issue has been described as follows:

> While some courts have reluctantly accepted the balances set by Congress, others have totally ignored them. Industry groups have attempted to reopen the balancing issue not only through lobbying for legislative changes, . . . but also through constant pressure on EPA and through lengthy and costly litigation. The result of these attacks has been a "back door" softening of some of the goals of the [Act's] . . . programs, and a compromise of the overall goal. Perhaps the most unfortunate

codified at 42 U.S.C. § 7412)(where Congress explicitly mandated that EPA may promulgate work-practice rules).

Section 112 of the Clean Air Act, 42 U.S.C. § 1857c-7 (1970), provides for the establishment of emissions limitations; Section 113, 42 U.S.C. § 1857c-8 (1970) allows criminal prosecution of violators of Section 112 limitations. EPA complained that Adamo violated the applicable emissions limitation for asbestos. However, on appeal to the Supreme Court, the Court found that while EPA had formulated procedures to be followed during demolition of buildings in order to minimize asbestos emissions during the demolition process, EPA had not set quantitative levels for asbestos limitations as specified in Section 112 of the Act. Adamo Wrecking Co. v. United States, 434 U.S. 275, 277-78 (1978). Therefore, Adamo could not be held in violation and prosecuted pursuant to Section 113.

The *Adamo* case provides just one indication of how difficult it is to enforce even a straightforward portion of the law such as Sections 112 and 113.

[78] Kramer, *supra* note 4, at 170.

[79] *Id.*

[80] *See id.* at 169.

[81] 427 U.S. 246 (1976).

result of these tactics has been the serious delay in defining goals and strategies for this program, which Congress intended to be rapidly implemented.[82]

While the courts were struggling with the balancing issue President Ford contributed to the "back door" compromise of the Act's clean air goals by requiring regulatory agencies to write Inflationary Impact Statements for all major legislative and regulatory proposals.[83] The requirement indirectly, but effectively, imposes economic balancing on all such programs. Finally, in the 1977 Amendments to the Act, Congress opened the front door to balancing by including a requirement for Economic Impact Assessments by EPA.[84]

Thus, although the Act began as a virtually absolute mandate for public health, without consideration for balancing, the balancing controversy compromised the practical effects of the Act by "softening" its goals and delaying implementation. Even after a ruling that Congress did not intend balancing to affect the review of State Plans, the President, and then Congress itself, imposed balancing considerations on regulatory efforts.

3. State Plans—Failure and Fragmentation

State Plans form the "principal component"[85] of the process envisioned by Congress for achieving ambient air standards. Although the Act removed from the states responsibility for standard setting, auto emissions controls, regulation of new sources and some lesser tasks, Congress still relied on the states for most of the enforcement effort against the thousands of specific pollution sources. Each State Plan is required to provide for "implementation, maintenance and enforcement" of national primary and secondary air standards within each air quality region in the state.[86] Because they outline concrete means to force compliance with clean air standards, the State Plans have been the primary target of attack from industry and other opponents of clean air regulations.[87] They have been subject to endless litigation and an official retreat from the goals of the Clean Air Act by the states themselves, EPA, the courts and Con-

[82] Kramer, *supra* note 4, at 169 (cites omitted).

[83] Exec. Order No. 11821, 3 C.F.R. § 926 (1971-75 Compilation).

[84] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 307, 91 Stat. 778 (1977)(to be codified in 42 U.S.C. § 7617).

[85] S. REP. No. 1196, 91st Cong., 2d Sess. 12 (1970).

[86] 42 U.S.C. § 1857c-5(a)(1)(1970).

[87] *See* English, *supra* note 55.

gress. The process of implementation at the state level, therefore, has not gone according to plan.[88]

The Clean Air Act required that the states submit their State Plans within nine months after the issuance of ambient air standards and that EPA review the Plans within four months; if the agency did not find a State Plan adequate, it then could issue its own plan in place of the state's.[89] The states were to write the Plans in order to produce compliance with primary standards within three years, and in no event later than the overall target date of 1975.[90] EPA could grant a two-year extension of this deadline, to 1977, if the state so requested.[91] Despite these Congressional timetables, however, the goal of meeting the primary standards was not met by 1975, and has not been met since.[92] This failure to achieve compliance with the primary standards within the statutory time frame resulted both from the government's failure to obtain satisfactory State Plans, and from the failure of the states successfully to enforce those Plans ultimately submitted.[93]

By 1975, as the deadlines for submitting State Plans continued to retreat in the face of opposition and failure to attain air quality standards, EPA had granted two-year delays to twenty-eight states; by the end of 1976, a majority of states had not even submitted full State Plans and no state had complete approval of its Plan.[94] By 1977, with neither all the State Plans approved nor primary standards achieved in most of the country, EPA and Congress were forced to make some kind of accommodation with the unpleasant reality that the Clean Air Act was not being enforced. They responded with the Clean Air Amendments of 1977, which, in tough language that belied its actual result, legitimized the delays by requiring all states with Air Quality Control Regions in violation of an ambient air standard to submit revised implementation plans by

[88] The difficulties encountered in fashioning and implementing State Plans is not surprising when one considers that implementation of the Act in general has not been a smooth process. "The Clean Air Act is a potpourri of postponements, revisions, extensions and suspensions." W. RODGERS, *supra* note 16, at 238.

[89] 42 U.S.C. § 1857c-5 (1970). Since standards were issued on April 30, 1971, the State Plans were due on January 30, 1972.

[90] *Id.* § 1857c-5(a)(2)(A)(i).

[91] *Id.* § 1857c-5(e).

[92] See text at notes 44-46, *supra*.

[93] A good treatment of the importance of state and local regulations and enforcement in determining relative levels of pollution can be found in COUNCIL ON ECONOMIC PRIORITIES, CRACKING DOWN: OIL REFINING AND POLLUTION CONTROL (1975).

[94] U.S. COUNCIL ON ENVIRONMENTAL QUALITY, SIXTH ANNUAL REPORT 45 (1975).

January 1, 1979, to be approved by EPA by June 30, 1979. The plans were to provide for clean air by 1982,[95] a delay of seven years from the date originally established by Congress in 1970.[96]

Not only has the State Plan process failed to meet the deadlines for attaining primary standards, but the supposedly unitary and comprehensive process itself has been dismembered as unanticipated problems arose. First, issues concerning transportation controls[97] and indirect source controls[98] created disputes. Then, as various sources failed to meet specific emissions limitations and timetables, the issue of granting variances caused further difficulties.[99] Later, environmentalists obtained a ruling that EPA could not approve portions of a State Plan which allowed significant deterioration of existing air quality.[100] Most recently, in response to industry's predisposition to expand, a policy of emissions off-sets, which allows new sources of pollution to become operative if existing sources compensate by matching the new pollution with a corresponding reduction in emissions, emerged.[101] In each instance, these developments occurred outside the original process of creating and implementing State Plans, and by 1977, had effectively achieved a status which was nearly independent from the State Plans themselves. Thus, while State Plans still include individual emissions limitations, compliance schedules and other strategies for attaining the ambient air quality standards, the unitary and comprehensive role of the State Plans in achieving the standards was destroyed because new, difficult issues were approached directly rather than through the State Plan process.[102]

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[95] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 172, 91 Stat. 746 (1977)(to be codified in 42 U.S.C. § 7502).

[96] See text at note 16, *supra*. Moreover, since it takes several years for old cars to be replaced by new ones, attainment of standards for auto-related pollutants (carbon monoxide and ozone) can be delayed until 1987. *See* Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 129(b), 91 Stat. 745, 746-47 (to be codified in 42 U.S.C. § 7502). The parts of the State Plans pertaining to these pollutants may be delayed, ultimately, until 1982. *Id.*

[97] See text at notes 225-60, *infra*.

[98] See text at notes 261-76, *infra*.

[99] See text at notes 104-23, *infra*.

[100] Sierra Club v. Ruckelshaus, 344 F. Supp. 253 (D.D.C. 1972); see generally text at notes 302-33, *infra*.

[101] See text at notes 334-54, *infra*.

[102] The 1977 Amendments simply formalized this fragmentation by giving each major issue its own section of the law. Clean Air Act Amendments of 1977, Pub. L. No. 95-95, 91 Stat. 685 (1977). The "fragments" are found in the following sections: non-degradation — §§ 160-69, 91 Stat. 731-42 (to be codified in 42 U.S.C. §§ 7470-79); non-attainment — § 172, 92 Stat. 746 (to be codified in 42 U.S.C. § 7502); emissions offsets — §§ 165, 173, 91 Stat. 735, 748 (to be codified in 42 U.S.C. §§ 7475, 7503); delayed compliance — §§ 112, 118, 91 Stat. 705,

Breaking a unitary process into separate components is partially a reasonable response to the actual pressures brought to bear on the states, EPA, the courts and Congress with respect to the difficult problems encountered in trying to achieve the goals of the Clean Air Act. However, when a unitary process becomes a piecemeal effort, the overall goal is easily lost and enforcement is more easily neutralized, modified or abandoned. Furthermore, isolated enforcement failures do not create the same public reaction as a general rejection of clean air goals would cause. Fragmentation permits lip service to be given to the old goals, while political struggles won by polluters have been weakening, one by one, the mechanisms intended to attain those goals.

B. Controlling Industrial Emissions: Non-Compliance

Non-compliance has been a persistent problem for EPA and the states. "Non-compliance," in this article, means the failure of specific polluters to meet the emissions limits and timetables for cleaning up emissions established by State Plans. Congress, EPA and state and local agencies responded to non-compliance by creating various exceptions to the Act or State Plans for some of the largest polluters such as electric utilities, steel and non-ferrous metals producers, which were threatened with disruption by strict enforcement of clean air standards.[103]

1. The Variance Loophole

Delays in achieving compliance began when EPA allowed states to submit individual compliance schedules later than the other portions of the State Plans.[104] By late 1974, some states had not completed *any* compliance schedules, even though the deadline for compliance was drawing near.[105] As the 1975 deadline for compliance approached, a controversy developed over the issue of "variances." Variances are permits, granted by the states, which allow specific

714 (to be codified in 42 U.S.C. §§ 7413, 7420); coal conversion and smelters — §§ 117, 122, 91 Stat. 712, 722 (to be codified in 42 U.S.C. §§ 7419, 7425); indirect source controls — § 108(e)(5), 91 Stat. 695 (to be codified in 42 U.S.C. § 7410).

[103] See text at notes 124-61, *infra*. Electric utilities, steel and non-ferrous metal producers ranked first, second and fourth, respectively, in terms of total estimated costs of pollution abatement among United States industries. J. BOOTHE, CLEANING UP: THE COSTS OF REFINERY POLLUTION CONTROL (1975).

[104] Ayres, *Enforcement of Air Pollution Control on Stationary Sources under the Clean Air Amendments of 1970*), 4 ECOLOGY L.Q. 441, 446 n.15 (1975).

[105] *Id.*

facilities to continue to emit greater amounts of pollutants than allowed by the applicable State Plan.[106] States usually grant variances for a duration of one or two years at a time.[107] Although variances obviously allowed certain plants to ignore emissions limits, they did not affect the ambient air quality standards themselves.

The states generally took a pro-industry position, granting liberal variances on the basis of the economic burden and technological infeasibility of timely compliance.[108] The controversy over variances spawned two sets of court actions: the Natural Resources Defense Council (NRDC) initiated one, and utility and oil companies started the other. The lower courts were divided on the question whether variances were merely revisions of State Plans or were actions which modified Congressional deadlines for compliance and therefore required Congressional approval.[109] EPA supported the states' position, maintaining that state-issued variances were "revisions" of State Plans, and therefore subject only to EPA approval. The issue had serious ramifications—if variances were rigidly limited, thousands of major stationary sources would be threatened. The cases culminated in two United States Supreme Court decisions, *Train v. NRDC*[110] and *Union Electric Co. v. EPA*.[111]

The Supreme Court reached a decision favorable to the polluters in *Train v. NRDC*[112] by concurring with EPA's liberal view toward state-granted variances. The Court held that the variances did not conflict with the ability of the State Plan to make air quality meet the primary standards by the legislative deadline,[113] reasoning that the states should be allowed "considerable latitude" in their programs.[114] This position, sensible enough on its face, is not tenable when considered in the context of the states' and EPA's capitulation to industry pressure. "[B]y striking the balance in favor of flexibil-

[106] *See, e.g.*, Union Electric Co. v. EPA, 427 U.S. 246, 252 (1976).

[107] *See, e.g., id.*

[108] "[Forty-eight] states submitted [State Plans] with language requiring the state air pollution control agency to consider economic factors in one stage or another of the implementation process." Kramer, *supra* note 4, at 179.

[109] NRDC v. EPA, 507 F.2d 905 (9th Cir. 1974); NRDC v. EPA, 494 F.2d 519 (2d Cir. 1974); NRDC v. EPA, 489 F.2d 390 (5th Cir. 1974); NRDC v. EPA, 483 F.2d 690 (8th Cir. 1973); NRDC v. EPA, 478 F.2d 875 (1st Cir. 1973).

[110] 421 U.S. 60 (1975).

[111] 427 U.S. 246 (1976). For discussions of these two cases and their antecedents, *see* Kramer, *supra* note 4, at 179-202; W. RODGERS, *supra* note 16, at 238-45. *See also* English, *supra* note 55, at 626-27.

[112] 421 U.S. 60 (1975).

[113] *See id.* at 91.

[114] *Id.* at 87.

ity, the court shortened the odds on the standards being met and maintained . . . . "[115] Indeed, the 1975 deadline was passing even as the Court made its decision.

In *Union Electric,* the Court decided against industry's position that EPA should weigh economic and technological considerations in its approval of State Plans.[116] Petitioner, an electric utility company, sought a review of EPA's 1972 approval of Missouri's State Plan after EPA notified the company that its plants violated the emissions limitations contained in the plan in 1974.[117] The company argued that economic and technological difficulties made compliance with the emissions limitations impossible.[118] The Court held that "Congress intended claims of economic and technical infeasibility to be wholly foreign to the Administrator's consideration of a state implementation plan."[119] Thus, individual pollution sources could not challenge EPA's approval of State Plans on the basis of economic and technological considerations.

Therefore, while states could grant variances as "revisions" of State Plans seemingly for whatever reasons they chose, EPA could not change State Plans because of a challenge to the Plans on the basis of economic or technological infeasibility. Unfortunately, these suits and conflicting lower court decisions on the issue of whether EPA could weigh economic and technological factors[120] "interfered severely with attainment and maintenance of primary standards within the prescribed timetable."[121] Also, the Court left a loophole for industrial delaying tactics, leaving undecided the question whether economic and technical considerations could enter into future judicial review or enforcement proceedings.[122] Then, as noted previously, in 1977 Congress introduced economic and technological considerations into the Clean Air Act by requiring Economic Impact Assessments.[123]

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[115] W. RODGERS, *supra* note 16, at 241.

[116] Union Electric Co. v. EPA, 427 U.S. 246, 265 (1976).

[117] *Id.* at 252.

[118] *Id.* at 253.

[119] *Id.* at 256.

[120] *See, e.g.,* Duquesne Light Co. v. EPA, 522 F.2d 1186 (3d Cir. 1975), *vacated and remanded,* 427 U.S. 902 (1976); Indiana & Michigan Elec. Co. v. EPA, 509 F.2d 839 (7th Cir. 1975); St. Joe Minerals Corp. v. EPA, 508 F.2d 743 (3d Cir. 1975); Buckeye Power Co. v. EPA, 481 F.2d 162 (6th Cir. 1973); Appalachian Power Co. v. EPA, 477 F.2d 495 (4th Cir. 1973); Getty Oil Co. v. EPA, 342 F. Supp. 1006 (D. Del. 1972). *See also* Kramer, *supra* note 4, at 186-94.

[121] *But see* Union Electric Co. v. EPA, 427 U.S. 246, 265-66 (1976).

[122] Kramer, *supra* note 4, at 196-202.

[123] See note 84, *supra.*

2. Coal Conversion, Tall Stacks and Electric Utilities—Special Dispensations

The "energy crisis" of 1973-74 provided the justification for several amendments which critically weakened the Clean Air Act. The energy crisis brought the Act into confrontation with an emergent energy supply promotion policy (nick-named "Project Independence") which emphasized the use of coal.[124] Enacted in response to the oil shortages of 1973-74, the Energy Supply and Environmental Coordination Act of 1974[125] (ESECA) empowered EPA to grant a "compliance date extension" to January 1, 1979 to any stationary source which used coal as a fuel or which converted to coal use.[126] The principal beneficiary of this policy was the electric utility industry, the largest user of coal. Since coal combustion is, aside from automobiles, the most prolific single source of air pollution in the United States,[127] and since the changeover from the use of coal to low-sulfur oil had been an important measure for reducing emissions,[128] the ESECA provision was a major setback to clean air efforts.[129]

Consistent with the ongoing national energy policy which promoted the use of domestic coal,[130] the 1977 Amendments continued the policy of extending compliance deadlines. The Amendments extended the compliance deadline for coal-burning facilities to December 31, 1980,[131] two years later than allowed by ESECA; moreover, the Amendments provided for the possibility of an additional three-year extension. Subject to certain restrictions, powerplants

[124] Havemann & Phillips, *Energy Report: Independence Blueprint Weighs Various Options*, 6 NAT'L J. REP. 1637 (1974).

[125] Pub. L. No. 93-319, 88 Stat. 246 (1974)(codified in 15 U.S.C. §§ 791-98 (1976) and amending various sections in 42 U.S.C.).

[126] 42 U.S.C. § 1857c-10(c)(1976)(as amended by Pub. L. No. 93-319, 88 Stat. 246 (1974)). See note 125, *supra*.

[127] Coal is the leading source of sulfur dioxide and particulates. It accounts for over half of the sulfur dioxide emissions in the United States. Ayres, *supra* note 104, at 442-43.

[128] Four hundred utilities had converted from coal to oil between 1965 and 1972. N.Y. Times, Feb. 10, 1974, at 4.

[129] The ESECA provision achieved by legislation what the utilities had been seeking by means of variances from State Plans. Most of the suits which sought delayed compliance were brought by utilities. English, *supra* note 55, at 621 n.168.

[130] Berger, Reis & Rudolph, *Inside Carter's Energy Plan*, Not Man Apart, mid-June 1977, at 8, col. 1; Commoner, *The Hidden Joker in Carter's Energy Deck*, Washington Post, May 29, 1977, § B, at 1, col. 4; Cockburn & Ridgeway, *Carter's Powerless Energy Policy*, N.Y. Rev. of Books, May 26, 1977, at 31.

[131] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 112, 91 Stat. 705-07 (1977)(to be codified in 42 U.S.C. § 7413).

not in compliance with applicable emissions limitations also can escape legal action by converting to locally-produced coal.[132]

Until very recently, the most effective method for controlling stack emissions of sulfur oxides from coal-burning powerplants was the installation of "scrubbers."[133] The utility industry resisted such a measure on the grounds of cost and reliability,[134] and instead initially favored a changeover to low-sulfur fuel (usually oil and gas). Such an approach was incorporated in most State Plans and approved by EPA, even though it soon became apparent that supplies of low-sulfur fuel were insufficient to supply the powerplants' needs.[135] The utilities then adopted the strategy of advocating a combination of intermittent control practices (in which they would curtail operations or switch to low-sulfur fuels during times of adverse air conditions) and the use of tall stacks (which would disperse pollutants several hundred feet in the air).[136] Dispersals of sulfur dioxide, however, can produce harmful "acid rains" often hundreds of miles away from the source.[137] "[A]lthough the objections to dispersion are overwhelming, the immense financial interests of utilities and smelters in obtaining approval for tall stacks and [intermittent control practices] have kept alive the issue of their legality."[138]

In *NRDC v. EPA*[139] the United States Court of Appeals for the Fifth Circuit ruled that intermittent control systems were acceptable only when emissions reduction equipment was unavailable. Industry lobbying then succeeded in persuading the Ford Administration to support another variance. In November, 1974 the Administration declared that it would allow use of intermittent control systems and tall stacks by isolated rural powerplants until 1985,[140] and in 1975, it proposed amendments to this effect for the Clean Air Act.[141] However, the proposed amendments did not survive the ensuing change of administrations, and the 1977 Amendments ex-

[132] *See id.* § 122, 91 Stat. 722-24 (to be codified in 42 U.S.C. § 7425).

[133] "Scrubbers" are flue-gas desulfurization devices; they work by spraying the stack gases with an alum solution.

[134] *See* Ayres, *supra* note 104, at 443-49.

[135] *Id.* at 446.

[136] *Id.* at 449-52.

[137] *Id.* at 454. *See also* Likens, *Acid Rain*, 14 ENVIRONMENT 33 (1972).

[138] Ayres, *supra* note 104, at 455.

[139] 489 F.2d 390 (5th Cir. 1974), *modified sub nom.* Train v. NRDC, 421 U.S. 60 (1975).

[140] U.S. COUNCIL ON ENVIRONMENTAL QUALITY, SIXTH ANNUAL REPORT 47 (1975).

[141] Energy Independence Act of 1975, Titles V & VI, Administration Proposals, Jan. 30, 1975.

pressly prohibit tall stacks.[142] Yet, the prohibition came about only after seven years of dalliance.

Despite such delayed restrictions, the exemption for facilities which convert to burning coal has sheltered most non-complying utilities in the eastern United States, while "isolated rural powerplants" (referring principally to the new facilities being constructed in the Colorado Plateau region) have found another loophole in the weakening of the Act's "non-degradation" policy.[143]

3. Steel and Smelters — More Dispensations

As a group, non-ferrous primary metal producers have played a major role in opposition to the Clean Air Act. One indication of their role is their appearance in many legal actions against EPA, such as *Kennecott Copper Corp. v. EPA*.[144] Also, they joined with utilities in the controversy over tall stacks. Their resistance has not captured newspaper headlines to the same degree as that of the steel industry, but it is effective: Congress disallowed tall stacks as a pollution control strategy in the 1977 Amendments,[145] but it created a delayed compliance loophole for existing primary non-ferrous smelters. They can receive two extensions of compliance deadlines for sulfur dioxide emissions for periods up to January 1, 1988.[146]

The steel industry affords another glaring example of obstruction, one which has been carefully documented.[147] Steel production is one of the major causes of air and water pollution in the United States,[148] but because of the industry's economic problems[149] as well as the enormous costs of reducing pollution,[150] steel companies have continually avoided compliance with pollution control measures and have been a particular problem for regulators.[151]

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[142] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 121, 91 Stat. 721 (1977)(to be codified in 42 U.S.C. § 7423).

[143] *See* Craig, *Cloud on the Desert*, 13 ENVIRONMENT 20 (1971). See also text at notes 302-33, *infra*.

[144] 462 F.2d 846 (D.C. Cir. 1972). See also note 53, *supra*.

[145] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 121, 91 Stat. 721 (1977)(to be codified in 42 U.S.C. § 7423).

[146] *Id.* § 117, 91 Stat. 712 (1977)(to be codified in 42 U.S.C. § 7419).

[147] COUNCIL ON ECONOMIC PRIORITIES, ENVIRONMENTAL STEEL (1972); COUNCIL ON ECONOMIC PRIORITIES, ENVIRONMENTAL STEEL UPDATE (1977); Greer, *Obstacles to Taming Corporate Polluters: Water Pollution Politics in Gary, Indiana*, 3 ENV. AFF. 199 (1973); Greer, *Air Pollution and Corporate Power: Municipal Reform Limits in a Black City*, 4 POLITICS & SOCIETY 183 (1974).

[148] *Id.*

[149] *See* P. SWEEZY & H. MAGDOFF, *supra* note 49.

[150] See note 103, *supra*.

[151] A Council on Economic Priorities Study concluded that of the seven largest steel makers

United States Steel Corporation, by far the largest company in the industry, has also been one of the most egregious offenders.[152] The corporation's facility at Gary, Indiana is the largest integrated steel plant in this country. Control efforts by local, state and federal officials had virtually no effect on conditions at the plant for the first ten years following enactment of the 1963 Clean Air Act.[153] At the end of 1973, U.S. Steel ran out of time on a promise made eight years earlier to close its last open hearth furnaces at Gary. The company requested and received two six-month suspensions before EPA finally threatened to impose a paltry $250,000 fine. The company responded by closing down ten of the furnaces, which created a great deal of publicity over "lost jobs" and proved quite embarrassing for EPA.[154] Even with this shutdown, however, emissions were still not in compliance with standards. In January, 1979, EPA once again took U.S. Steel to court, seeking $25,000 per day in fines. It was the Agency's eighth suit against the company in as many years.[155]

In another case against U.S. Steel, concerning its Clairton coke works near Pittsburgh, a three million dollar fine for violation of a 1972 clean-up agreement was reduced to $750,000 when U.S. Steel signed a new agreement in late 1976.[156] The company reportedly agreed to invest $600 million in new coke ovens and remodeling in exchange for immunity from prosecution for a period of three to ten years.[157] Considering the past record of unmet promises, the company appears to have made a good deal for itself.

For a corporation of U.S. Steel's size and presence, recalcitrance in the face of clean air regulation is generated by a combination of corporate arrogance[158] and real economic pressures of competition in a declining industry. In lesser companies, financial precariousness threatens factory closure, even bankruptcy, and severe dislocation

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only one, Armco, made any significant progress in pollution control between 1972 and 1977. COUNCIL ON ECONOMIC PRIORITIES, ENVIRONMENTAL STEEL UPDATE (1977).

[152] Council on Economic Priorities characterized U.S. Steel's environmental position as follows: "litigate first and install controls only as a last resort." *Id.* at 169.

[153] Greer, *Air Pollution and Corporate Power: Municipal Reform Limits in a Black City*, 4 POLITICS & SOCIETY 183 (1974).

[154] San Francisco Chronicle, Dec. 30, 1974, at 6, col. 1; U.S. COUNCIL ON ENVIRONMENTAL QUALITY, SIXTH ANNUAL REPORT 50 (1975).

[155] Not Man Apart, mid-Feb. 1979, at 6, col. 4.

[156] San Francisco Chronicle, Dec. 31, 1976, at 6, col. 6.

[157] *Id.*

[158] For ample evidence of U.S. Steel's arrogant use of political power *see* Greer, *supra* note 147 (both references).

for dependent workers and communities. Government regulators either recoil from precipitating such crises or are prevented from taking action by strong political coalitions of business and labor.[159] A good example of such governmental withdrawal is the case of Wheeling-Pittsburgh Steel, an ailing corporation which was fined $39.8 million for its longstanding violation of air pollution regulations in Pennsylvania.[160] The state government intervened to reduce the fine to only $100,000 and to provide $28.5 million in federal loan guarantees to help Wheeling-Pittsburgh comply with air pollution standards.[161] In this instance, the company not only was able to delay compliance, but also managed to shift part of the costs to the government and its taxpayers.

These examples of individual corporate resistance are a signal to businesses that a threatened plant closure may help to stave off the regulators. Such action tends to focus public disfavor on environmental regulations rather than on the corporation's prolonged resistance to pollution control, or else to shift the costs of compliance to the public.

4. Continued Non-Compliance—Retreating Deadlines

The original attainment date for meeting primary ambient air standards was 1975, with the possibility of postponement to 1976 or extension to 1977.[162] Acting under considerable political pressure and time constraints, EPA tended to grant extensions and postponements freely.[163] This liberal granting of extensions plus the favorable result in the variance controversy in 1975,[164] reduced the pressure on non-complying industries.

The need somehow to accommodate non-complying industries arose again as the extended deadlines approached. In 1977, official figures indicated that 1400 major polluters were not in compliance with emissions limitations and timetables,[165] and hence potentially faced fines or forced closures. Senator Muskie, in his comments on the Conference Committee Report for the 1977 Amendments, put

[159] The best example of this problem involves water pollution control efforts in the Mahoning Valley of Ohio, a steel-producing region. *See* U.S. COUNCIL ON ENVIRONMENTAL QUALITY, SEVENTH ANNUAL REPORT 12, 162 (1976).

[160] Wall St. J., March 21, 1978, at 14, col. 4.

[161] *Id.*

[162] See note 16, *supra.*

[163] See text at notes 94-96, *supra.*

[164] See text at notes 104-23, *supra.*

[165] *See* 123 CONG. REC. S13697 (daily ed. Aug. 4, 1977)(remarks of Sen. Muskie).

great emphasis on "an expeditious clean-up schedule"[166] for industries not in compliance. However, Congress extended the deadline for compliance yet another year, to July 1, 1979.[167] If the 1979 deadline is not met, violators will face a three-to-five year compliance schedule designed to make them meet standards; during that period they will be required to pay a penalty.[168] This approach eliminates some of the financial incentive to avoid compliance, but its effectiveness depends, as always, on the willingness and capacity of the government to enforce the statute.

C. Controlling Motor Vehicle Emissions

The Clean Air Act attempts to control pollution from mobile sources chiefly by reducing the emissions of new passenger cars sold in this country. Efforts to limit emissions from other types of motor vehicles and aircraft, to eliminate dangerous fuel additives, to retrofit existing vehicles with smog control devices and to reduce the total number of vehicles on the road and miles driven have complemented the primary strategy.[169] All of the control programs have fared poorly.[170]

1. New Automobile Emissions — Ever-Receding Deadlines

The automobile emissions control effort is perhaps the most prominent part of the whole clean air regulatory effort.[171] It is also the best example of erosion of the law in the form of ever-receding deadlines. This is not to say that some progress has not been made

[166] *Id.* at S13698.

[167] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 112, 91 Stat. 705 (1977)(to be codified in 42 U.S.C. § 7413).

[168] *Id.* § 118, 91 Stat. 714 (to be codified in 42 U.S.C. § 7420). The penalty is essentially an effluent charge. For a discussion of effluent charges, *see generally* Mills & Wright, *supra* note 48, at 348-421.

[169] Non-automotive vehicle emissions controls and retrofitting of existing vehicles with smog devices are not discussed in this article. Fuel additives are discussed in text at notes 195-203, *infra;* transportation and indirect source controls are discussed in text at notes 225-76, *infra.*

[170] See note 169, *supra.* It should be added that the main reason for not discussing non-automotive vehicle emissions control and retrofitting is that very little has happened in these areas. Retrofitting, the only mobile source analog to the control of existing industrial emissions, suffers from problems of cost, regressive economic impact, difficulty of enforcement and time-lag. *See* COLUMBIA UNIVERSITY LEGISLATIVE DRAFTING RESEARCH FUND, THE AUTOMOBILE AND THE REGULATION OF ITS IMPACT ON THE ENVIRONMENT 6-84 (1974).

[171] Automobiles account for 70 percent of carbon monoxide emissions, 50 percent of hydrocarbon emissions and 30 percent of nitrogen oxides emissions nationwide. San Francisco Chronicle, Jan. 18, 1977, at 6, col. 3.

in lowering new car emissions;[172] nonetheless, the goals of the Act have not yet been met and the task grows more difficult as they are neared.[173]

The history of vehicle emissions control divides into three stages. The first stage begins with passage of the 1970 Act which mandated a ninety percent reduction in hydrocarbons and carbon monoxide by 1975, and a similar reduction in oxides of nitrogen by 1976.[174] Congress initially gave EPA authority to grant a one-year extension of these deadlines under certain restrictive conditions.[175] Not surprisingly, the automobile manufacturers, which have a long history of opposition to pollution controls,[176] immediately applied for a one-year extension of the deadlines.[177] EPA refused the industry's request but, in *International Harvester Co. v. Ruckelshaus*,[178] the United States Court of Appeals for the District of Columbia remanded the denial to EPA for further explanation of its administrative decision.[179] Faced with a very onerous burden of proof with respect to certain aspects of the denial and further hampered by a directive to respond within a limited time period, EPA opted to grant one-year extensions of the emissions deadlines,[180] to 1976 for hydrocarbons and carbon monoxide, and to 1977 for nitrogen oxides.[181]

Within one year, however, the "energy crisis" of 1973-74 added a completely new dimension to the regulatory effort. The government

[172] By 1975, hydrocarbon emissions were 83 percent lower per mile than in 1970. U.S. DEP'T OF TRANSP., EPA & U.S. FED. ENERGY ADMIN., AN ANALYSIS OF ALTERNATIVE MOTOR VEHICLE EMISSION STANDARDS 20 (May 19, 1977).

[173] The marginal costs of improvements in remaining emissions is extremely high relative to previous improvements. *See generally* Mills & Wright, *supra* note 48.

[174] 42 U.S.C. § 1857f-1(b)(1)(1970).

[175] *Id.* § 1857f-1(b)(5).

[176] *See* J.C. DAVIES & B. DAVIES, *supra* note 6 at 44-55.

[177] For a discussion of the events from 1970 to 1975, *see* O'Connor, *The Automobile Controversy — Federal Control of Vehicular Emissions*, 4 ECOLOGY L.Q. 661, 664-71 (1975).

[178] 478 F.2d 615 (D.C. Cir. 1973).

[179] *Id.* at 647-50. *See* Kramer, *supra* note 4, at 212-17. The court apparently based its decision on the technical feasibility of achieving the emissions standards. Relying on the findings of a National Academy of Sciences study which contradicted EPA's opinion on the potential for technical change in engine design, the court questioned whether the industry could meet the standards. It is submitted that the authors of this study took a remarkably narrow view of their mandate, ruling out most of the innovative possibilities and taking an unduly sympathetic view of the industry's constraints. The court was afraid of the disruptive effects of EPA's power effectively to close down the auto industry if it did not achieve the standard, given the court's judgment that compliance was not technically feasible and failure therefore likely.

[180] Kramer, *supra* note 4, at 216-17.

[181] 38 Fed. Reg. 22,474 (1973); *id.* at 10,318.

feared that pollution controls, which lowered fuel economy, would exacerbate fuel supply problems. The Energy Supply and Environmental Coordination Act of 1974 (ESECA) reflected such concerns by setting interim standards of a sixty-seven percent reduction for 1975 (1976 for nitrogen oxides), and by extending the ultimate deadlines one more year, to 1977 (1978 for nitrogen oxides).[182]

The second stage of the history of vehicle emissions controls started in 1974 and continued until the enactment of the 1977 Amendments to the Clean Air Act. Beginning with 1975 model cars, a new type of "add-on" device came into general use: the catalytic converter. Affixed to a car's tailpipe, the catalytic converter promotes a chemical reaction which produces water and carbon dioxide from unburned hydrocarbons, carbon monoxide and oxygen. It is ironic, but important, to note that: (1) EPA's denial of the industry's application for extended deadlines was remanded in *International Harvester Co. v. Ruckelshaus*[183] partly because the court questioned EPA's judgment that the 1975 deadlines were feasible—a judgment which EPA based on the potential use of catalytic converters; and (2) although General Motors claimed in the suit that it would incur "an unreasonable risk of business catastrophe" if it were forced to put converters on its 1975 model automobiles, it then introduced catalytic converters on eighty-five percent of its 1975 cars only two months after defeating the requirement![184]

The catalytic converter also has its limitations.[185] It produces thirty-five times the amount of sulfuric acid mist produced by an unequipped vehicle, and its effective life is probably not much over 50,000 miles.[186] Furthermore, the more efficient, higher temperature combustion which is required with the use of the converters increases output of nitrogen oxides and therefore renders catalytic converters ineffective in achieving nitrogen oxide standards.

In anticipation of the approaching 1977/78 deadlines, the automobile industry began agitating for further postponement.[187] In debate

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[182] 42 U.S.C. § 1857f-1(b)(1976)(as amended by Pub. L. No. 93-319, 88 Stat. 246 (1974)).

[183] 478 F.2d 615 (D.C. Cir. 1973).

[184] *See* Ditlow, *Federal Regulation of Motor Vehicle Emissions Under the Clean Air Act Amendments of 1970,* 4 ECOLOGY L.Q. 495, 515 (1975).

[185] Furthermore a considerable portion of the emissions reductions cannot be credited to the converters but to greater fuel efficiency and other design modifications mandated by law since the energy crisis. Dewees, *The Costs and Technology of Pollution Abatement,* in APPROACHES TO CONTROLLING AIR POLLUTION 312-23 (A. Friedlander ed. 1978).

[186] U.S. COUNCIL ON ENVIRONMENTAL QUALITY, EIGHTH ANNUAL REPORT 23 (1977).

[187] Asbell, *The Outlawing of Next Year's Cars,* N.Y. Times, Nov. 21, 1976, (Magazine) at 126.

over both the 1976 and 1977 versions of the Clean Air Amendments, auto manufacturers predicted dire consequences for the national economy if they were forced to meet the approaching compliance dates.[188] Presidents Ford and Carter voiced a similar concern,[189] and the industry continued to exert pressure by alternately threatening to stop production and refusing to make improvements in 1978 model cars. The President of General Motors was quoted as saying, "They can close the plants. They can get someone in jail—maybe me. But we're going to make [1978] cars to 1977 standards."[190]

The resulting compromise embodied in the 1977 Amendments severely delayed implementation of the standards. The ninety percent reduction in hydrocarbon emissions, originally targeted for 1975, has been put back to 1981, and the attainment of the carbon monoxide standard also has been postponed until 1981, with an interim reduction of eighty percent required by 1980.[191] Furthermore, EPA again has the option of retaining the eighty percent reduction standard for two additional years if it believes the technology does not exist to meet the 1981 standard.[192] A four-year waiver of the nitrogen oxide standard is authorized for diesel engines and any other innovative technology that may be introduced.[193] No standard for sulfuric acid emissions from tailpipes equipped with catalytic converters has been established.

Supporters of the clean air campaign had no illusions as to the capitulation to auto industry pressure represented by the 1977 Amendments. Senator Edmund Muskie, leader of the clean air forces in the Senate, made a telling observation about the erosion of the law:

> I would not have believed in 1970 that we would ultimately provide the auto industry with a longer period of time to comply with emission standards than the manufacturers themselves requested of President Nixon in 1969. So be it. We have finally completed the last round.[194]

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[188] *Id.* at 127.

[189] *Id.* at 41.

[190] *Id.* at 126.

[191] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 201, 91 Stat. 751 (1977)(to be codified in 42 U.S.C. § 7521).

[192] *Id.* at 91 Stat. 752.

[193] *See id.* at 91 Stat. 752-53. The introduction of diesel engines in passenger cars as a measure for economizing fuel consumption raises new problems of potential danger to human health. Diesel fuel is not as highly refined as gasoline and EPA is just beginning to conduct tests on diesel fuel and its complex hydrocarbon emissions. *See* San Francisco Chronicle, July 17, 1977, (*This World* section) at 33, col. 1. EPA proposed the first standard for diesel fuel emissions on January 11, 1979. San Francisco Chronicle, Jan. 11, 1979, at 6, col. 5.

[194] 123 CONG. REC. S13702 (daily ed. Aug. 4, 1977)(remarks of Sen. Muskie).

Senator Muskie was shortsighted on his last point; the final round is by no means complete. The second round is over and the third is just beginning. As the 1981 deadlines draw closer, the same pressures as before will undoubtedly be brought to bear on EPA and Congress, with the likely result that the present deadlines will recede even further into the future or that the emissions standards themselves will be abandoned for more modest goals.

2. Fuel Additives

Automotive fuel contains additives which increase engine performance. The most notorious additive, lead, comprises one-third of particulate emissions from car engines and is a well-known threat to human health.[195] The 1970 Clean Air Act authorized EPA to regulate lead and other fuel additives in order to protect human health,[196] but the petroleum industry has strenuously opposed EPA's efforts.[197] The only successful limitation on lead to date has been the introduction of a separate grade of lead-free gasoline to prevent the breakdown of catalytic converters on new automobiles. This regulation, which became effective only in July, 1974,[198] was sustained over industry protest in *Amoco Oil Co. v. EPA*.[199]

Efforts to phase out lead in all grades of gasoline in the interests of public health (as opposed to the prevention of harm to catalytic converters) has proceeded with much difficulty. EPA's lead emissions standard was finally upheld by a sharply divided court after a series of court battles in *Ethyl Corp. v. EPA*.[200] However, the industry subsequently persuaded EPA that enforcement of the standard would cause serious fuel shortages, so EPA relaxed its enforcement schedule by extending the final deadline and eliminating interim standards.[201]

EPA did not issue a hazardous substance standard for lead in air or in emissions from stationary sources until forced to do so by an environmentalist suit in 1976.[202] Nor has it regulated any other po-

[195] O'Connor, *supra* note 177. The fact that lead is life-threatening, however, had to be reproven by EPA with respect to the effects of inhalation of lead in the ambient air. *See* U.S. COUNCIL ON ENVIRONMENTAL QUALITY, SEVENTH ANNUAL REPORT 9-10 (1976).

[196] 42 U.S.C. § 1857f-6(c)(1970).

[197] *See, e.g.*, Amoco Oil Co. v. EPA, 501 F.2d 722 (D.C. Cir. 1974).

[198] 40 C.F.R. §§ 80.2(g), 80.22, 80.24, 80.25 (1977).

[199] 501 F.2d 722 (D.C. Cir. 1974).

[200] 541 F.2d 1 (1976), *cert. denied* 426 U.S. 941 (1976).

[201] San Francisco Chronicle, Sept. 25, 1976, at 2, col. 4.

[202] NRDC v. Train, 6 ENVIR. L. REP. 20366 (S.D.N.Y. 1976).

tentially dangerous additives besides lead, such as nickel or benzene. In addition, many of the new lead substitutes, such as manganese, are extremely dangerous in their own right, so much so that in 1977 Congress limited the amount of manganese that could be added to fuel and placed the burden of proof on the manufacturer to show that other fuel additives do not harm emission-control devices.[203] However, Congress did not require manufacturers to bear the burden of proving that additives are not harmful to human health—the central question in the debate over fuel additives.

D. Transportation and Urban Growth: Early Planning Strategies

In addition to providing for straightforward emissions controls on industry and motor vehicles, the Clean Air Act also creates the possibility of undertaking more far-reaching planning measures to reduce air pollution.[204] These multi-faceted planning measures have the potential for dealing with the environmental effects of urban-industrial growth as a whole, but they also have the ability to generate the most controversy over the legitimate powers granted by the nominally single-purpose Clean Air Act. Their fate clearly reveals the inherent limitations of the regulatory solution to air pollution: the Clean Air Act appears to be unable to introduce overall urban and economic planning into American society.

Until 1975, the chief planning question revolved around whether government should take an aggressive stance toward land use and transportation decisions in the interest of attaining clean air standards. This question predominantly concerned motor vehicle emissions limitations. It did not, as yet, involve to any significant degree the question of maintaining air quality gains in the face of continuing industrial expansion.[205]

1. Land Use and Transportation Controls — An Introduction

The 1970 Clean Air Act contains two provisions relating to land use and transportation controls. First, it requires that State Plans include the following: "emissions limitations, schedules, and timetables for compliance with such limitations, and such other measures as may be necessary to insure attainment and maintenance of

[203] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 222, 91 Stat. 762 (1977)(to be codified in 42 U.S.C. § 7545).

[204] *See* 42 U.S.C. § 1857c-5(a)(2)(B)(1970).

[205] See Section III (E), *infra* for a discussion of post-1975 developments regarding planning and industrial growth.

primary and secondary standards, including, but not limited to, land use and transportation controls."[206] Second, the Act calls for review of new pollution sources before their construction commences ("pre-construction review"), requiring that the State Plan contain:

> [a] procedure . . . for review, prior to construction or modification, of the *location* of new sources [of pollution, which] shall provide for adequate authority to prevent the construction or modification of any new source to which a standard of performance will apply at any location which the state determines will prevent the attainment or maintenance of a national ambient air quality primary or secondary standard.[207]

The interpretation and enforcement of this authority to control land use and transportation and to review the location of new sources of pollution have generated a heated debate. The controversy has focused on whether EPA and the states only have the legal authority to place specific controls on specific facilities or whether they may perform comprehensive land use planning, including modification of housing, employment and transportation patterns. More fundamentally, there is a question as to whether they can, in practice, do either, given the limited power and purpose of the Clean Air Act.

The legislative history of the Act is inconclusive regarding Congressional intent. The original House version of the Act made no provision for land use controls.[208] The Senate added such a provision, but it was merely designed to prevent interference with the attainment and maintenance of clean air standards.[209] Furthermore, the committee hearings and floor debates give little indication as to how EPA and the states are to administer these controls.[210]

EPA did not take the initiative in enforcing its possible authority over transportation and land use in reviewing initial State Plans. Such reticence may be due partially to the vagueness of EPA's role as defined by Congress and partially to its reluctance to undertake unpopular actions in order to clarify its proper role. In *NRDC v. EPA*,[211] environmentalists sued for enforcement of this portion of the Act, and obtained a ruling that EPA had granted unwarranted extensions of deadlines for submission of transportation control por-

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[206] 42 U.S.C. § 1857c-5(a)(2)(B)(1970).

[207] *Id.* § 1857c-5(a)(2)(D)(emphasis added).

[208] *See* H.R. REP. No. 1146, 91st Cong., 2d Sess. (1971).

[209] *See* S. REP. No. 1196, 91st Cong., 2d Sess. 12 (1970).

[210] For a discussion and references *see* Mandelker & Rothschild, *The Role of Land-Use Controls in Combating Air Pollution Under the Clean Air Act of 1970*, 3 ECOLOGY L.Q. 235 (1973).

[211] 475 F.2d 968 (D.C. Cir. 1973).

tions of State Plans and had given inadequate attention to provisions in State Plans for maintenance of air standards. Although the court stated that air quality maintenance provisions had been inadequate, it did not specify proper measures for maintaining air quality. The confusion over the exact measures required in State Plans was compounded by the decision in *Delaware Citizens for Clean Air, Inc. v. EPA*,[212] which held that land use and transportation controls were not mandated if other measures would suffice to achieve and maintain air standards.[213] Thus EPA was left to devise the means by which air quality maintenance was to be achieved without guidance by either the court or Congress.[214]

Responding to the decision in *NRDC v. EPA*, EPA toughened its stance in 1973 and, after disapproving all portions of State Plans dealing with air quality maintenance,[215] issued new guidelines concerning land use and transportation controls.[216] These guidelines, as initially conceived, would have amounted to "a directive to the states to implement statewide land use controls."[217] Their scope was considerably reduced in the course of the year, however. The final regulations encompassed three main elements:[218] transportation controls;[219] indirect source controls;[220] and air quality maintenance plans (AQMP's). The first two dealt almost entirely with vehicular emissions. The AQMP's were a way of identifying those regions with severe air quality problems which would require extraordinary steps to achieve air standards and maintain them over the following ten years,[221] and, theoretically, encompassed more than transportation and indirect source controls.[222] In practice, however, they have

[212] 480 F.2d 972, 978 n.21 (3d Cir. 1973).

[213] In a later decision, the First Circuit Court of Appeals, in South Terminal Corp. v. EPA, 504 F.2d 646 (1st Cir. 1974), stated that EPA could promulgate regulations resembling local zoning ordinances for the purpose of reducing emissions. *Id.* at 648. Although the decision allowed EPA to designate different areas for different uses, the court did not give EPA the power to prohibit a given facility from locating in an urban area. Yet, whatever the extent of these quasi-zoning powers, they have never been exercised by EPA.

[214] See text at notes 215-24, *infra*.

[215] Danielson, *Control of Complex Emissions Sources — A Step Toward Land Use Planning*, 4 ECOLOGY L.Q. 693, 696 (1975).

[216] 38 Fed. Reg. 6279 (1973).

[217] Danielson, *supra* note 215, at 699.

[218] 38 Fed. Reg. 15,834, 15,836-37 (June 18, 1973)(amending 40 C.F.R. §§ 51.11, 51.18); 38 Fed. Reg. 7323 (March 20, 1973).

[219] See text at notes 225-60, *infra*.

[220] See text at notes 261-76, *infra*.

[221] *See* 38 Fed. Reg. 15,834 (June 18, 1973)(amending 40 C.F.R. §§ 51.11, 51.18). EPA determined that 66 metropolitan areas would require Air Quality Maintenance Plans.

[222] Danielson, *supra* note 215, at 704. See also note 270, *infra*.

served merely as an umbrella within the State Plan process, while the real issues of implementation have been, first, transportation and indirect source controls, and, later, new source performance standards[223] and emissions offsets.[224]

2. Transportation Controls

As previously noted, State Plans were authorized, under the Clean Air Act, to include transportation controls as a means for attaining and maintaining primary and secondary standards.[225] The legislative history of the 1970 Act shows that Congress well understood "transportation controls" to include a variety of possible strategies, such as vehicle maintenance, controls on vehicle use, the alteration of transportation patterns and, consequently, the alteration of spatial patterns of employment, residence and the like.[226]

Since the space-extensive, automobile-intensive nature of most large American cities[227] creates a situation where, even if auto emission standards were met by all new vehicles, ambient air standards would still not be met, and thus supplementary transportation controls are necessary. EPA originally estimated that thirty-one metropolitan areas would not be able to meet air quality standards without special restrictions on traffic; subsequently, it raised the estimate to sixty-three.[228] The Agency calculates that such limitations could lower total auto emissions by almost thirty percent.[229] The biggest offenders and the main test cases for this form of regulation were New York City and Los Angeles, which have by far the worst levels of carbon monoxide and photochemical oxidants, respectively, in the country.[230]

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[223] See text at notes 227-41, *infra*.

[224] See text at notes 334-54, *infra*.

[225] 42 U.S.C. § 1857c-5(a)(2)(B)(1970).

[226] W. RODGERS, *supra* note 16, at 310. What Congress apparently did *not* appreciate was that limiting the use of the automobile is a broad planning question, not a narrow technical concern, and any attempt to restrict drastically the patterns of movement and spatial organization of the city represents a fundamental challenge to American economy and culture through its geography.

[227] *See* Walker & Large, *The Economics of Energy Extravagance*, 4 ECOLOGY L.Q. 963 (1975).

[228] San Francisco Chronicle, Jan. 18, 1977, at 6, col. 3.

[229] *Id.*

[230] Motor vehicles account for 95 percent of carbon monoxide, 65 percent of hydrocarbon, 40 percent of nitrogen oxides and 50 percent of photochemical smog in New York. 5 NRDC NEWSLETTER 2 (Fall 1976). For Los Angeles the figures are 97 percent carbon monoxide, 87 percent hydrocarbon, 75 percent nitrogen oxides, 34 percent particulates and 15 percent sulphur dioxide. Chernow, *Implementing the Clean Air Act in Los Angeles: The Duty to Achieve the Impossible*, 4 ECOLOGY L.Q. 537, 545 n.40 (1975).

Each state had the responsibility for including transportation control strategies in its State Plan. Such strategies were known as the Regional Air Quality Transportation Control Plan (Transportation Plan), and were later included in the overall Air Quality Maintenance Plan approach. Initial steps to implementing transportation controls were not encouraging. First, EPA quickly granted a one-year extension (to January, 1973) for submission of the Transportation Plan.[231] Second, it permitted a two-year extension of the statutory deadlines for achieving ambient standards on automobile related pollutants to those states in which emissions controls on new cars would not be sufficient to attain primary air quality standards.[232] However, the decisions in *Riverside v. Ruckelshaus*[233] and *NRDC v. EPA*,[234] suits brought by local communities and environmentalists, forced a reluctant EPA to implement transportation controls where necessary in order to achieve timely compliance with primary standards. EPA hastily issued proposed regulations[235] demanding new Transportation Plans from the states.

EPA's guidelines for developing a Transportation Plan suggested a large number of possible methods of reducing automobile traffic, including bus and carpool lanes, bridge tolls, restrictions on the number of parking spaces, parking surcharges and even gasoline rationing.[236] These methods fall into three general categories: (1) improvements of traffic flows; (2) increasing car occupancy and use of mass transit; and (3) discouraging passenger vehicle usage altogether.[237]

When the states finally submitted revised Transportation Plans, they invariably either arrived after the extended deadline and/or were woefully inadequate.[238] Only New York City ever submitted an

[231] 37 Fed. Reg. 19,844 (1972).

[232] *Id.*

[233] 4 ERC 1728 (D. Cal. 1972).

[234] 475 F.2d 698 (D.C. Cir. 1973).

[235] 38 Fed. Reg. 6290 (1973); 38 Fed. Reg. 15,834 (1973)(final regulations).

[236] *See* W. RODGERS, *supra* note 16, at 313 n.14. Among the 31 cities which required Transportation Plans, EPA originally estimated that 24 would have to restrict parking, 28 needed retrofitting and maintenance inspections, 19 would have to institute preferential lanes for buses and car-pools, seven to ban cars from some streets, seven to restrict motorcycles, five to limit truck delivery hours, three to have parking surcharges, and 13 to have gasoline rationing. San Francisco Chronicle, Jan. 18, 1977, at 6, col. 4.

[237] These categories are suggested by W. RODGERS, *supra* note 16, at 315. Two features of the Transportation Plans, inspection/retrofitting and vapor control, are peripheral to transportation planning *per se*, and therefore are not discussed in this article.

[238] *Id.* at 313.

acceptable Transportation Plan on its own.[239] Thus, EPA was required to formulate its own stringent measures.

A dramatic example is provided by EPA's experience in Los Angeles.[240] During 1973, the Agency issued three successive Transportation Plans for the Los Angeles basin, whose draconian measures generated a widespread public uproar.[241] Literal enforcement of the Clean Air Act demanded that total vehicle miles traveled in the basin be reduced by approximately eighty percent. EPA initially proposed a gasoline rationing scheme to achieve the reduction,[242] a proposal which, as one observer noted, "the administrator, in order to discharge his duties under the Act, was driven to promulgate [but which] he and everyone else recognized as a patent absurdity."[243] In the final version of the plan, "the strongest and most unpopular anti-driving measures of the earlier proposals were deferred or eliminated."[244] Transportation controls and EPA had succumbed in this crucial confrontation with America's premier automobile city.

In addition, judicial pressure against transportation controls was mounting. In *South Terminal Corp. v. EPA*,[245] the First Circuit Court of Appeals set aside a Transportation Control Plan approved by EPA for the Boston area. The court based its action on a finding that the Agency had not adequately rebutted opponents' claims that the plan was based on isolated and insufficient monitoring data and was otherwise technically flawed. The "court's concern with harsh economic and social impact of the plan was an evident factor in its willingness to probe technical details."[246]

Soon thereafter, Congress intervened in the transportation control controversy through the Energy Supply and Environmental Coordination Act of 1974[247] which amended the Clean Air Act to provide

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[239] 5 NRDC NEWSLETTER 2 (Fall 1976). See text at notes 250-55, *infra*.

[240] For a good discussion of the Los Angeles case, *see* Chernow, *supra* note 230. *See also* Bland, *Smog Control in Los Angeles County: A Critical Analysis of Emission Control Programs*, 28 PROFESSIONAL GEOGRAPHER 283 (1976).

[241] *See* 38 Fed. Reg. 2194, 2195, 2199 (1973); 38 Fed. Reg. 17,683 (1973); 38 Fed. Reg. 31,232 (1973).

[242] Chernow, *supra* note 230, at 550.

[243] *Id.* at 552.

[244] Bland, *supra* note 240, at 286-87.

[245] 504 F.2d 646 (1st Cir. 1973).

[246] Stewart, *Judging the Imponderables of Environmental Policy: Judicial Review Under the Clean Air Act*, in APPROACHES TO CONTROLLING AIR POLLUTION 68, 91 (A. Friedlander, ed. 1978).

[247] Pub. L. No. 93-319, 88 Stat. 246 (1974)(codified in 15 U.S.C. §§ 791-98 (1976) and amending various sections in 42 U.S.C.).

that parking controls could only be enforced with the consent of local government.[248] This statute effectively eliminated the key strategy of parking controls as a part of transportation planning and showed Congress' reluctance to back EPA in this area. Because of this lack of support and because the Clean Air Act deadlines were generally being deferred as 1975 approached,[249] the pressure for transportation controls diminished.

Beginning in 1975, a second round of transportation planning began with New York City at the center of the controversy. In 1973, the Lindsay administration had drawn up a far-reaching and acceptable Transportation Plan, but did not enforce it.[250] Friends of the Earth sued to have the plan implemented.[251] In 1975, EPA reluctantly undertook the task but only succeeded in forcing the city to implement eight of its thirty-seven planned strategies.[252] Friends of the Earth sued again, only to be blocked by a district court which was eventually reversed by the Court of Appeals.[253] The Court of Appeals later forced the city administration, despite its opposition, to take action on the 1973 Transportation Plan.[254] The 1977 Amendments, however, gave the city authority to delete the most controversial part of the plan: tolls on the East River bridges.[255]

Other EPA efforts to mobilize enforcement of transportation controls, without parking surcharges, met with similar difficulty. Several states sued to bar enforcement of Transportation Plans, arguing that specific provisions for traffic controls had to be enacted by the state legislatures and that EPA therefore lacked authority to force the states to adopt such provisons. The states' position was upheld by three courts of appeals.[256] The Supreme Court vacated the lower

[248] *Id.* at § 4(b)(codified in 42 U.S.C. § 1857c-5(2)(c)(1976)).

[249] See text at notes 171-94, *supra.*

[250] 5 NRDC NEWSLETTER 2-3 (Fall 1976). *See also* Friends of the Earth v. EPA, 499 F.2d 1118, 1126 (2d Cir. 1974).

[251] Friends of the Earth v. Wilson, 389 F. Supp. 1394, 1395-96 (S.D.N.Y. 1974).

[252] *See* Friends of the Earth v. Carey, 535 F.2d 165 (2d Cir. 1976).

[253] *Id.*

[254] Friends of the Earth v. Carey, 552 F.2d 25 (1977). *See also* Not Man Apart, at 8, col. 1 (July-Aug. 1977).

[255] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 108(d)(3), 91 Stat. 694, 695 (1977)(to be codified in 42 U.S.C § 7410). Areas with especially severe oxident and carbon monoxide problems may be subject to a deadline extended as late as Dec. 31, 1987. *Id.* § 1296(b), 91 Stat. 745, 746-47 (to be codified in 42 U.S.C. § 7502). The state must submit a plan revision in 1979 requiring implementation of all reasonably available control measures in such an area and a further revision in 1982, if the 1979 measures are insufficient. *Id.* The 1982 revision must require implementation of all available measures to attain the primary standards. *Id.*

[256] *See* Brown v. EPA, 521 F.2d 827 (9th Cir. 1975); Arizona v. EPA, 521 F.2d 825 (9th Cir.

courts' judgments and remanded the proposed Transportation Plans to the appeals courts for consideration of mootness because EPA conceded that its regulations were invalid unless modified.[257] The Court refused the government's invitation to pass upon the EPA regulations because such an action would amount to an "advisory opinion."[258] Thus, the issue of EPA's authority to require such controls was ultimately left unresolved. In the meantime, little had been accomplished.

The actual achievements of transportation planning are few. As of 1977 several states have instituted carpooling incentive programs; some cities have provided special traffic lanes for preferred vehicles; inspection-maintenance programs exist in only three states, while some other states have voluntary programs.[259] As one EPA official admitted, "the fact of the matter is that not a lot has occurred. If a state doesn't have a real commitment for transportation controls, there's not a hell of a lot the EPA can do about it."[260]

3. Indirect Source Controls

The Clean Air Act spawned another land use planning and transportation control strategy commonly known as Indirect Source Control.[261] Indirect sources are those facilities or structures which attract automobiles or other vehicular traffic but do not themselves emit pollutants in significant amounts; they include highways, parking structures, commercial or industrial facilities, sports or recreation complexes, airports and office buildings. Regulation of such sources attempts to control the indirect effects of the siting of new industrial and other large-scale facilities rather than focusing on the impact of their direct emissions.

Indirect source review evolved from the general land use and transportation controls provision of the Clean Air Act, which itself does not explicitly mandate such a measure.[262] The courts initially upheld EPA's authority to institute this sort of control mechanism concurrently with their approval of transportation controls.[263]

1975); District of Columbia v. Train, 521 F.2d 971 (D.C. Cir. 1975); Maryland v. EPA, 530 F.2d 215 (4th Cir. 1975). *All vacated and remanded,* EPA v. Brown, 431 U.S. 99 (1977).

[257] EPA v. Brown, 431 U.S. 99, 102-04 (1977).

[258] *Id.*

[259] San Francisco Chronicle, Jan. 18, 1977, at 6, col. 3.

[260] *Id.*

[261] For a discussion of Indirect Source Controls, *see* Danielson, *supra* note 215.

[262] 42 U.S.C. § 1857c-5(a)(2)(B)(1970). See text at notes 206-24, *supra.* The power to regulate indirect sources falls under new source pre-construction review. Danielson, *supra* note 215, at 697.

[263] *See* South Terminal Corp. v. EPA, 504 F.2d 646 (1st Cir. 1974).

A strong political backlash against indirect source controls arose very quickly as a part of the general antipathy toward all transportation controls, especially parking controls.[264] The courts, which were originally responsible for pushing EPA toward use of such controls, did not subsequently support EPA's efforts. In *Movement Against Destruction v. Volpe*,[265] the United States District Court for the District of Maryland permitted construction of an interstate highway in Baltimore, claiming that the environmentalists had failed to establish that the highway itself would result in violation of air standards. Furthermore, in *Citizen's Association of Georgetown v. Washington, D.C.*[266] the court ruled against specific indirect source controls, judging their impacts to be highly speculative.

At the same time, EPA's regulations regarding indirect source controls themselves proved very controversial and had to be revised six times between April, 1973 and July, 1974.[267] The Agency's original draft guidelines[268] called for virtual statewide land use controls — a measure which was completely unacceptable to most states.[269] Nonetheless, such far-reaching measures are not inconsistent with EPA's statutory mandate. Later revisions yielded much less comprehensive measures, and were confined to vehicular traffic control.[270] Yet, even these weaker regulations were never implemented. States were reluctant to take aggressive action, only three states submitted acceptable AQMP's on schedule,[271] thereby leaving EPA the duty to formulate its own plans. EPA reacted by granting delays in implementation as standard procedure in 1974.[272] Finally, when

[264] In terms of regulating parking facilities, indirect source controls and transportation controls were treated as identical, administratively. W. RODGERS, *supra* note 16, at 327.

[265] 361 F. Supp. 1360, 1401 (D. Md. 1973), *aff'd per curiam*, 500 F.2d 29 (4th Cir. 1974).

[266] 370 F. Supp. 1101 (D.D.C. 1974).

[267] W. RODGERS, *supra* note 16, at 327 n.11.

[268] Danielson, *supra* note 215, at 699.

[269] For example, one of the revisions included an early type of emissions offset plan known as "Net Vehicle Miles Traveled Reduction." 38 Fed. Reg. 29,893 (1973). Under such plan, if a facility, in itself, would promote more efficient automobile activity, or if a compensating reduction in vehicle traffic could be achieved elsewhere in the Air Quality Maintenance Area, then construction could be authorized. Thus, a regional shopping center might qualify under the plan because people would not drive from store to store as they would in strip developments. This plan therefore erodes the impact of indirect source control regulations in the same manner as industrial emissions trade-offs erode stationary source regulation. See text at notes 334-59, *infra*. The Vehicle Miles Traveled trade-off proposal was made in the original substitute regulations, wherein EPA was to impose controls on the states. 38 Fed. Reg. 29,893 (1973). The proposal was, however, dropped in the final substitute regulations. 39 Fed. Reg. 7270 (1974).

[271] Alabama, Florida and Guam. *See* Danielson, *supra* note 215, at 706 n.66. This parallels the failure of states to submit adequate transportation plans. See text at note 238, *supra*.

[272] Danielson, *supra* note 215, at 714. *See also* 39 Fed. Reg. 7272 (1974).

Congress terminated all appropriations to EPA for the purpose of administering "any program to tax, limit, or otherwise regulate parking facilities"[273] the Agency was forced to suspend review of indirect source controls.[274] This termination was consistent with its action in the Energy Supply and Environmental Cooordination Act of 1974 which prevented EPA from requiring parking surcharge regulation as a part of a State Plan.[275] Finally, in 1977, the Clean Air Amendments formally eliminated indirect source controls by rendering such reviews strictly voluntary on the part of the states.[276]

E. Accomodating Industrial Growth: Current Approaches

In drafting the 1970 Clean Air Act, Congress clearly foresaw that, to realize and maintain ambient air standards, it would not be sufficient merely to clean up existing industries; pollution control efforts would have to deal with new factories. To force industry to adopt fundamental changes in production, Congress mandated standards for new facilities, called New Source Performance Standards (NSPS), which were more stringent than those for existing facilities.[277] Congress also gave responsibility for NSPS enforcement directly to EPA, rather than to the states through the State Plan process, but this power could (and has been) delegated to the states.[278] NSPS regulation, therefore, intersects with state powers of "pre-construction review"[279] and is part of state planning to achieve and maintain ambient air standards. Thus, the State Plans and NSPS considered together provide a foundation for strict location and emissions control over new sources, as well as the opportunity for supplementary planning.

The planning process itself divides into two parts, depending on the prevailing air quality: certain regulations control new sources locating in areas with air cleaner than primary standards, while others are applicable to those moving into areas with air worse than the standards. The former comes under the heading of "non-

[273] *See* Danielson, *supra* note 215, at 714 (quoting Section 510 of H.R. 16901, 93d Cong., 2d Sess. (1975)).

[274] *See* 39 Fed. Reg. 45,014 (1974)(amending 40 C.F.R. § 52.22 (1974)). *See also* Danielson, *supra* note 215, at 737 n.222.

[275] Pub. L. No. 93-319, § 4(b)(2)(B), 88 Stat. 257 (1974)(codified in 42 U.S.C. § 1857c-5(c)(2)(B)(1976).

[276] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 108(e), 91 Stat. 695 (1977)(to be codified in 42 U.S.C. § 7410).

[277] *See* 42 U.S.C. § 1857c-6 (1970).

[278] See note 38, *supra*.

[279] See text at note 207, *supra*.

degradation" policy and the latter falls under the rubric of air quality maintenance planning[280] and emissions offsets.

Growth control and land use planning with respect to industry were, therefore, within the scope of clean air regulation from the beginning.[281] Yet, for several years these powers lay relatively dormant, and land use planning efforts were confined to indirect source controls.[282] Furthermore, EPA did not issue a significant number of NSPS up to 1976.[283] Prior to 1975, the main issue with respect to industrial emissions was achieving compliance from existing stationary sources; concern with growth had not yet reached the forefront. The erosion of the Act up to this time consists of the absence of significant action by the regulators. Since 1975, however, the unavoidable conflict between industrial growth and air quality maintenance has precipitated a process of erosion of the Clean Air Act to accommodate growth. EPA and Congress have allowed industry (chiefly power plants) to move into previously pristine airsheds in rural areas by weakening the "non-degradation" policy.[284] They also permitted industry to locate or expand in metropolitan areas which have not yet attained ambient air standards by instituting a new policy of emissions offsets[285] and by pushing back attainment deadlines.[286] This erosion of the Clean Air Act finally crystallized in the 1977 Amendments, which generally serve to legitimate the policy changes that EPA had gradually been putting into practice in its long process of accommodation.[287]

1. New Source Performance Standards

EPA has been very slow in promulgating New Source Performance Standards (NSPS) for new pollution sources. By the initial deadline in 1971, EPA had issued only five categories of standards, seven more were added in 1974 and twelve in 1976.[288] Thus, the majority of new industrial plants have not been affected by NSPS, and some important polluters (petrochemical facilities, for example) have yet to be regulated. Congress demonstrated its impatience

[280] Regarding Air Quality Maintenance Plans, see text at notes 215-24, *supra*.

[281] *See* 42 U.S.C. §§ 1857c-5(a)(2)(B), (D)(1970).

[282] See text at notes 261-76, *supra*.

[283] See text at notes 288-90, *infra*.

[284] See text at notes 302-33, *infra*.

[285] See text at notes 334-54, *infra*.

[286] See text at notes 162-68, *supra*.

[287] EPA finally issued more NSPS and was pushed farther by Congress; but the degree of erosion of the standards themselves is still moot. See text at notes 288-301, *infra*.

[288] *See* W. RODGERS, *supra* note 16, at 268; 43 Fed. Reg. 42,186 (1978).

in the 1977 Amendments by ordering all remaining standards to be issued within four years.[289] The slowness in the promulgation of these standards is probably a major reason why NSPS have only recently become the focus of overt struggle over government policy.[290]

Controversy over NSPS has been limited for additional reasons. First, many new sources have escaped regulation because either EPA has determined that certain modifications of existing plants have not been substantial enough to be classified as new sources,[291] or because EPA has allowed modifications to be exempt from NSPS if other parts of the plant are closed so that net emissions levels are unchanged.[292] The latter actions by EPA amounted to an early form of emissions offsets policy.[293] Second, the Clean Air Act requires economic and technological balancing with respect to new sources — a requirement not found elsewhere in the Act. Such a provision probably contributed to industry quiescence with respect to NSPS, because the balancing process produced standards less stringent than they otherwise would have been. Finally, the cost of pollution control is not as significant a factor in new plants as the cost of retrofitting is in old facilities.[294]

When industry challenged the first set of NSPS, issued in 1971, the court, in *Portland Cement Association v. Ruckelshaus*,[295] upheld the requirement for a "standard of performance" which reflects the "application of the best system of emission reduction which (taking into account the cost of achieving such reduction) the Administrator determines has been adequately demonstrated"[296] and which would encourage development and force implementation of innovative technical approaches to solve pollution problems. Nonetheless, the court did agree that EPA should consider economic impacts as

[289] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 109(a), 91 Stat. 697 (1977) (to be codified in 42 U.S.C. § 7411).

[290] *Cf., e.g.*, 43 Fed. Reg. 4218 (1978). Furthermore, there is direct evidence which demonstrates that NSPS will be the next major source of conflict between industry and environmentalists. For example, on January 15, 1979, the California Council for Economic and Environmental Balance, a major industrial lobbying group, held a conference in San Francisco explicitly to consider strategies for industry in dealing with the Clean Air Act. At this conference the NSPS were under intense attack from such prominent figures as William Ruckelshaus, former EPA Administrator.

[291] W. RODGERS, *supra* note 16, at 273.

[292] *Id.*

[293] Kramer, *supra* note 4, at 170.

[294] J. BOOTHE, CLEANING UP: THE COSTS OF REFINERY POLLUTION CONTROL 37, 48 (1975).

[295] 486 F.2d 375, 385 (D.C. Cir. 1973).

[296] 42 U.S.C. § 1857c-6(a)(1)(1970).

well.[297] The court remanded the record to EPA for further proceedings[298] and EPA repromulgated the original standards[299] which were then upheld in *Portland Cement Association v. Train.*[300] Even if the outcome of *Portland Cement* is seen as a victory for defenders of the Act, legal actions by industry have definitely succeeded in delaying enforcement of the original NSPS until 1975 and also appear to have made EPA more cautious in formulating the standards.[301] Yet, on the whole, it is too early to judge what the full impact of NSPS will be. Since the standards have only recently become a significant matter of controversy between industry and EPA, their part in the erosion of the Clean Air Act is still undetermined.

2. Non-Degradation

Non-degradation policy applies to geographic areas with air that is cleaner than required by secondary ambient air standards, but which are threatened with deterioration of their air quality because of the influx of industry and accompanying urbanization. The policy thus almost entirely involves rural areas — from the urban fringe of large cities to undeveloped reaches of the West covering approximately fifty to eighty percent of the country.[302] Since the rate of industrial growth is presently the greatest in these rural areas,[303] the controversy over non-degradation is particularly acute. Indeed, many of the industries in question have moved into relatively "pristine" areas precisely in order to avoid clean air regulations which apply in highly polluted metropolitan centers.[304] The most dramatic example of this phenomenon, and the one creating most of the non-degradation controversy, is the invasion of the Colorado Plateau region by coal-fired generating plants which chiefly serve Los Angeles. A strictly enforced non-degradation policy would end, or at least slow, industrial development throughout the country,

[297] 486 F.2d at 387-88. The court implicitly directed EPA to examine the proposed standards' effects on subdivisions of the current market. Kramer, *supra* note 4, at 205-06; W. RODGERS, *supra* note 16, at 271.

[298] Portland Cement Assoc. v. Ruckelshaus, 486 F.2d 375, 402 (D.C. Cir. 1973).

[299] 39 Fed. Reg. 39,872 (1974).

[300] 513 F.2d 506 (D.C. Cir. 1975), *cert. denied,* 423 U.S. 1025 (1975).

[301] *See* Kramer, *supra* note 4, at 209.

[302] Disselhorst, *Sierra Club v. Ruckelshaus On A Clear Day . . .*, 4 ECOLOGY L.Q. 739, 740 (1975). *See also* NATURAL RESOURCES DEFENSE COUNCIL, COMMENTS ON PROPOSED RULES FOR PREVENTION OF SIGNIFICANT AIR QUALITY DETERIORATION 18 (June 20, 1973).

[303] *See* G. STERNLIEB & J. HUGHES, POST-INDUSTRIAL AMERICA: METROPOLITAN DECLINE AND INTERREGIONAL JOBSHIFTS (1976).

[304] EPA and undeveloped states have strongly supported such a policy of dispersion of industry. Disselhorst, *supra* note 302, at 741 n.14.

since even a single powerplant in an area such as the Colorado Plateau dramatically lowers air quality.[305] Industry could conceivably be told not only how and where to build, but whether it could build at all.

The struggle over definition and implementation of a non-degradation policy has demonstrated the inability or unwillingness of government regulators to grapple with an issue of this magnitude.[306] The policy of non-degradation, also called "prevention of significant deterioration," originally emerged as an administrative interpretation by the Department of Health, Education and Welfare (HEW)[307] of the 1967 Air Quality Act's statement of Congressional intent "to protect and enhance the quality of the nation's air resources"[308] — language subsequently reenacted in the 1970 Clean Air Act.[309] The legislative history of the 1970 Act suggests that Congress intended a policy of non-degradation.[310] However, Congress did not explicitly provide for a program to prevent significant deterioration, and appears not to have comprehended the magnitude or complexity of the task which such a policy presented to EPA.

Originally EPA refused to follow the policy established by HEW in interpreting the non-degradation language. When EPA issued administrative guidelines in 1971, it ruled that the emissions limitations contained in NSPS were sufficient to prevent significant deterioration. However, EPA's position was untenable.[311] Even Congress

[305] Craig, *Cloud on the Desert*, 13 ENVIRONMENT 20 (1971).

[306] On the origins of non-degradation policy *see* Jorling, *The Federal Law of Air Pollution Control*, in FEDERAL ENVIRONMENTAL LAW 1058, 1078-82 (E. Dolgin & T. Guilbert eds. 1974).

[307] HEW preceded EPA as the agency administering federal air regulation. EPA was created in 1970 and assumed HEW's duties with respect to air regulation. *See* Reorganization Plan No. 3 of 1970, § 2(a)(3), 5 U.S.C. App. II (1976), 84 Stat. 2086, 35 Fed. Reg. 15,623 (1970).

[308] Pub. L. No. 90-148, 81 Stat. 485 (1967). Why did HEW feel free to interpret the Act as requiring a non-degradation policy when broadening of regulatory power is uncharacteristic of federal agencies? The likely reason is that there was no legal or administrative machinery at the time capable of enforcing any federal ambient standards or non-degradation policy. Thus, the policy did not represent any threat. *See, e.g., Hearings on Air Pollution Before the Senate Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works*, 91st Cong., 2d Sess. 68-1533 (1970)(testimony on various proposed air quality amendments which contained enforcement provisions).

[309] 42 U.S.C. § 1857(b)(1)(1970).

[310] Kramer, *supra* note 4, at 222-23.

[311] NSPS do not account for the cumulative impact of new facilities. Mihaly, *The Clean Air Act and The Concept of Non-Degradation: Sierra Club v. Ruckelshaus*, 2 ECOLOGY L.Q. 801 (1972). Nor do they account for the overall impacts of industry-induced development, traffic, etc. NSPS are based on the best technology in current use, which still may allow considerable emissions relative to the purity of air in some areas. Finally, the NSPS do not cover all types of emissions and all industries, particularly given EPA's tardy promulgation of guidelines. See text at notes 288-90, *supra*.

recognized that the Act was threatened by such administrative interpretations.[312] Congress conducted oversight hearings in an attempt to force EPA to obey the law. The hearings revealed that the agency simply refused to implement the policy which had been created by its predecessor, affirmed by the legislative history of the 1970 Act and understood by its officials during 1970-71; EPA had attempted unilaterally to rewrite the law. An ironic switch in roles ensued as Congress attempted to implement its own legislation in spite of administrative attempts to subvert it.[313]

Finally, in *Sierra Club v. Ruckelshaus*,[314] the District Court for the District of Columbia upheld the original HEW interpretation of the Act and prevented EPA from approving portions of any State Plan which allowed significant deterioration of air quality. The United States Supreme Court affirmed the lower court ruling on the interpretation.[315] In 1973, following the Supreme Court's ruling, EPA proposed new non-degradation rules. However, even these new proposed rules exhibited EPA's reluctance to carry out the law. The preamble to the regulations states that the issue is so complex and its implications so profound that it "must be discussed, debated and decided as a public policy issue, with full consideration of its economic and social implications."[316] It argues that other tools of the Clean Air Act are sufficient to prevent deterioration below ambient air standards, stating that "it is not within the province of EPA . . . to impose limitations on the Nation's growth," and that "[t]o establish a policy that new emissions can only be introduced to the extent that current emissions are reduced would forever relegate these [clean air] areas to an essentially undeveloped status."[317] The Agency preamble appears to be a statement to Congress that EPA neither understood nor desired the consequences of a non-degradation policy. In fact, EPA thereby created political momentum for elimination of the policy by statute.

Ultimately, in order to carry out its non-degradation mandate, EPA developed an Area Classification System in 1974.[318] This plan

[312] Mihaly, *supra* note 311, at 819-22.

[313] *Hearings on Implementation of the Clean Air Act Amendments of 1970 Before the Subcomm. on Air and Water Pollution of the Senate Public Works Comm.*, 92d Cong., 2d Sess. 14-15 (1972)(comments of Senator Eagleton). For EPA's position *see* 40 C.F.R. §§ 50.2(c), 51.12(b) (1972).

[314] 344 F. Supp. 253 (D. D.C. 1972).

[315] Fri v. Sierra Club, 412 U.S. 541 (1973).

[316] 38 Fed. Reg. 18,986 (1973).

[317] *Id.* at 18,987-88.

[318] 39 Fed. Reg. 31,000 (1974). On the evolution of the final plan *see* Disselhorst, *supra* note 302.

categorized areas into three possible land designations. All areas are initially deemed to be Class II, which would allow a moderate degree of deterioration of existing air quality and a "reasonable amount" of industry, sufficiently dispersed.[319] Lands may then be designated upward to Class I, in order to protect areas of exceptional scenic, recreational or ecological value, or downward to Class III, in which deterioration could proceed down to the level of the secondary standards. EPA stated that redesignation to Class III should take place in areas "intended to experience rapid and major industrial or commercial expansion . . . . "[320] In other words, by segmenting clean air areas into various classes, EPA was able to soften the nondegradation policy for all but the most select areas and to abandon it altogether in the case of Class III lands.[321]

In *Sierra Club v. EPA*,[322] the United States Court of Appeals for the District of Columbia upheld this new policy against the attacks of environmentalists. In the 1977 Clean Air Amendments, Congress enacted EPA's policy into law, although with some slight modifications.[323] Congress improved EPA's policy by automatically designating all large national parks and wilderness areas as Class I lands;[324] expanding the number of types of sources which must undergo preconstruction review from nineteen to all major facilities;[325] requiring "best available control technology" for all types of pollutants;[326] and opening all permit applications to public hearings.[327] However, not all of Congress' actions were improvements. First, the notorious Breaux Amendment, offered in the interests of the proposed Intermountain Power Project in Utah, allows a governor to request a variance from Class I standards for up to eighteen days a year.[328]

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[319] 39 Fed. Reg. 31,004 (1974).

[320] *Id.*

[321] Critics of EPA's position were also concerned with several specific elements: (1) the critical "baseline" year from which deterioration is measured was moved back from 1972 to 1974, allowing prior sources to escape review and lowering baseline air quality that much more; (2) only two pollutants, SO_2 and particulates, were subject to review; (3) new sources were required only to adopt "best available control technology" (BACT), a standard involving substantial economic and technical balancing. The BACT had, however, to be better than the relevant NSPS, where one exists; (4) only major sources, of 100 tons annual emissions, were to be reviewed; (5) the permit process was closed to all but written comments from the public. See Kramer, *supra* note 4, 228-29.

[322] 540 F.2d 1114 (D.C. Cir. 1976).

[323] Pub. L. No. 95-95, 91 Stat. 685 (1977)(to be codified in 42 U.S.C. §§ 7470 *et seq.*).

[324] *Id.* § 127, 91 Stat. 731 (to be codified in 42 U.S.C. § 7472).

[325] *Id.*, 91 Stat. 735 (to be codified in 42 U.S.C. § 7475).

[326] *Id.*, 91 Stat. 736.

[327] *Id.*, 91 Stat. 736-37.

[328] *Id.*, 91 Stat. 737-38.

Such a variance could cause "substantial deterioration" of pristine areas, according to Senator Gary Hart.[329] Second, a federal land manager can ask the state to permit construction of a plant in a Class I area if, in his judgment, it will not have an adverse effect on air quality.[330] Third, the legislation seems to have created the general belief that Class I designation is limited solely to federal recreation lands, and then not necessarily to all such lands. Fourth, the tougher Congressional provisions, except for the automatic designation of certain areas as Class I lands, do not pre-empt existing EPA regulations until such time as the states revise their State Plans in light of the new regulations.[331] And, perhaps most importantly, since the standard from which deterioration is measured is defined as existing air quality at the time a permit application is filed,[332] the standard will necessarily be lowered over time since each new source will reduce air quality somewhat, and the next permit applicant consequently will have a lower standard to meet.

In any event, the new non-degradation policy continues the traditional American practice of land management: protect certain select areas called "parks" and leave the rest to commercial use and abuse.[333] If industry did not get exactly what it wanted in this fight, it did gain the crucial enclaves necessary to new urban-industrial growth in the form of Class III lands. In the process, government once again abdicated any positive land use planning, adopting a defensive position around its Class I parks and limiting its expectations to the attainment of secondary standards in Class II and III areas.

3. Non-Attainment and Air Trade-Offs

The new air trade-offs policy, adopted by EPA in 1976[334] and ratified by Congress in 1977,[335] poses most clearly the question of whether the Clean Air Act can triumph in a confrontation with urban-industrial growth. The regulators seem to believe that it cannot. The practical issue facing government is how to accommodate

[329] Congressional Quarterly, Aug. 6, 1977, at 1631.

[330] Pub. L. No. 95-95, § 127, 91 Stat. 736-37 (to be codified in 42 U.S.C. § 7475).

[331] Pub. L. No. 95-95, § 127, 91 Stat. 740 (to be codified in 42 U.S.C. § 7478).

[332] *Id.*, 91 Stat. 741 (to be codified in 42 U.S.C. § 7479).

[333] *See generally* R. Walker, The Suburban Solution (1977), unpublished Ph.D. Dissertation, Baltimore, Johns Hopkins University (available from University Microfilm, Ann Arbor, Michigan and at Johns Hopkins University library).

[334] *See* 41 Fed. Reg. 55,524 (1976); San Francisco Chroncile, Dec. 21, 1976, at 6, col. 2.

[335] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 129(b), 91 Stat. 745, 748 (1977)(to be codified in 42 U.S.C. § 7503).

industrial growth in air quality regions that have not attained primary air standards, which means all big metropolitan areas except Honolulu.[336] Emissions offsets were devised as a strategy to reconcile the conflicting demands of industrial growth and clean air standards. The basic idea behind the policy is as follows: a new facility can locate or an existing plant can be expanded in a non-attainment area only if (1) the new source meets the "lowest achievable emission rate" (which must, in any case, be less than the applicable NSPS for that industry); (2) a reduction of allowable emissions by existing sources is secured so that there is a net reduction in total emissions in the area, and this reduction constitutes "reasonable progress" toward the 1982 attainment deadline; and (3) all other facilities of the company in the state are in compliance or on schedule under the State Plan.[337] Although this policy appears reasonable on its face, an understanding of the steps by which it came into being and of the weakness of the law as written reveals that the air trade-offs policy is in fact a step backward in enforcement of the Clean Air Act — a tactical retreat by the states, EPA and Congress.

Read literally, the Clean Air Act would appear virtually to prohibit any new sources until air quality standards were met.[338] The Act provides that every State Plan have rules for pre-construction review of new stationary sources to assure that they do not conflict with efforts to achieve primary ambient air standards.[339] Pre-construction (or "new source") review subsequently became part of EPA's Air Quality Maintenance Plan (AQMP) enforcement program.[340] Nonetheless, EPA did not issue guidelines for new source review until 1976.[341] During this time, new industrial growth continued to exacerbate the pollution problem in metropolitan areas.

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[336] See text at note 45, *supra*.

[337] *See* Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 129(b), 91 Stat. 745, 748 (1977)(to be codified in 42 U.S.C. § 7503).

[338] The 1970 Senate Report on the Clean Air Act seems to have anticipated exactly this sort of prohibition when it said that the State Plan must have a review process to:

> insure that any existing or future stationary source of air pollution will be located, designed, constructed, equipped, and operated . . . so as not to interfere with the implementation, maintenance, and enforcement of any applicable air quality standard or goal. . . . In air quality regions where present air quality is below the standard, rigorous restrictions must be placed on existing sources to provide a margin for future growth, or only pollution free growth, development and expansion will be possible.

S. REP. No. 1196, 91st Cong., 2d Sess. 11-12 (1970).

[339] See text at notes 206-07, *supra*.

[340] See text at notes 215-24, *supra*.

[341] 41 Fed. Reg. 55,528 (1976)(interpretive ruling for implementation of the requirements of 40 C.F.R. § 51.18).

The matter climaxed when industry sought to locate two large and controversial facilities in polluted air basins in California: Dow Chemical Company's proposed petrochemical complex in Solano County near San Francisco and Standard of Ohio's (SOHIO) proposed oil terminal and pipeline in Long Beach.[342] The Bay Area Air Pollution Control District triggered statewide controversy when it refused to grant a permit to Dow.[343] Although SOHIO's permit application had not been formally rejected, its chances for approval were obviously slim. In response to the uproar of business opposition to these principled stands, however, the regulations began to be loosened.[344]

The California Air Resources Board initiated the retreat by adopting new source review rules for the Southern California Air Pollution Control District which embodied the trade-off idea in order specifically to accommodate SOHIO.[345] EPA subsequently issued an "interpretive ruling" which made trade-offs national policy.[346] Then, after Dow withdrew its permit request, a California Assembly member introduced a bill to make trade-offs state policy.[347] Trade-offs subsequently became federal law with passage of the 1977 Amendments.[348]

While this national trade-offs policy is considerably more restrictive than that first embodied in the California Air Resources Board's rule, it also remains dangerously vague on several critical issues involving the implementation of emissions offsets.[349] First, Congress does not specify the ratio of existing pollution which may be traded for pollution from new industry; yet, if the ratio is not significantly greater than one-to-one, the trade-off will make no progress toward meeting standards. Congress only asks that "reasonable further progress" be made toward reaching the 1982 goal,[350] a vague mandate that is representative of the weak prescriptions which the firm deadlines of the 1970 Act sought to

[342] For a history and discussion of air trade-offs in California *see* Alfandary, *Air Trade-Offs: Attempting to Reconcile Industrial Growth and Clean Air in California*, 18 PUB. AFF. REP. 1-7 (1978).

[343] Walker, Storper & Gersh, *The Limits of Environmental Control: The Saga of Dow in the Delta*, to be published in 11 ANTIPODE (1979).

[344] *Id.*

[345] California Air Resources Bd., Rule 213(3). Resolution #79-39, Oct. 8, 1976.

[346] *See* 41 Fed. Reg. 55,524 (1976); San Francisco Chronicle, Dec. 21, 1976, at 6, col. 2.

[347] AB 471, introduced Feb. 10, 1977, amended April 26, 1977 and Aug. 5, 1977.

[348] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 129(b), 91 Stat. 745, 748 (1977)(to be codified in 42 U.S.C. § 7503).

[349] *See* Alfandary, *supra* note 342, at 5.

[350] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 129(b), 91 Stat. 745, 748 (1977) (to be codified in 42 U.S.C. § 7503(1)(A)).

overcome. Second, Congress is silent with respect to the size of regions within which trade-offs may be made. It is possible that sources far apart can substitute for one another, regardless of the real impact on the population in the area. Under such loose restrictions new industries may search out the most readily abated sources of pollution, regardless of how they relate to the problem posed by the new facility, leaving the most difficult and expensive pollution problems to be solved under State Plans. EPA is aware of this problem, but has merely asked states to use a "reasonable cutoff on the geographic content of the air quality calculations."[351] Third, EPA limited new source review to only those sources emitting more than 100 tons of pollutants a year.[352] The limitation allows many significant polluters to escape review and is especially worrisome in the instance of "staged" construction of large facilities such as petrochemical plants, wherein the complete facility may emit more than 100 tons, but no single individual stage would emit 100 tons; if each "stage" is the relevant unit, the facility could escape new source review. Fourth, Congress based the trade-off potential of existing facilities on their allowable, rather than their actual, emissions.[353] Since some facilities are not polluting up the maximum limits allowed by law, they may either trade-off "paper pollution" or deliberately increase their emissions in order to have more pollution to trade-off in the future. With the poor record of enforcement of existing State Plans, it is likely that there will be an even greater future divergence between Plans and reality under this policy. Finally, neither Congress nor EPA demanded that the old source be shut down before construction of the new one begins. Thus, once the new facility is in place, industry can balk at compliance for years. The dispute between the Bay Area Air Pollution Control District and Standard Oil of California's Richmond refinery may be an omen; Standard Oil reneged on an agreement to shut down two older units while at the same time it began operating a new one.[354]

Unless stringent conditions are set for emissions offsets and unless such conditions are met in practice, the new air trade-offs policy will mean that primary air standards will never be met in the face of continued urban-industrial growth.

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[351] 41 Fed. Reg. 55,526 (1976).

[352] *Id.* at 55,558.

[353] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 129(b), 91 Stat. 745, 748 (1977)(to be codified in 42 U.S.C. § 7503(1)(A)).

[354] *See* San Francisco Examiner, May 15, 1977, at 1; San Francisco Chroncile, July 8, 1978, at 2, col. 1.

F. Summation: Stages of Erosion

The preceding review of the erosion of the Clean Air Act is familiar to those who have watched the progress of the law over time, although some of the matters described are subject to interpretation regarding their impact on the Act's successful implementation and the realization of clean air in the long run. This article adopts a pessimistic view toward the ultimate effectiveness of the Act. Only time will vindicate or reprove this view. However, the legacy of past failures, which began before 1970,[355] leaves little confidence in the future attainment of the 1970 Act's goals.

The chronology of the Act's rise and fall divides into stages, separated by the major legislative interventions of Congress. From 1963 to 1970, timid actions by Congress could not placate the growing concern over worsening air quality and public exasperation with the futility of weak legislation. The 1970 Clean Air Act resulted.

The 1970 Act marked a new stage of development. EPA, environmentalists and industry were all involved in the great experiment. Although erosion of the Act began immediately, it did not become decisive until 1973-74 when major crises struck energy supplies, the automobile industry and the economy in general.[356] Congress reacted with the Energy Supply and Environmental Coordination Act of 1974, which formalized EPA's delaying actions, further delayed auto emission deadlines, virtually ended EPA's efforts to institute transportation controls and initiated a coal-based energy policy which runs directly against the interests of clean air. As the original target year of 1975 passed, the Act's goals had been deemed unrealistic and unenforceable, and most of its deadlines were waived.

After a brief respite, pressure against the Act began building once again. The pressure came from several quarters: the new deadlines were approaching, the continuing recession placed economic burdens on major polluting industries such as electric utilities and steel, certain industries sought to locate in new areas such as the Colorado Plateau, industry launched a new wave of investment in plants in metropolitan areas and corporations, labor and others developed a fear of "no-growth" policies which evolved at a time of economic stagnation.[357] The predictable result was that in 1976-77, Congress once again amended the Clean Air Act.

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[355] *See* J. ESPOSITO, *supra* note 6.

[356] *See* Walker & Large, *supra* note 227.

[357] For a discussion of these forces see text at notes 368-417, *infra*. *See also* Walker, Storper & Gersh, *supra* note 343.

The new Amendments released the growing political and economic pressure against compliance measures by such means as the delay of auto emission deadlines, the policy of allowing significant deterioration of air quality in certain geographic areas, the use of emissions offsets which allowed growth in non-attainment areas and the delay of State Plan deadlines which legitimized non-attainment of standards and non-compliance with the Plans. Senator Edmund Muskie summarized the erosion of the Clean Air Act by the 1977 Amendments in these terms:

> All in all, Mr. President, this bill represents something less than that which we set out to do in 1970. Under this legislation, the Administrator of the Environmental Protection Agency will have fewer tools to accomplish the job of protecting America's health and welfare from the threat of air pollution . . . . So, Mr. President, we begin again.[358]

The enactment of the 1977 Amendments commences yet another stage in the evolution of the Clean Air Act. It is likely that pressure will again mount for a relaxation of standards and deadlines as the general revised target date of 1982 approaches; suits will be filed, EPA will take various actions, states will respond and, in all probability, Congress will have to re-enter the arena to clarify *de facto* policies.

This is not to say that all the goals and means for attaining such goals in the 1970 Act have been abandoned or that progress in cleaning the air may not actually continue to be made. But if past experience is any guide, promises of future compliance — of making "reasonable progress" toward clean air — are not very reassuring. In fact, the preceding examination of the Act's history indicates that the pressures to restrict enforcement of the Act are deeply rooted in the basic political and economic relationships of our society. In the next three sections this article will examine some of these relationships in order to describe the systematic forces arrayed against cleaning up the air.

IV. The Role of Government in the Failure of Regulation

Although the preceding discussion documents the systematic erosion of the Clean Air Act, it does not explain why that erosion occurred. By attending too closely to the "law" as such, one will deal only with formal results and apparent causes. The form of the law directs one's attention to the stated ideas and logical reasoning of

[358] 123 Cong. Rec. S13,696-97 (daily ed. Aug. 4, 1977)(remarks of Sen. Muskie).

decision-makers in the various branches of government. Thus, most critics of the erosion of the Clean Air Act ascribe the failure of "law" to a failure of judicial logic or administrative willpower.[359] However, this kind of reasoning forcibly extracts individuals, ideas, the legal system and government as a whole from their real social context in an unsupportable manner.[360] In order to ferret out the underlying causes of social outcomes, one must address the material forces of political and economic life which impinge upon the formal, legal decisions of government agents. This is not to say that ideas and wills do not enter into the process, but rather that they are ideas and wills of real people, in and out of government, who are grounded in real class positions, real social roles and a real economic system with its own distinct requirements for successful reproduction.[361] Considerations of self-interest, expertise, personal judgment and legal consistency all play a part, but always with respect to the restraints inherent in the functioning of the larger social structure.

Government is neither independent from society, nor is it a neutral arbiter in social conflict. Its institutions, personnel and policies are all arenas of social struggle. Indeed, governments only come into being through an historical process of political conflict over what needs doing and how it should be done.[362] Any specific effort to control social life and the economy which government undertakes, be it through the regulatory process, the consideration of a bill in Congress or the institution of enforcement proceedings against violators, necessarily contains ongoing conflict over means and ends.[363]

The personnel of regulatory agencies act under varying degrees of influence from two general types of political forces: (1) *external* pressures exerted on them directly by lobbying, threats and promises by the powerful, legal suits, mass political protest, voting and so forth; and (2) *internal* forces, generated within each person by his/her own judgment regarding the meaning of laws, by his/her own beliefs as to what is right and proper or by his/her own understand-

[359] *See, e.g.*, Kramer, *supra* note 4.

[360] On the material structural analysis of society, *see* D. HARVEY, SOCIAL JUSTICE AND THE CITY (1973).

[361] On the relation of individual ideas and will to society and its roles, *see* R. WILLIAMS, MARXISM AND LITERATURE (1978); R. BERNSTEIN, THE RESTRUCTURING OF SOCIAL AND POLITICAL THEORY (1976); R. PARK, THE IDEA OF SOCIAL STRUCTURE (1974); D. HARVEY, *supra* note 360.

[362] *See generally* Esping-Anderson, Friedland & Wright, *Modes of Class Struggle and the Capitalist State*, KAPITALISTATE 186 (Summer 1976).

[363] On the idea of government policy as process *see* W. DOMHOFF, WHO REALLY GOVERNS (1976); J.L. DAVIES & B. DAVIES, *supra* note 6; P. BACHRACH & M. BARATZ, POWER AND POVERTY (1970).

ing as to what it is possible to do under prevailing social conditions. "Internalized" forces are, of course, not random, but are conditioned by several external social mechanisms: by a pervasive ideology which provides a definite view of how the world works and how it ought to work, by a previously established system of law, by the threat of external intervention if the wrong action is taken and by an operating economic system which gives clear signals of distress when government pushes too hard. The preceding arguments serve to break down the practical distinction between abstract "policy" and actual "implementation" when agencies must choose how to interpret the broad rules handed down to them, when the courts, the President's office and states react and interact with agency actions and, finally, when Congress reconsiders its proclamations in light of actual implementation efforts. Similarly, clean lines between "government" and "the private sector" do not exist, not only because government personnel—particularly the leadership[364] — move freely back and forth between public and private life, but also because the general "pressures and limits"[365] of social and economic reproduction impinge on government and citizenry alike.

Moreover, constant reconsideration of regulatory measures is necessitated not only by changing economic and political circumstances, but also because sectors of society rarely know unambiguously what their interests are, or what is possible within the realm of political change. Hence, government policies, especially reform efforts such as the Clean Air Act, are very much *experiments* in limited change. Such experiments are undertaken in a highly politicized setting where outlines of political power, economic imperatives and ideological motivation are already established. The virtue of the Clean Air Act as a case study in regulatory experiment and failure is that it provides a good step-by-step history of the dismantling of initial goals which turned out to be "unrealistic" in terms of the subsequent impacts they actually had, or threatened to produce, on the economy.[366]

The relatively loose structure of the representative and federal forms of government are quite useful for societal adaptability and

[364] W. DOMHOFF, THE POWERS THAT BE (1978); R. MILIBAND, THE STATE IN CAPITALIST SOCIETY (1969).

[365] The phrase is from Williams, *supra* note 36, at 87.

[366] In this case the law has not stood in isolation from reality owing to tacit non-enforcement as is often the case. It has, instead, had to be openly modified over time in light of efforts to enforce it. This outcome owes much to the constant prodding of the government by environmentalists armed with the right to sue for non-action — one of the many progressive features of the Act itself. See text at note 29, *supra*.

long-term stability because it provides a degree of access to power by various interests and a way to experiment with social change.[367] Nonetheless, it cannot guarantee that such experiments will succeed. The Clean Air Act had to be modified because government could not resolve harmoniously the conflicting demands of clean air goals and economic growth, energy independence, suburbanized city structures and other interests. In the course of searching for ways to attain statutory air pollution goals, the government moved from the realm of formal law to substantive economic questions. What began as a supposedly simple effort to abate air pollution threatened to draw government into the establishment of substantial controls over such a wide range of economic activity as urbanization, industrial investment, energy use and land use. Hence a single-purpose act threatened to become a wide-ranging program of national economic planning, and began to affect a wide range of variables in the private sector. When economic disruption or the prerogatives of the private sector are imminently threatened, however, an ostensibly open, loosely organized and "pluralistic" government can react decisively to limit change, whether by restraints imposed on one branch of government by another, or by restraints imposed by higher levels of bureaucracy on lower levels. If, on the other hand, government cannot internally set its own limits, powerful outside forces will act upon the government to restrict change.

The following section analyzes in greater detail the central "structural" imperatives of the political economy which forced the government to retreat from the regulatory goals it established in the Clean Air Act of 1970.

V. Political-Economic Barriers to Implementing the Clean Air Act

The discussion of the legal erosion of the Clean Air Act demonstrates the existence of a group of political-economic barriers to the government's implementation of the Act as written. These barriers make it, in effect, impossible simply to legislate clean air.

[367] This openness is strongly favored where the dominant class is relatively competitive and regionally dispersed, and where the economic system is highly dynamic and must continually innovate to overcome barriers to accumulation, as is the case in American capitalism. A degree of openness can even help to preserve class domination, since some demands from below *can* be met without jeopardizing upper class prerogatives and power. In strictly class terms, however, American government is considerably less open to influence than popular ideology would have us believe. See note 364, *supra*.

A. Industry Resistance

The most obvious impression presented by the legal history of the Clean Air Act is the continual exercise of power by business and industry to resist reforms. In carrying out a program of resistance, business utilizes its considerable economic resources, transforming them into direct political power through interminable lawsuits, lobbying efforts and threats to stop production, relocate or lay-off workers.

Such resistance activities rest partially on complex economic bases, but no strictly "economic" explanation of business behavior is sufficient; exercise of individual and organizational "will" are also elements of business behavior.[368] Even when decisions are made regarding what seem to be strictly economic matters, responses are not necessarily predictable. For instance, since the rate of profit is never strictly determinate, business must weigh the *probable* costs of pollution control against the *probable* costs of resisting control and the *probable* results of such resistance before deciding on a particular course of action. Hence a certain amount of the opposition to clean air regulation has resulted from a conscious obstructionist policy by corporations to avoid the costs of cleaning up the air, the resultant cuts in profits and the changes in process and product which would be required.[369] Waging massive public relations campaigns, initiating lawsuits and exercising political power are perceived to be better than compliance with the law. Whether or not business makes the decision which is economically "correct" for its own interests, it has options besides compliance with controls, and can exercise these options to their full advantage.[370]

On the other hand, business personnel and corporations are also driven, conditioned or limited by economic forces beyond their individual control; they undertake many actions which are less voluntary than they first appear.[371] Yet, even when its options are limited by economic exigency, business may, by virtue of its power, still be

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[368] Donaldson, *Financial Goals: Management versus Stockholders*, 41 HARV. BUS. REV. 116-23(1963); J. GALBRAITH, THE NEW INDUSTRIAL STATE (1967).

[369] *See, e.g.*, Greer, *supra* note 147 (both references) on the corporate arrogance of U.S. Steel.

[370] Behind the exercise of "will" of course, lies the power born of economic valuables such as class position, corporate entities, etc. A good study of the exercise of class power, directly and indirectly, which criticizes the prevailing pluralist view in W. DOMHOFF, WHO REALLY GOVERNS (1976), a critique of R. DAHL, WHO GOVERNS (1961).

[371] For example, U.S. Steel can do nothing to reverse the recent stagnation of the markets for steel. Sweezy & Magdoff, *Steel and Stagnation*, 29 MONTHLY REV. 1 (1977).

able to marshall economic and political forces to its advantage. For example, although a corporation may be threatened with bankruptcy if ordered to comply with regulations, it may salvage the situation by the judicious use of threats to close or relocate which mobilize public sentiment against the enforcement of regulations or succeed in forcing the government to subsidize the costs of cleaning up, as in the case of Wheeling-Pittsburgh Steel.[372]

B. Threat of Dislocation of Particular Industries

Vigorous enforcement of the Act threatens the profits, and hence the viability, of certain industries. Since the closing of a plant due to such enforcement affects not only the owners and managers of the industries in question, but also the workers and their communities, a strong coalition against enforcement is thus formed.[373] Moreover, if the industries are as critical to the national economy as are the automobile, steel and electric utility industries, any serious dislocation of production and profits cannot be tolerated. In fact, these three industries have been in the forefront of opposition to the implementation of the Clean Air Act and have had remarkable success in their efforts.[374] They have won successive delays in implementation deadlines,[375] have obtained weakened standards[376] and have received special regional dispensations.[377] Even when they have ultimately lost their fights against the Act,[378] these industries have managed to delay implementation for years and to waste the time and resources of their opponents.

C. Regional Dislocation and Competition for Investment

Because many declining industries and marginal factories are

[372] See text at note 161, *supra*.

[373] On this phenomenon *see* Greer, *supra* note 147 (both references); Mumy, *Law, Private Property and the Environment*, 4 MD. L. FORUM 69 (1974).

[374] The three "problem" industries for the clean air campaign are all critical to the national economic health, are all mature, declining industries, and have suffered economic setbacks in the 1970's, owing to sagging markets, fuel price increases and foreign competition, among other things. On the problem of the steel industry *see* Sweezy & Magdoff, *Steel and Stagnation*, 29 MONTHLY REV. 1 (1977); on the automobile industry, *see* E. ROTHSCHILD, PARADISE LOST: THE DECLINE OF THE AUTO-INDUSTRIAL AGE (1973). The utilities are in a relatively more favorable position, but future growth through use of nuclear power is encountering increasing difficulties. Vinocur, *Nuclear Business Fizzles*, San Francisco Chronicle, Sept. 23, 1977, at 30, col. 4; Pector, *The Nuclear Power Industry and the Anti-Nuclear Movement*, 8 SOCIALIST REV. 9 (1978).

[375] See text at notes 162-68 and 171-94, *supra*.

[376] See text at notes 318-21, *supra*.

[377] See text at notes 106-07, *supra*.

[378] For example, in the tall stack controversy, see text at notes 136-42, *supra*.

concentrated in certain regions, these regions are currently suffering from generally unhealthy economies.[379] A dramatic example is the so-called "decline of the northeast" (or "snowbelt"), marked by persistent high unemployment, local government fiscal crises, urban decay and generally poor economic growth.[380] In such situations the enforcers of the Clean Air Act again face a dilemma not of their own making, in which they have the power to tip the scales against a community or region. Naturally, there is intense local resistance to further dislocation. Recently the Carter Administration declared a national policy of aid to distressed areas;[381] as a result, EPA has relaxed its strict enforcement of clean air standards in such problem areas as the old steel-producing region of the northeast[382] and has retreated from its transportation planning in such areas as the troubled New York metropolitan region.[383]

The government has failed to impose strict enforcement on Los Angeles, too, even though it is part of the growing sunbelt region. Drastic restrictions, such as EPA's gas rationing scheme,[384] could easily tip regional favorability away from Los Angeles. In fact, all regions compete for capital investment which overzealous pollution control may discourage, so there is a strong incentive among local and state governments to lower their environmental standards, not to mention taxes and other regulations.[385] This was clearly demonstrated by recent events in California, where renewed enforcement of air pollution regulations gave the state a sudden reputation for a "bad-business climate."[386]

D. Fixed Character of Urban and Regional Patterns

Spatial patterns have considerable impact on the amount of pol-

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[379] On the relationship between obsolescent industrial base and regional economic decline *see* Watkins & Perry, *Regional Change and the Impact of Uneven Urban Development*, in THE RISE OF THE SUNBELT CITIES 19 (D. Perry & A. Watkins eds. 1977).

[380] *See* THE FISCAL CRISIS OF AMERICAN CITIES (R. Alcaly & D. Mermelstein, eds. 1977); G. STERNLIEB & J. HUGHES, *supra* note 303.

[381] Address by President Jimmy Carter, "New Partnership to Conserve America's Communities," Statement on National Urban Policy, at the White House (March 21, 1978). *See also*, "Toward Cities and People in Distress," a draft of the National Urban Policy Statement submitted by the President's Urban and Regional Policy Group (Nov. 15, 1977).

[382] See text at notes 154-61, *supra*.

[383] See text at notes 250-55, *supra*.

[384] See text at notes 242-44, *supra*.

[385] For a good example of what can happen in this regard *see* Chernow, *The Rabbit that Ate Pennsylvania*, MOTHER JONES 19 (Jan. 1978). *See also* Harrison & Kanter, *The Political Economy of State "Job-Creation" Business Incentives*, in REVITALIZING THE NORTHEAST (G. Sternlieb & J. Hughes eds. 1978).

[386] *See* Walker, Storper & Gersh, *supra* note 343.

lution generated, especially by automobiles and other means of transport; existing space-extensive patterns of urbanization are not conducive to clean air and may have to be restructured in the interests of public health.[387] However, EPA's rather feeble efforts to effect such changes have met with severe local opposition and were rather quickly abandoned.[388] This failure is not a simple result of the immutability of urban spatial patterns, although, because the organizational structure of the city is literally frozen into stone and steel as factories, highways and cities,[389] change can be very costly and socially disruptive. Rather, certain features of the political economy of American society systematically militate against such change. First, urban spatial patterns have arisen historically for rather deep-seated reasons deriving from the nature and evolution of the United States.[390] Regardless of the historical reasons for existing patterns, attempts to alter the present organization of the cities conflict with deeply ingrained interests and expectations of many elements of society. Second, change is opposed because it threatens profits, wages and individual income flowing from the existing set of urban activities; moreover, such costs are not borne evenly or without economic disruption.[391] Hence, the straightforward—if difficult—problem of restructuring the organization of urban space in the interests of public health is easily perceived as a "trade-off" between clean air on the one side and jobs, higher prices, dislocation and disruption on the other.[392]

E. Threat of Halting New Growth

Critics of the Clean Air Act have accused its enforcers of stopping new growth, whether it be growth around major urban areas which already have a serious air pollution problem[393] or growth in pre-

[387] *See, e.g.*, B. BERRY *et al.*, LAND USE, URBAN FORM AND ENVIRONMENTAL QUALITY (1974); Kurtzweg, *Urban Planning and Air Pollution Control*, 39 J. AM. INST. OF PLANNERS 82 (1973).

[388] See text at notes 228-76, *supra*.

[389] Harvey, *The Geography of Accumulation*, in RADICAL GEOGRAPHY 263 (R. Peet ed. 1977).

[390] *See* R. Walker, The Suburban Solution (1977), unpublished Ph.D. Dissertation, Baltimore, Johns Hopkins University (available from University Microfilm, Ann Arbor, Michigan and Johns Hopkins University library). See also Walker, *The Transformation of Urban Structure in Mid-Nineteenth Century American Cities and the Beginnings of Suburbanization*, in URBANIZATION AND CONFLICT IN MARKET SOCIETIES (K. Cox ed. 1978); Gordon, *Class Struggle and the States of American Urban Development* in RISE OF THE SUNBELT CITIES 55 (D. Perry & A. Watkins eds. 1977); Watkins & Perry, *Regional Change and the Impact of Uneven Urban Development*, in THE RISE OF THE SUNBELT CITIES 19 (D. Perry & A. Watkins eds. 1977).

[391] Mumy, *supra* note 373 and Mumy, *Economic Systems and Environmental Quality*, to be published in 11 ANTIPODE (1979).

[392] *Id.*

[393] See text at notes 334-54, *supra*.

viously undeveloped, "pristine" areas.[394] Indeed, literal enforcement of the Act would preclude industrial, transport or residential development in cities which have not met primary ambient air standards, while strict accordance with the principle of "no significant deterioration" would bar industry from moving to as yet unpolluted regions.

New growth would be less threatened if ambient air standards had already been met for urban areas and if all new pollution sources complied with emissions limitations. Yet, the economy rushes ahead whether or not these goals are achieved, with intense pressure being exerted from all quarters to accommodate such growth. Business wants its freedom to expand, promising such benefits as jobs, tax revenues, real estate development and commercial growth.[395] The promise of such benefits generates political support for business objectives from nonbusiness interests: workers want jobs, small businesses want increased local commercial activity and governments want more tax revenues.[396] Yet, the erosion of the 1970 Act cannot be understood as simply a response to growth; the specific character of that growth is important. In the latest wave of investment since the contraction of 1974-75, many industries have shifted to new production techniques and new locations. For example, industry is adopting more energy-intensive production methods and is relocating facilities to suburban and rural areas.[397] Naturally, any barriers to these growth trends would meet with stiff industry opposition.

Several of the "compromises" in the Clean Air Act, initiated by EPA and translated into law with the Amendments of 1977, are meant to facilitate these growth trends.[398] Nonetheless, such compromises cannot resolve the underlying dilemma: if clean air cannot be achieved *without* growth, how can it be achieved *with* growth? Indeed, the compromises pose an even more discouraging question:

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[394] See text at notes 302-33, *supra*.

[395] The empirical tendency for capitalist enterprises to expand is obvious, and the imperatives to grow are also clear: the company that does not expand is likely to lose out to its competitors, to disgruntle its stockholders, to find its bond rating drop, to offer fewer opportunities for advancement to its managers, and so forth. All but the first hold true even for so-called "monopolies" such as public utilities; and even there, the threat of losing territory to competitors is great.

[396] *See* Walker, Storper & Gersh, *supra* note 343 and Chernow, *supra* note 384.

[397] Massey & Heegan, *Industrial Restructuring versus the Cities*, 15 URBAN STUDIES 273 (1978); B. COMMONER, THE POVERTY OF POWER (1976); G. STERNLIEB & J. HUGHES, *supra* note 303.

[398] *E.g.*, emissions offsets, see text at notes 334-54, *supra* and Class III lands, see text at notes 318-33, *supra*.

how can the gains won thus far be maintained over any long period of time in the face of the growth-imperative?

F. The Energy Crisis

The first major legislative revision of the Clean Air Act came in 1974 in the wake of the so-called "energy crisis" of the previous winter.[399] Faced with the voracious energy demands of the economy and the negative impacts of increasingly expensive oil imports on the balance of trade and the international diplomatic strategy of the United States, the national leadership in business and government has promoted a policy of "national energy independence" under both Republican and Democratic administrations.[400]

One of the salient features of the new energy policy is an increased reliance on domestic coal, a notoriously dirty fuel. To a lesser extent the policy emphasizes the use of high-sulfur Alaskan oil with its attendant air pollution hazards. Another thrust of national policy has been to force better gas mileage in new cars, but this goal competes with the attainment of emissions standards. Since consumers also desire better gasoline mileage because of higher gas prices, the automobile industry is in a good position to resist or delay pollution control measures. National energy policy thus contradicts the clean air effort.

G. Declining Maintenance of Existing Pollution Sources

Even in cases where industrial decline or stagnation is not obvious, companies may try to cut costs in ways which produce more, not less, pollution over time.[401] Oil refining is a good example of this phenomenon.[402] Twenty years ago, a refinery would be shut down for four weeks a year for maintenance.[403] Such maintenance is essential for the prevention of leaks and accidents which spew pollutants into the air. Major maintenance work is performed less often now, usually without even closing the refinery. Furthermore, the number of workers operating a refinery has fallen by half in the same time

[399] Energy Supply and Environmental Coordination Act of 1974, Pub. L. No. 93-319, 88 Stat. 246 (1974).

[400] See text at notes 124, 130, *supra*.

[401] On the tendency to cut labor costs, in particular as profits decline *see* B. COMMONER, *supra* note 397.

[402] On the recent cyclic decline in refinery profitability *see* J. BLAIR, THE CONTROL OF OIL (1976).

[403] Conversation with Anthony Mazzochi, Vice-President, Oil, Chemical & Atomic Workers International, Berkeley, California, May 1, 1978.

period, leaving almost no laborers and no time for on-going routine maintenance and inspection.[404] As a result, the physical condition of refineries has deteriorated and, with it, the condition of the surrounding air.

H. Recession

The international economic troubles of the 1970's have contributed significantly to all the preceding problems, thus acting as a major impediment to the achievement of clean air. Economic conditions have contracted markets, cut profits and generated lay-offs in almost all United States industries, especially among the oldest and weakest of the big industries.[405] Their impact has been harshest on declining regions, sapping them of investment and further imperiling the livelihood of the residents.[406] The economic crisis has generated serious fiscal problems for cities, making any revenue-producing growth, whatever its character, appear more attractive.[407] It has also exacerbated the balance of payments problems of the United States, making the outflow of energy-dollars a greater threat to the national economy.[408] Finally, the recession has left less surplus for "indulging" in environmental protection in general, shifting priorities to the achievement of a healthy economy.[409] In short, the recession has pinched the pocketbooks of industry, labor and government, making everyone hungrier for jobs, growth and tax receipts. Consequently, many of the social goals of the 1960's, including clean air, have been scaled down. In hard times, social welfare notions are often the first to be abandoned because they are viewed as "unrealistic" or as "luxurious."[410] Recession therefore has a powerful effect on the continued struggle for clean air.

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[404] *Id.*

[405] On the recent recession, *see* E. MANDEL, THE SECOND SLUMP (1978); U.S. CAPITALISM IN CRISIS (Union of Radical Political Economists, ed. 1978); P. SWEEZY & H. MAGDOFF, THE END OF PROSPERITY (1977); THE ECONOMIC CRISIS READER (D. Mermelstein ed. 1975).

[406] Heil, *Sunbelt Migration,* in U.S. CAPITALISM IN CRISIS 87 (Union of Radical Political Economists, ed. 1978); Massey & Meagan, *supra* note 397; Watkins & Perry, *supra* note 379; G. STERNLIEB & J. HUGHES, *supra* note 303.

[407] THE FISCAL CRISIS OF THE AMERICAN CITIES, *supra* note 380.

[408] Sweezy & Magdoff, *Emerging Currency and Trade Wars,* 29 MONTHLY REV. 1 (1978).

[409] England, *Environmental Gains Going Up in Smoke,* in U.S. CAPITALISM IN CRISIS 152 (Union of Radical Political Economists, ed. 1978).

[410] On the erosion of social welfare gains since the 1960's *see* R. PARKER, THE MYTH OF THE MIDDLE CLASS (1972). The cuts made in New York City's budget following the 1974 fiscal crisis are a good microcosm of what happens during a period of financial difficulty. *See* Tabb, *Blaming the Victim,* in THE FISCAL CRISIS OF AMERICAN CITIES 315 (R. Alcaly & D. Mermelstein eds. 1977).

I. Unanticipated Circumstances and Technological Change

An important principle of the capitalist economy is that internal changes cannot be controlled or easily anticipated by government regulators. Consequently, barriers to successful realization of the goals of the Clean Air Act exist which Congress did not, strictly speaking, anticipate when it passed the 1970 legislation. For example, Congress did not envision the downswing of the business cycle, the decline of the steel industry to its present nadir, the implications of shifting investment, the movement of new industry to the sunbelt or the other inter-sectoral, inter-regional and international movements of capital.[411] In passing the single-purpose Clean Air Act, it concentrated on a single attribute of post-war economic development: deteriorating air quality. But in segmenting one aspect of a complex problem, Congress overlooked its structural causes. Consequently, EPA found itself limited to the use of static tools in a dynamic situation.

One type of dynamic change which Congress cannot anticipate and regulators cannot control easily is technical change. Examples of technical innovations that create new, unanticipated difficulties for Clean Air Act enforcement include the continuing output of new chemical substances with toxic, carcinogenic and mutagenic properties,[412] and the emerging capability to produce synthetic fuels from coal which creates serious by-product emissions.[413]

New knowledge about pollutants in the air and their health effects has created a second category of unanticipated change. Scientists have recognized dangers from previously unknown sources, for example, from substances found in extremely low concentrations which could not be measured before. Official cognizance of their danger has come, albeit reluctantly.[414] However, both knowledge of the dangers and government action continually lag behind the production of new industrial substances. The short list of toxins and the great emphasis on the six "criteria pollutants" of the 1970 Act seem ruefully outdated and inadequate from a current perspective.

Certain results of the Clean Air Act itself have presented regulators with problems. New fuel additives developed to replace lead

[411] A discussion of the causes of these phenomena which originally created the economic barriers is beyond the scope of this article. Such arguments, however, can be found in the works referenced throughout Section V.

[412] B. COMMONER, THE CLOSING CIRCLE (1971).

[413] Sauter, *Synthetic Fuel Hazards*, THE ELEMENTS 1 (April 1977).

[414] See text at notes 51-52, *supra*.

have themselves proven to be hazardous.[415] Catalytic converters, which have successfully reduced most automobile emissions, produce increased emissions of sulfuric acid.[416] Powerplants in their search for coal and their avoidance of air standards have relocated to the Rocky Mountain region where they no longer pollute the already substandard air of metropolitan areas, but rather degrade previously pristine airsheds.[417] Indeed, it appears that the only development which the enforcers of the Clean Air Act can definitely anticipate is unanticipated change.

VI. Conclusion: Why Government Cannot Regulate and Plan for Clean Air

In the last twenty years, public sentiment against increasing pollution of the environment produced a change in philosophy toward pollution problems. Abandoning the former *laissez-faire* attitude, environmentalists and other clean air advocates have apparently adopted the view that the solution to pollution problems lies in government regulation. This article has questioned the ideology of regulation, which is so prevalent in American politics.

The perception of the problem of governing in our society as one of mobilizing popular sentiment, passing a law and creating a government agency to enforce the law is a mystification of political-economic reality. Such a simplistic perception is more prevalent than might be supposed.[418] Yet, even more sophisticated views still mystify the actual processes of social control and social change by explaining the phenomenon of regulatory failure — and hence the basic difficulty of controlling conditions of society such as air quality and energy use — as, *inter alia,* failures in logic by the architects of regulatory programs, failures of will on the part of those who were to implement and enforce the programs, failures of judicial logic in interpretation of the Act and regulations or "capture" of regulatory agencies. This article strives to pierce the layers of illusion to reveal the real nature of the problem of societal self-governance which underlies the failure of regulation.

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[415] See text at note 203, *supra.*

[416] See text at note 186, *supra.*

[417] See text at note 304, *supra.*

[418] There seems to be an assumption that regulation acts simply and directly, and that the issuance of a rule or an order by an administrative agency results in the achievement of the mandate and the purpose of that rule or order without any complicating consequences. This assumption is not to be found explicitly in any discussion but seems to be implied in most of the literature.

D. Savage *et al.,* The Economics of Environmental Improvements 168 (1974).

Any belief that the original goals of the Clean Air Act would be met on schedule has been destroyed by the passage of time. The 1975 goals may still be reached in the future. Yet, although such speculation cannot be proven false before the fact, the relatively limited progress made toward cleaner air and the erosion of the law which was designed to achieve that goal strongly indicate that clean air standards will not be met. Faced with the present reality of unmet goals and eroded law, various agents of government and the legal system must shoulder the blame. EPA, in particular, is a primary target for criticism. However, all agents have weakened at one time or another, and EPA often took a strong stand on issues only to be overridden by the President, courts or Congress. Thus, major change is difficult unless all branches of government move simultaneously.[418]

"Government" is not the source of the problem, however. Government actors are typically moved by external political forces, and government policies encounter barriers to their realization in the external economic environment. The economic structure and its imperatives are the origin of the once-removed, but politically powerful, obstacles to successful implementation of the Clean Air Act and the source of erosion of the Act. Government cannot overcome these barriers and simply regulate and plan for clean air because it does not have sufficient power. The regulators do not control the central variables which determine the amount and kind of pollutants which are put into the air. They do not control the key decisions over production, investment, employment and location. They can only try to redirect the decisions of those who do have these basic economic powers. Moreover, government lacks control over the collective result of private economic activities. Congress and EPA do not have the wherewithal to prevent an industrial crisis in steel or automobile manufacturing nor to countermand the international recession and inflation of the 1970's. Their role is limited to a "realistic" reaction to such exigencies. The indirect power of the economic system disciplines the regulators and their supporters by means of crisis. It forces them to retreat from strict enforcement of pollution laws for fear of creating unemployment, triggering regional economic decline or disrupting the economy severely by penalizing a major industry. Similarly, regulators cannot redirect the path of economic development, whether this means reorganizing the spatial layout of cities, revising a wasteful pattern of intensive energy use

[418] *See* P. BACHRACH & M. BARATZ, *supra* note 363.

or reorienting the country's transportation system. Such enterprises would require not only that command over economic decisions which government does not have, but also would require time to rebuild the physical environment of human activity and effect complex social change, which no single piece of legislation can achieve.

Clean air regulations are thus limited by the parameters of government power. They are also limited by the positive exercise of power by the class in society which has the most to lose from successful societal control over production and investment decisions—the owners and managers of capital. Such power expresses itself directly and indirectly. Business can resist regulation and limits on its freedom to make a profit when and how it chooses through the direct use of economic power. This resistance takes such forms as lawsuits, noncompliance or relocation to avoid areas with strict regulation; it may be transformed into political power such as lobbying or support from voters who would be hurt by relocation. The cumulative decisions of private capital are also fundamental in shaping the patterns of urbanization, transportation and energy-use that exist today and confront government regulators as givens.[420] This shaping power of capital extends into the future as well; as capital changes societal patterns, regulators appear only to be chasing after it—coping with new hazardous products, new locations for powerplants and new industrial processes. Finally, however, private power is also confined within a certain range prescribed by the exigencies of social reproduction as a whole and by the cumulative impact of a multitude of individual decisions made by the purveyors of capital. U.S. Steel and General Motors, despite their size, are as powerless as EPA to prevent recession or regional change.

The division and inequality of power and the role of economic imperatives do not reduce the reality of the political economy to either total domination by economic imperatives or economic determinism. Regulation can effect change; it already has produced cleaner air. Without the Clean Air Act of 1970, air quality probably would not have shown any improvement, and worse conditions might now prevail. The evidence presented in this article chronicles the erosion of the Act, but it also shows how the political activities of clean air advocates have played an important role in influencing the actions of regulators and attaining the gains that have so far been made.

To a large degree, then, the perception of government as regulator

[420] *See* Walker & Large, *supra* note 227.

is also a myth; instead, the government is an arena where contending forces do battle over the conditions of social life, such as the quality of air, and society struggles to discover the possibilities for improving the way we work, live, govern ourselves—and breathe. If clean air is found not to be achievable given presently existing barriers in social organization, then, perhaps, it is not new laws that are needed but a transformed economic and political system as a whole.

POSTSCRIPT

Between the time this article was completed (mid-1978) and the final preparations for its publication were made (early-1979), a few noteworthy events occurred which further corroborate the article's theme of "erosion" of the Clean Air Act.

*For the first time, a primary ambient air quality standard has been relaxed. On January 26, 1979, Environmental Protection Agency (EPA) Administrator Douglas Costle lowered the ozone standard from 0.08 parts per million to 0.12 parts per million, a fifty percent increase.[1] Although EPA claimed that its action could be justified by new health research findings,[2] this claim was vigorously disputed by environmentalists and by the California Air Resources Board.[3] The American Petroleum Institute, on the other hand, said that it would file suit to lower the standard still further.[4]

*According to the Clean Air Amendments of 1977, new State Implementation Plans must be forthcoming by January 1, 1979 for areas still not in compliance with air quality standards.[5] As of the January 1, 1979 deadline, however, not one state had submitted its plan to EPA.[6]

*Opponents of the Clean Air Act won an important strategic victory in California with respect to the preparation of the revised

[1] 44 Fed. Reg. 8202 (1979) (amending 40 C.F.R. § 50.9). The revision also changed the chemical designation of the standards from "photochemical oxidants" to "ozone," the principal, but far from sole, component of photochemical smog. *Id.* Only two cities out of 105 being monitored currently meet the standard; EPA estimates that 15-20 smaller cities will meet the new standard. Most large cities are considerably above both standards; Los Angeles is the worst. San Francisco Chronicle, Jan. 27, 1979, at 1, col. 2.

[2] *See* 44 Fed. Reg. 8203-04, 8207-11 (1979).

[3] San Francisco Chronicle, Jan. 27, 1979, at 1, col. 2.

[4] *Id.*

[5] Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 172, 91 Stat. 746 (1977) (to be codified in 42 U.S.C. § 7502).

[6] Personal communications with an anonymous EPA official, San Francisco Regional Office, March 3, 1979.

State Plan. Owing to its history of leadership in air quality control, California is widely considered to be a test case for how vigorously other states will respond to the new deadline. Therefore, any weakening of that state's resolve redounds to the detriment of EPA's willingness to pressure less aggressive states.

The first step in the California-based opposition effort to undermine state planning was to attack local efforts to prepare regional air quality plans which would ultimately be incorporated in the State Plan. The San Francisco Bay Area Environmental Management Plan, drafted by a task force under the auspices of the Association of Bay Area Governments, is the most important of these air quality plans. The Bay Area Environmental Management Plan was stimulated by and funded under Section 208 of the 1972 Federal Water Pollution Control Act,[7] and originally consisted of two units: air and water. Under fire from business-led organizations such as the California Council for Economic and Environmental Balance, the Committee on Labor and Business and the Bay Area Council,[8] the task force ultimately dropped proposed land use controls thereby weakening the air pollution control plan.[9] This remained an equivocal victory for the organizations, however, because the State Air Resources Board, under Tom Quinn, still had final say over the State Plan. However, opponents of the Board went to the California legislature with a bill which said that the Air Resources Board could not revise the air management plan, but must include it as is in the final State Plan.[10] Governor Brown signed the bill into law in September, 1978, over the objections of his own close advisor, Quinn.[11]

*Emboldened by the preceding success, the Clean Air Act opposition introduced bills in both houses of the California legislature which would force the Air Resources Board to submit the final State Implementation Plan to the legislature for approval before it could be forwarded to EPA.[12]

*On January 23, 1979, the California Energy Commission and the State Air Resources Board adopted a joint policy aimed at stream-

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[7] 33 U.S.C. § 1288 (1976).

[8] *See, e.g.*, [San Francisco] Bay Area Council, Bay Area Council Bulletin (No. 17, Feb. 1979) for these business-led organizations' attitude toward pollution control.

[9] Association of Bay Area Governments (ABAG) Environmental Management Plan for the San Francisco Bay Region, final version approved by ABAG on Jan. 13, 1979.

[10] SB 2167 (1978).

[11] Personal communications with an anonymous member of the Air Resources Board Staff, Sacramento, California, Sept. 21, 1978. *See also* Bay Area Council Bulletin 6 (No. 17, Feb. 1979).

[12] SB 228 and AB 300 (1979).

lining government permit procedures for powerplants. The policy gives final authority to the Energy Commission and allows the Commission to override local air pollution control districts if necessary.[13] This move was sharply attacked by local district authorities in Southern California and by environmentalists.[14] A spokesman for Friends of the Earth objected to the policy on the grounds that "[i]t comes down to power plants not having to meet state standards when all other industries do."[15]

*Finally, a national congress of business and labor groups was held in San Francisco in January, 1979, to consider methods for compelling Congress to amend the Clean Air Act and to eliminate its most objectionable features. This bold offensive against the Act was sponsored by such organizations as the American Petroleum Institute, the Bay Area Council, the Commission on Labor and Business, the Construction Industry Advancement Fund and the California Council for Economic and Environmental Balance, with the latter serving as host.[16] Clearly, the success of campaigns against environmental regulations in California directed by well-funded united-front organizations, like the Council for Economic and Environmental Balance, has moved the business-led forces of opposition to a new level of coordinated activity in place of the more or less random acts of legal obstruction and non-compliance characteristic of their past struggle against the Clean Air Act.[17]

[13] San Francisco Chronicle, Jan. 24, 1979, at 1, col. 1.

[14] *Id.*

[15] Ron Rudolph, *quoted in* Not Man Apart, Feb. 1979, at 6, col. 1.

[16] An idea of the antagonistic tone of the Conference (for which there are no transcripts) can be had from the excerpts of speeches printed in the BAY AREA COUNCIL BULLETIN 2-4 (No. 17, Feb. 1979).

[17] For more on the crucial anti-regulatory initiatives of business and labor in California *see* Walker, Storper & Gersh, *The Limits of Environmental Control: The Saga of Dow in the Delta*, to be published in 11 ANTIPODE (1979).

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